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ANTICIPATING AND MATCHING SKILLS DEMAND AND SUPPLY

SYNTHESIS OF NATIONAL REPORTS

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PREFACE

The European Training Foundation (ETF) supports policymakers and practitioners in its partner countries in their efforts to improve their systems of matching supply and demand for skills. To this end, the ETF has launched a three-year innovation and learning project, 'Anticipating and matching demand and supply of skills in ETF partner countries', which is being implemented from 2011 to 2013. The project has pooled a group of renowned international experts together with national experts from a representative range of the ETF partner countries. Conceptual clarification on the basis of international state-of-the-art approaches and stocktaking of current practices and challenges in skills anticipation and matching in ETF partner countries were the main tasks of the first year.

Together with the experts, the ETF analysed current issues and practices and discussed the pros and cons of different approaches and methodologies for skills anticipation and matching in view of the current needs and conditions in transition and developing countries. Anticipation and matching approaches need to be tailor-made to fit the specific framework conditions and needs in each country.

The results of the work in 2011 are documented in a first set of papers: a methodological paper on how to measure mismatch, a paper on conditions and challenges for transition and developing countries, and national stocktaking reports (country reports). This synthesis report provides a cross-country analysis of the national reports. For further information please also consult the ETF website (www.etf.europa.eu).

The ETF is delighted to disseminate working papers, thus contributing to an informed and lively debate with ETF colleagues, external experts and practitioners in ETF partner countries.

The author owes a great deal to the colleagues involved in discussions and presentations during the course of this project, and in particular to Rob Wilson for his thorough reading of the report and his many very productive and encouraging suggestions, as well as to Will Bartlett, Lizzi Feiler, Eduarda Castel-Branco and Timo Kuusela for their helpful comments. The author is, of course, still responsible for the content of this report.

Lizzi Feiler
Project coordinator 2011, ETF

1. INTRODUCTION

This report is part of a wider project that rests on a partnership between the ETF and a network of experts from eight countries, assisted by three international experts[1] together with experts from the ETF. The objective of the project is to find methods to improve the anticipation and matching of the demand for and supply of skills in ETF partner countries. In addition to an analysis of the approaches taken at country level to tackle anticipation and matching problems, three other inputs are provided: an analysis of how matching and mismatch can be measured using the available data (Johansen and Gatelli, 2012); expertise on the specific situations and problems of the economy, the labour market and the provision of skills in transition countries (Bartlett, 2012); and an analysis of how forecasting can be used and developed to improve anticipation (Wilson, 2011). The results are used and taken forward in a position paper provided by the ETF (Feiler et al., 2012). A key part of the project is the ensemble of country reports (see References) provided by the network of country experts[2], based on a common framework developed and agreed as the project's first step (see Annex 2).

The project questions some common assumptions about matching and anticipation by accepting the complexities inherent in these tasks and policies – complexities which cannot be tackled easily. This means accepting, among other things, that:

■ matching is not an unsophisticated process of trying simply to fit each and every person into a particular job – that is, of fitting round pegs into square holes;
■ a vast spectrum of skills is used in all aspects of life, and education is not just about work – most people can do many jobs and most jobs can be done by many people with different skill sets;
■ jobs themselves also change dynamically over time, as do individuals and their skill sets.

The synthesis draws on country reports from Croatia, Egypt, Kyrgyzstan, the Republic of Moldova[3], Montenegro, Serbia, Turkey and Ukraine. These eight countries differ in many respects, including size, economic structures, location, history and institutional background, but three particular groups may be distinguished: transition countries which were part of the former Soviet Union, transition countries from former Yugoslavia, and Mediterranean countries.

This report looks at the experience of anticipation and matching of the demand for and supply of skills in these countries, drawing upon a broad range of previous work in this area. The project as a whole has taken a broad conceptual approach to the problems of matching and anticipation of skill requirements. A key issue is that the tasks involved in matching and anticipation span several levels of aggregation, whereas the perception of them is frequently confined to selected aspects or levels.

■ Work on skills anticipation is in general emphasised very strongly at the macro level, but it is not taken into account so much that everyone is implicitly anticipating skills needs all the time.
■ In skills matching the emphasis is heavily laid on the micro level (e.g. by the matching models in labour economics), or on the role of career guidance and individual support through public employment services (PES), whereas, in fact, matching also involves practices at more aggregate meso or macro levels carried out by the state and others, for instance institution building, and policy measures, which are taken into account to a lesser extent.

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1   William Bartlett, Lorenz Lassnigg and Robert Wilson.

2   The national experts for the eight countries involved in 2011, who also prepared the country reports, were: Pedrag Bejakovic (Croatia), Atef A. Malak (Egypt), Nazik Beishenaly (Kyrgyzstan), Ana Popa (Moldova), Vojin Golubovic (Montenegro), Hakan Ercan (Turkey), Mihail Arandarenko (Serbia) and Oleksandra Betliy (Ukraine).

3   Hereinafter 'Moldova'.

2. CONCEPTUAL FRAMEWORK

The theoretical concept specifically developed for this project understands matching and anticipation as complex and constantly ongoing practices, carried out explicitly and implicitly through the interactions of various sets of actors in the economy, polity and society. These practices are performed at different levels of aggregation (individual, institutional, organisational, and systemic) and in different fields or subsystems (economy, education, social security, polity, information, culture) which are set in the context of regulatory and institutional frameworks. All these factors interact with each other in a variety of ways and configurations. Deliberate attempts to improve matching and anticipation at the policy level constitute one part of these wider practices, and must take into account the existing range of ongoing practices as part of the environment in which they have to operate. These complexities mean that much of the ongoing process of matching and anticipation is in practice unobservable and unpredictable, with the result that deliberate attempts by particular actors are difficult to design, on the one hand, and difficult to carry out and evaluate, on the other.

A very important point emerging from this conceptual approach is that a lack of deliberate attempts to match skills at the macro, or policy, level does not mean that matching and anticipation do not exist in practice. It is in part exactly this fallacy, which at one extreme assumes that political attempts would be intervening in a *tabula rasa* that makes interventions often ineffective and futile. In fact, attempts to make relevant policy are in fact already intervening in a dense array of existing practices by different actors including, among others, young people and their parents, employers and employees, education and training providers, social partners, and policymakers (administrators and managers) at the local, regional, national and supranational levels. The needs and actions of all of these actors must be adequately taken into account in the design and implementation of any policies.

The big question is: how can this be achieved under the assumption of complexity, with its high degree of unobservability and unpredictability? Under such conditions, we might expect to see many symbolic actions or policies; that is, the response to pressing challenges might consist of activities that pretend to offer solutions, in order to demonstrate competence, but are not really able to do so. This expectation is reinforced by the fact that, in such a constellation of unobservability and unpredictability it is particularly difficult to obtain and evaluate the results of any activities carried out.

Two overall approaches to this problem tend to be taken. At one extreme, the approach is to rely on market forces and the associated assumptions about the rationality of decisions taken by 'homo economicus', and accordingly to refrain from intervention – in fact merely to 'hope and pray' that the desired matches will occur. At the other extreme, the approach is one of top-down indicative planning, whereby the state decides about the provision of education based on 'true' forecasting of future demand, as conceptualised by the 'manpower planning' approach of the 1960s.

As the report from Croatia rightly points out, neither of these extreme approaches can be expected to bring about the desired results: reliance solely on the market fails (among other reasons) because of the problems individual actors confront in obtaining and understanding the relevant information, whereas planning fails (among other reasons) because of the problems of 'true' forecasting and implementation. It seems likely, then, that some combination of market mechanisms and policy measures, supported by the creation of adequate institutional frameworks that can assist the actors to take the right decisions, will lead to an improvement in skills anticipation and matching.

An important issue that will be addressed in this report and is implicit in the guidelines for the country reports (Annex 2) is, therefore, to try to find out as much as possible about ongoing practices and their linkage to discourses and ideas concerning deliberate policies and actions aimed at improving skills matching and anticipation in each individual case.

The conceptual framework for this analysis consists of the basic elements listed below.

- Consideration of, and distinguishing between, the relevant practices and the different kinds of actor (individual and collective) involved, at the micro (individual) level compared with the meso and macro levels, taking into account:
  - individual practices of anticipation and matching;
  - meso- and macro-level policies and interventions;
  - the complex role of education, which is closely involved with, but at the same time separate from, these practices and policies.
- Recognition of the important role of symbolic structures (systems of classification and measurement) at the institutional level – structures which simultaneously guide and are produced by the practices of the various actors – in making matching visible and thereby structuring reality rather than merely conveying information. These symbolic structures:
  - construct the units of observation (qualifications, occupations, sectors, versions of 'skills');
  - provide the basis for statistical measurement and the production of 'formal knowledge';

- give the appropriate weight to the different aspects of education (levels, fields; meritocratic versus content aspects);
  - take account of the role of informal and local knowledge in matching and anticipation.
- Examination of the material (physical) and organising mechanisms of aggregation and system building that integrate micro-level practices into meso- and macro-level institutional structures and policies, both in education (e.g. policy, bureaucracy) and employment (e.g. market, decentralised enterprises).
- Unpacking the differences in the meaning, conceptualisation, and measurement of 'skills', for instance as regards qualifications versus competences and quantitative versus qualitative aspects.
- Incorporating the dimension of time: anticipation brings time into matching by relating past and current practices and experience to future prospects, and by considering the different time perspectives taken by different actors (employers, parents, students) and different systems or parts of them (employment, initial or continuing education).
- Fulfilment of three basic functions in relating anticipation and matching to each other:
  - creation of knowledge and information about current and expected developments in supply and demand: this encompasses a variety of methods, adequate and sufficient data, and good knowledge and understanding of the current situation and the past development, and includes both formal and informal knowledge;
  - dissemination of this knowledge and information to the various actors: the knowledge must reach the actors, formal and informal knowledge must be combined, institutional structures are needed;
  - implementation by means of deliberate anticipation and matching policies: the active involvement of education systems and institutions is necessary.

These basic elements of the framework may be further elaborated.

Distinction between practices at different levels

A distinction between practices at different levels, individual and aggregate, needs to be made. At the individual level, the people on both the supply side (students and learners, graduates, employees, job seekers, unemployed people, etc.) and the demand side (employers and enterprises, their executives and managers, etc.) need to be considered. At the aggregate level, the importance of institutions (regulatory frameworks) and systems (organisational frameworks) needs to be recognised.

Practices at the individual level

The core practices of matching and anticipation are going on at the individual level. The processes constantly shaping and reshaping the millions of potential matches between individual people and the jobs they might undertake, influenced by mobility and flexibility, and including the anticipation of how their current activities might be related to future outcomes and developments, are continually evolving. These processes have many different aspects, including the duration of matches, life and career expectations, business strategies, general economic prospects, and so on. The goal of the individual actors is to reach a 'good match'. Many of these core practices are dynamic and unobservable, yet this is in fact the key area that must be targeted by any deliberate attempt at matching and anticipation policy.

Practices at the aggregate level

At the aggregate level, the core practices of matching and anticipation are embedded in the behaviour of the labour market and the employing organisations operating in it, as well as in a set of other kinds of institution (industrial relations and collective bargaining, occupational frameworks, social security provisions, regulation of migration, etc.). Matching primarily goes on in the labour market and in the employment system (including both 'external' and 'internal' labour markets, both of which are becoming increasingly transnational and include various kinds of migration flow.

The contribution of education to matching and anticipation

An important point is that education is functionally a part of these practices, although it is not directly involved in them. However, the contribution of education to matching and anticipation poses many questions. It is very clear in general that there is a contribution, but how it works and, particularly, how it can be influenced, is a great deal less clear. Education comes into play mainly through its outputs and results: it somehow moulds and changes the characteristics which individual people then bring into matching practices, but its mission is much broader, and it has no direct influence on the characteristics of the jobs performed by individual actors in the economy, which constitute the other side of the matching process. For the most part, there is no clear linkage from matching practices to the input side of education. At this aggregate level, we have, on the one hand, complex relationships between structures and incentives and, on the other, an 'institutional gap' between education and employment, which must somehow be bridged if policies of matching and anticipation are to work efficiently. In order to bring about such results, policies must take into account the complex interrelations between the aggregate structures and the micro-behaviour of actors.

Symbolic structures

Symbolic structures are a key element at the institutional level and include, in the first place, the aggregate units and dimensions of information and description on both sides of matching practices, for example 'classification practices', which include 'knowledge, skills and competences' (KSCs), education programmes, qualifications, occupations, job descriptions, sectors and so on. The second aspect of this element consists of procedures for the measurement of statistical aggregations and for the distribution of the units of description.

These symbolic structures, which provide the information about what goes on in matching, convey much more than mere 'facts', because they make the complex practices visible *in a certain way*, and therefore structure reality. That means that the reality is different for different actors, depending on how the various processes are described by different kinds of symbols and which kinds and aspects of description are used by and available to them. It makes a difference, for instance, whether 'occupational labour markets' actually exist and whether occupations are used in practice as a dimension of matching, or whether they exist only as statistical units of mere description. Another example is the relative weight ascribed in matching practices to education levels in relation to occupations, and how these different variables are used as signals in matching practices.

Understanding this is important for all kinds of aggregate actor, and in particular for those at the policy level, because they are far removed from the core practices at the individual level. The symbolic structures used for aggregate descriptions and accounts then interact with the rich informal and local knowledge that actors at the individual level are using in their core practices. These accounts may compete with each other (for instance, the value ascribed to higher education qualifications may differ very much among different actors). Very important in this respect are the current developments in the field of qualifications frameworks, which are trying to incorporate a new dimension of information about skills into the symbolic structures, using KSCs as descriptors for learning outcomes that are then used as the content of qualifications and occupations.

System building processes

A second aggregation mechanism, parallel to that of symbolic structures, concerns the material processes of system building on the education and employment sides of matching. These processes integrate the organisations and actors on both sides (schools, universities, other learning providers, teachers, trainers, administrators, managers; enterprises, sectors, crafts, unions, professions, etc.) into more aggregated entities. At the macro level this involves national systems, represented by departments or ministries at different levels. The structures tend to be of different kinds on the two sides of the matching process: education is a more integrated and top-down structure (sometimes federally differentiated), and the economy is a more decentralised structure, with competing enterprises as the main players, and less integrated aggregate structures (including possibly different degrees of centralisation between employees' and employers' associations).

Practices of matching are situated at different levels, the labour market institutions being key players. In most countries several ministries, in which responsibilities are distributed differently, are involved in these practices at the aggregate organisational and systemic levels. Ministries of education, and sometimes of science and research, are responsible for the supply of education; ministries of labour or social affairs, often with different additional responsibilities, are responsible for the PES; and ministries for the economy are responsible for the affairs of enterprises. Thus the matching practices at these aggregate levels, and in particular deliberate policy attempts to intervene, include collaboration between different departments, and thus between a range of more or less integrated top-down structures. Such collaboration is always difficult.

Skills

Skills are a key element in matching persons to jobs. However, the meaning of 'skills' embraces many aspects and the concept is used in many different ways. Often the term is used as a general expression of the (economic) capabilities of people at and for work, but often its meaning is not separated from 'qualifications'. A new terminology (mentioned above) developed in the course of attempts to create qualifications frameworks is KSCs – referring to knowledge, skills and competences – where skills denote a specific, technical aspect of capabilities, as distinguished from knowledge (declarative) and competences (social, personal). Skills represent mainly the technical and/or operational aspect of the immediate practical performance of work tasks.

A distinction is made specifically in relation to qualifications: the *content* aspect is represented by skills, distinguished from the *credentials* aspect, represented by accredited formal qualifications (certificates). In matching practices these aspects are of different importance in different realms: on the employment side the use of skills is the core issue, whereas on the education side skills are produced within the course of study followed to obtain the formal qualifications, which are the main visible output; in the matching processes qualifications are used as a representation of, or proxy for, skills. At the aggregate level the systems focus on different aspects: on the employment side, particularly from the point of view of employers, the focus is on skills, whereas on the education side the focus is on qualifications.

The question of how skills are represented by a certificate or qualification is at the core of the reasoning behind qualifications frameworks, where the content of qualifications should be adequately represented by (measurable) learning outcomes. In the discourses about matching, however, the term 'skills' is used not only with this specific meaning but with several different meanings that are often merged and confused. In particular the content/qualitative meaning (do people have the right skills to perform a job?) is confused with the formal/quantitative meaning (do the qualifications levels of people correspond to their job levels or occupations?). The different meanings have important consequences for measurement, and for the symbolic structures: in most kinds of representation (e.g. in qualifications and occupations), the specific content-related meaning of skills remains implicit.

Skills anticipation

Discussions about skills anticipation bring the aspect of *time* explicitly into matching. Matching practices are predominantly processed as an ongoing, current issue, in which, however, expectations about the future are implicitly included. Different actors typically operate according to different time frames, and this causes a major problem in matching: employers need the right skills immediately, whereas students (and parents) choose initial education with a longer-term perspective into the future.

Depending on the structure of the education system, the production of skills within qualifications consumes a shorter or longer amount of time. Typically, about nine years are required for compulsory schooling, plus three to four years for vocational qualifications, plus three to five years for higher education credentials. In total, a maximum of 15–18 years is needed for the completion of a full educational pathway, potentially including some further years during which students make up their minds about which pathways to choose. Where programmes are changed or new ones created, additional years may be needed, depending on administrative procedures. Consequently, individual actors in the education system, especially those involved in initial education, typically take a longer time perspective than employers. In discourses about matching, these different time perspectives are often confused and become very difficult to disentangle.

From these systematic relationships we can infer that *current* matching problems typically cannot be solved by education policies targeted at initial education; on the contrary, initial education policies can only contribute to solving *future* matching problems. Anticipation is therefore a necessary ingredient, particularly in initial education. Initial and continuing education are also differently positioned as regards the time frame of matching: current problems can be resolved by continuing education, but initial education is primarily geared towards meeting future needs. These aspects are often intermingled in policy discourses, and several statements (implicitly) suggest that education policy might contribute to the solution of current problems.

Relationship between anticipation and matching

As regards the relationship between anticipation and matching, we can distinguish three interrelated functions, as noted above: (i) knowledge creation, (ii) information dissemination, and (iii) deliberate anticipation and matching policies. Each of these functions must be adequately fulfilled in any formal framework for the anticipation and matching of the supply of and demand for skills. The creation of knowledge (function 1) by instruments of forecasting and the like is a necessary but not sufficient condition for the effective functioning of matching and anticipation; the knowledge created must also be used by the actors and thus be put into practice in various ways by means of functions 2 and 3.

1. Knowledge creation is closely related to the symbolic structures and includes a variety of ways of, and approaches to, providing knowledge about future trends. These may include quantitative forecasting and projections, surveys, scenario development, and different kinds of assessment by task forces, groups of experts, and so on. There is often a discrepancy between informal discourses and assessments about mismatch, on the one hand, and the formal evidence that can underpin the informal appraisal, on the other. A fundamental ingredient for the development of these procedures, therefore, is an adequate and sufficient database, while a key requirement for the interpretation and understanding of the information produced about future trends is a good knowledge and understanding of the current situation and its past development.
2. The second function is the flow and dissemination of knowledge and information. Even if function 1 is successfully performed, and good and sufficient knowledge is produced, this does not automatically guarantee that the knowledge will reach the various players involved in matching and anticipation practices. Neither does it mean that they receive it *actively* and integrate it into their frames of understanding. Two issues stand out here: first, an important part of knowledge creation is the integration of formal and informal knowledge, which can only work through the flow of both kinds of information among the actors that hold it; second, the flow and dissemination of knowledge and information depends critically on the organisational structures and processes of integration of the systems involved, and their interaction. Following from the reasoning above, in particular the possibilities of bridging the institutional and organisational gaps (between education on the one hand and employment and the labour market on the other) by building appropriate structures and mechanisms is important in this respect.

3. The third function, deliberate matching policies and the explicit use of anticipation procedures in these practices, we refer to here as *anticipation and matching policies*. This is the most complex element in the framework, and concerns in particular the active involvement of education in structures and incentives around the matching process. It is particularly important to understand the actual contribution of education to matching and also the above-mentioned problems concerning different time frames.

This conceptual framework is used in the following chapters of this report as a tool for analysing the country reports. The synthesis report is structured broadly as set out the guidelines (see Annex 2). Chapter 3 gives an overview of the current situations in the eight partner countries, followed by a note on definitions of skills and an examination of how mismatches are perceived and measured to provide a formal basis for evidence. Chapter 4 gives an overview of the available data, sources of information and observed information gaps, while Chapter 5 analyses approaches to matching and methods of anticipating skills demands. Chapter 6 looks in more detail at approaches to developing more deliberate policies for matching and anticipation Chapter 7 contains a summary and conclusions.

3. SITUATION ANALYSIS

3.1 OVERVIEW

This overview is based on a selection of comparative indicators, as shown in Annex 1. The data are taken from the World Bank's *World Development Indicators*, and from the UNESCO database; thanks for compiling them are due to Debora Gatelli and the ETF statistical unit. The analysis includes two big countries (Egypt and Turkey: population 70–80 million), one medium-sized country (Ukraine: 45 million), four small countries (Serbia, Kyrgyzstan, Croatia and Moldova: 3–7 million) and one very small country (Montenegro: 600,000). The population is increasing in Egypt, Turkey and Kyrgyzstan, stable in Croatia and Montenegro, and declining in Ukraine, Serbia and Moldova. Migration is quite strongly outward, with all countries experiencing some amount of net emigration. The report from Montenegro mentions strong immigration, but the indicators do not reflect this. In some countries the population is ageing (e.g. Croatia) and shrinking (e.g. Ukraine, Serbia), while others have a young population (Kyrgyzstan) and a growing labour force (Egypt, Turkey).

Economic development is strongest in Croatia and weakest in Kyrgyzstan and Moldova. Participation in formal employment ranges from 50% to 70% (measured by labour force participation rate) or from 40% to 60% (measured by employment per population indicator). In Egypt and Turkey female labour force participation is less than half that of the other countries (20–30% compared with 45–55%). Unemployment (as defined by the International Labour Organization) is in most countries between 5% and 10%, but in Montenegro and Serbia it is markedly higher (according to the Labour Force Survey for 2010, unemployment is around 20% in these countries), while in Croatia it declined steeply during 2001–08 but has been rising again sharply since 2008 under the impact of the economic crisis. In Turkey unemployment is on the rise. Youth unemployment is correspondingly high in Serbia and Montenegro (around 45% in 2010); it is high also in Egypt and Turkey, while in Croatia it declined until 2008 and then rose again, reaching 33% in 2010. In the remaining countries youth unemployment is between 10% and 20%, about double the overall rate.

The country reports show that the informal economy plays a significant role. Employment rates in the formal economy are not high; in particular, those countries with very low female employment are also at the bottom of the ranking for the total employment rate. High – in some countries very high – youth unemployment is quite common. It is also mentioned that the public sector is too big and that sometimes 'dual structures' prevail (Serbia and Egypt). Most of the reports mention structural change, a decline in agriculture, and to some extent a shift from manufacturing to services and from rural to urban areas as drivers of the economy. The share of vocational education and training (VET) graduates is very low in Kyrgyzstan, Moldova and Ukraine (where the share of higher-education graduates is high). Annex 1 gives a graphic representation of the positioning and development of the individual partner countries.

3.2 CONCEPTS OF SKILLS

All the country reports state that a clear and shared definition of skills does not exist, and they also note that ambiguous meanings of 'skill' are used in national discourses. Only one report (Croatia) refers to the specific definition used in debates about qualifications frameworks, but this report also notes different uses in practice in national debates about mismatch. However, some important observations about the meaning of skills are quite common across the partner countries.

- Different actors emphasise different aspects of skills: the education sector refers mainly to formal qualifications and credentials, whereas actors from the employment side refer to the practical skills that people are able to use. Conflicting perceptions of the current situation may arise from this difference, as the number of credentials is rising in most cases while the actual capabilities or competences of graduates are open to heavy criticism by employers and sometimes even by the students or graduates themselves.
- Unpacking the meaning of the term more specifically, country reports mention that the actors often take 'skills' to refer to the traditional technical capabilities necessary for the execution of medium-level tasks in crafts and industry or in the professions. Some point to a neglect of 'soft skills' in the debates, an issue most frequently raised by employers.
- Education levels or occupational categories are normally used as a proxy for, or representation of, skills. Here many problems may arise through aggregation, since this usage ignores the fact that actors at the individual or micro level each possess their own specific, practical knowledge and understanding resulting from their daily experience, but that experience is distributed among many different areas, sectors and localities with different practices. It is not trivial to point out how this diversity tends to be translated into aggregate appraisals about the existing situation.

3.3 PERCEPTIONS OF MISMATCH

Perception of the situation as regards matching is related to the understanding of the meaning of skills. In most of the partner countries, perceptions of more or less severe mismatches prevail. However, these perceptions are mostly based on informal knowledge or selective indications. Two principal sources of more formal evidence about mismatch are reported: employers' surveys, conducted predominantly by the employment service or employers' associations, and comparison of (parts of) the supply and demand in the external labour market, as measured by the quantitative relationship of unemployed people to job vacancies (based on the available labour market statistics).

Croatia reports the results of in-depth studies, based on surveys among young completers of education, that have tried to measure and analyse mismatch more thoroughly in terms of vertical (education levels) and horizontal (occupational fields) characteristics. The results suggest a large degree of mismatch among young people during the first years of their career. In several other countries surveys about the transition of young people into employment have also been conducted, but the country reports make scant reference to these results. The World Bank's surveys of employers include questions about the extent to which employers see their economic prospects being hampered by an insufficient supply of skills; the Moldova country report, for example, gives comparative figures from the partner countries derived from the EBRD-World Bank's Business Environment and Enterprise Performance Survey (BEEPS) for 2008–09. In most of the partner countries about 5% of the enterprises surveyed identified an 'inadequately educated workforce' as a major constraint and obstacle; in Moldova and Croatia this share is markedly higher (about 15% or more). Another indicator derived from these surveys is the proportion of firms that see an insufficient existing 'labour skill level' as a major constraint and obstacle. This proportion is generally high – around 25–30% in most of the countries and over 40% in Moldova and Ukraine – but lower in Serbia (over 15%) and Montenegro (5–10%).

The perception of mismatch in most other countries is reported in much more general terms in the country reports, as the following summary suggests.

■ The most widespread phenomenon is the perception of a mismatch between formal qualifications and practical skills, or between a quantitative increase in upper school and higher education qualifications and the asserted low quality of these qualifications. This kind of mismatch is mentioned in at least half of the partner countries (e.g. Egypt, Moldova, Serbia and Ukraine). Different perceptions are mentioned on the education side, which emphasises the successful increase in formal qualifications obtained, and the side of the employers as users of the qualifications, who point to the lack of practical (and frequently also social) skills among graduates. Criticism of the 'inertia' of the education system and its lack of attention to demands from the world of work is a common feature of the reports.
■ Mismatch related to overeducation and undereducation is also frequently mentioned in direct or indirect terms. The Croatian report, for instance, focuses strongly on research into this phenomenon and presents concepts and figures from a variety of research sources showing a relatively high incidence of overeducation and, correspondingly, a low incidence of undereducation among young graduates. According to this report, depending on the measure used, in a cohort of VET or higher education graduates, the percentage of individuals whose first job is below their education level (vertical mismatch) is between 20% and 40%, and the percentage of individuals whose first job is in a field other than the field they studied (horizontal mismatch) is 40%. The incidence of vertical undereducation is much lower (2% to 7% depending on the method used). Depending on the measure applied, the pattern varies according to the education level, with a higher mismatch for VET programmes, in some cases, than for completed higher education. From first to current job the proportion of adequately educated people increases very slightly; if the first job is not adequately matched to education, movement out of employment is more frequent.
■ Suspicion about overeducation is prevalent in countries where young people increasingly tend to enter higher education, and in particular in post-Soviet countries such as Kyrgyzstan, where the social demand for higher education tends to be high and the number of graduates is sometimes very large in relation to the capacity of the national economy to absorb them. However, sound evidence is not available, and the signals frequently point in different directions: returns from higher education tend to be high and unemployment is often lower among higher education graduates than among those from other programmes, but some graduates do not find adequate jobs, and employers complain that quality is not good and that other types of skill/qualification are needed more urgently. High returns to higher education are not necessarily inconsistent with the overeducation hypothesis: some graduates might take lower-level jobs which are nevertheless better paid than those of graduates with lower qualifications, thus 'bumping down' workers with lower qualifications and perhaps pushing them into unemployment. Another quite common problem is the public sector's large share of employment and the relatively good conditions it offers its employees; higher education provides the main route into this sector.
■ Another pattern of mismatch can be observed from the quantitative relationship between unemployment and vacancies, mostly by occupation. This kind of calculation is strongly emphasised in the reports from Montenegro and Ukraine. However, this kind of mismatch is associated with continuing rather than initial education. The validity of these measurements depends on the extent to which the registered unemployed and the notified vacancies are representative of the overall labour market.
■ More specific problems of mismatch concern the relationship between higher education and VET (e.g. in Moldova and Turkey); unsuitable specialisations in higher education, business or social studies rather than in technical studies

(e.g. in Kyrgyzstan and Moldova); overemphasis on old or outdated VET profiles (e.g. in Serbia, Turkey, Ukraine); and neglect of 'soft skills' by the education system (e.g. in Egypt and Turkey).

■ In some countries problems of mismatch arise from the economic context in relation to neighbouring countries (lower wages, less demand), leading to substantial outward migration of well-qualified persons (e.g. Kyrgyzstan, Moldova, Serbia).

■ In some countries regional differences in skills supply and demand, and consequently different patterns of mismatch and internal migration from rural to urban areas, are mentioned (e.g., in Montenegro, Croatia and, at least until the recent past, Turkey). Moldova can also be added: since the country is small, daily internal mobility is possible; though the young population tends to leave the villages, especially if they have graduated from any kind of specialised education.

Overall, the appraisal of the skills matching situation by the various actors and stakeholders involved is not accompanied by an emphasis on the production of sound evidence about the situation. In most of the countries the appraisal concerns the current situation rather than the future; these current appraisals are implicitly extended, to a greater or lesser degree, into the near future. Serious initiatives for the anticipation of future demand are indicated in the reports from Egypt, Serbia and Kyrgyzstan; the first two of these have developed formal forecasting systems, while the third has used a combination of survey and projections. Other reports indicate a demand for forecasting and plans to develop and implement such models (Croatia, Moldova, Ukraine).

4. DATA AVAILABILITY AND INFORMATION GAPS

The country report guidelines (Annex 2) asked for detailed information about the existing databases in the field of matching, and their availability for research and practice. An assessment of the strengths and weaknesses of these data and information bases was also given in the country reports.

TABLE 4.1 gives an overview of the available data sources as indicated in the country reports.

TABLE 4.1 OVERVIEW OF REGULAR AND OCCASIONAL DATA AVAILABILITY

	Croatia	Egypt	Kyrgyzstan	Moldova	Montenegro	Serbia	Turkey	Ukraine
Data about education and training								
Administrative education statistics (enrolment, completion)	✓, n, r, y	✓, y	✓, n, s, y	✓, n, r, y	✓, n, r, y	✓, n, r, s, y	✓, n, r, y	✓, n, r, y
Training statistics		• 2000 VET training centres	• VET & labour market	✓, y	✓	✓, n, y	• 2007 VET in enterprise	✓, n, r, y
LFS participation in lifelong learning	✓, n, q						• 2007 adult education survey	
Non-formal education							• 2009	
Survey of initial education				• 2009				
Higher education review (Central Asia)			•					
Data about employment and the labour market								
LFS	✓, n, q	✓, q	✓, y	✓, n, r, q	✓, n, r, q	✓ n (r), hy	✓, n, r, m	✓, n, r, q (y)
Registered unemployment, vacancies	✓, n, r, m			✓, n, r, y, m	✓, n, r, y, m	✓, n, r, m	✓, n, r	✓, n, r, y
Flow from unemployment to employment	✓, n, r, m			✓, n, r, m		• 2008 HRD, support for unemployed people		
Occupational skills mismatch								✓, n, y
Migration statistics, surveys		✓		✓, n, r, q & ad hoc surveys				• 2007, n, r
Population statistics, census	✓	✓		✓, n, r, 10y				✓, n, r, •
Enterprise and employers surveys	✓		• private sector needs profess		✓, y	✓, n, r, s, m, 2y • 2009, r 2011, r, skills		✓, n, y

	Croatia	Egypt	Kyrgyzstan	Moldova	Montenegro	Serbia	Turkey	Ukraine
Business tendency expectations								✓, n, r, q
Manufacturing data								✓, n, r, s, y
Child labour				• 2008				
Data about the transition from education/training to employment								
LFS	✓, n, q	✓, y		• 2009 tr. module		• 2009 tr. module	• 2009 tr. module	
First job after VET school, mobility		• 2008–09 graduates	• 2006 school-to-work	• 2008 youth		• 2007 school-to-work		✓, n, y
Longitudinal (panel) surveys	• 2008 youth	• 1998–2006						• 2003–04–06, n, r, s
Data about the utilisation of education/training (e.g. income, assessment by individuals and enterprises)								
Earnings and education	✓, n, y (m)		✓, r, •	✓, n, s, y, m			✓, n, s, m	
Household budget				✓, n, r, q				
LFS				✓, n, r, q				
Labour demand, skills gap				• 2010		• 2008, s		• 2007–10, n, s

Note: LFS = Labour Force Survey; [= regularly periodic; n = national, r = regional; s = sectoral; y = yearly; hy = twice a year; 2y = biennial; q = quarterly; m = monthly; • = occasional (+ year/s conducted)
Source: Country reports

This overview shows that administrative education statistics and labour force surveys are common, regular statistical sources. Selective surveys on school-to-work transition and/or the first job after initial education in the period 2007–09 are also quite common among the partner countries, as are training statistics at least on a selective basis. Regular information about education-related earnings and information from employers' surveys is available in about half of the partner countries.

Ukraine, Croatia and Moldova are well covered by (regular) data sources, and in Kyrgyzstan and Turkey a relatively low coverage of regular data sources is compensated to some extent by selective ones.

5. APPROACHES AND METHODS REGARDING MATCHING AND ANTICIPATING SKILLS DEMANDS

In this chapter the practices and frameworks for matching and anticipation are described and analysed. *Matching* means attempting to bring supply and demand better in line to each other; *anticipation* brings explicit elements of reasoning about the future into these attempts. The distinction is partly artificial, because matching and anticipation are combined in one way or another in several activities. However, it is useful to draw this distinction along the timeline of a matching and anticipation process, first in order to look more specifically at the time perspective involved in the activities carried out, and, second, to see both that attempts towards matching do not necessarily involve explicit anticipation and that, on the contrary, anticipation does not necessarily need to be combined with attempts at matching (in the latter case only the knowledge production function is activated). It may also be fruitful to distinguish between *approaches* and *methods*, the former denoting more complex methods involving some degree of institutionalisation, and the latter referring to simpler tools and instruments.

The next section looks at matching and anticipation together and tries to identify the actors and more complex frameworks involved in each process.

5.1 ACTORS AND SUBSYSTEMS INVOLVED IN MATCHING AND ANTICIPATION

The country reports describe different patterns of stakeholder involvement in the practices of matching between the supply from the education system and the demands of employers. We can group them into three types.

1. In Croatia, Moldova and Montenegro, the main responsibilities are distributed among the public employment service (PES) and the ministries of education and labour, the latter being linked to the PES.
2. In Ukraine, Kyrgyzstan and Serbia, the same three actors have key responsibilities, but other actors are also closely involved. In Ukraine the Ministry of the Economy is a fourth key actor. It orders study places from education providers on behalf of the state (the process is known as 'state ordering'). In Kyrgyzstan the Ministry of Labour and the Ministry of Education are linked to a wider set of actors including the state agency for VET, the youth labour exchange, the local and regional administrations, VET and higher education providers and, beyond those, to a range of societal organisations including the Forum of Educational Initiatives, the private sector, and representatives of civil society, international organisations and development agencies. In Serbia the Ministry of Education and the PES are linked to the regional governments, regional and local development agencies or councils, and business chambers.
3. In the two remaining Mediterranean countries, Egypt and Turkey, different sets of actors outside education are mentioned. In Egypt a set of intermediate actors around the Ministry of Labour is also linked to the state statistical agency – Central Agency for Public Mobilization and Statistics (CAPMAS) – which provides several kinds of data and information. Egypt is an exception, for its PES is criticised for not playing a successful role in organising the labour exchange and the Ministry of Education is perceived as being outside of the matching practices. Rather different kinds of intermediate structure and project have been built up, partly in partnership with supporting countries, to develop new relationships between education and employment: an example is an apprenticeship scheme emerging from a project with Germany that developed a kind of 'dual system'. In particular, the Egyptian Education, Training and Employment Observatory includes several stakeholders and is working on several studies and projects that are trying to develop new procedures of matching related to anticipation, including elaborate forecasting models. The observatory is an important instrument for improving the knowledge and information base. However, as a result of the political revolution it is questionable whether these initiatives will be continued. In Turkey the PES is characterised as a player struggling with its role in the matching practices. Here corporatist structures, in cooperation with provincial governments and the Ministry of Education, play the main roles in matching, and a big state-related corporation and several private education providers are also active in these relationships.

Trying to make a synthesis of these stakeholder structures in the partner countries, we can see that, with two exceptions, the PES play a key role in matching practices from the employment side. The PES registers of unemployed people and of vacancies on the external labour market are an important source of information, and the PES are related to the ministries of labour. On the education side of matching are the ministries of education with their close relationships

to public providers. This side is generally strongly regulated, and changes in education structures and provisions are difficult to make. Private providers play some role in making the supply of skills more flexible; however, they are, with some exceptions, not considered a strong alternative; in particular they often suffer from quality problems.

At this organisational level, there seems to be a gap in matching practices between the players on the education side (administration and providers) and the employment side (PES, labour ministries, the enterprise sector), occurring in different forms and to different degrees. The PES have some structural weaknesses related to education, as well as to the private enterprise sector, since their primary sphere of action is the transactions between unemployed people and the available reported vacancies, and their primary responsibility is to provide matches at the individual level between unemployed people and vacancies. At a more aggregate, institutional level, it is clear that the PES cover a specific aspect of matching processes, namely transactions on the external labour market with the incidence of (more or less severe) registered unemployment; they do not, however, address major parts of the individual matching processes (internal labour markets, direct transactions without unemployment at the external labour market, informal transactions).

Unemployment is a 'problem area' for a society, and the enterprise sector experiences many real and potential structural and political tensions. In some cases, for instance in Egypt, these tensions seem very pronounced, and this limits the potential role of the PES in the aggregate matching processes indicated in the conceptual framework above. Since unemployment is in large part a social problem, particularly where longer-term unemployment is involved, the PES never have just a technical role as a labour exchange, but always a more or less strongly pronounced social role as well, reflected by the fact that they are sometimes related to the ministries of social affairs. This is well illustrated by the report from Montenegro, where, because unemployment is largely politically defined in terms of the respective regulations, the PES are also involved in political processes.

Employers, on the other hand, are structurally interested mainly in the technical functions, and their interests, therefore, might come into more or less pronounced tension with the actual practices and position of the PES over the social and political aspects of unemployment. In relation to the education side, the PES also cover only a part of the overall practices and transactions; they are mostly concerned with the adult labour force that has become unemployed, having left education at some point in the past. In the youth labour market, too, where the PES process young people experiencing education-to-work transition or employment problems, the PES do not have a direct relationship with the mainstream of educational activities for young people, and are not authorised to have any influence on the mainstream of initial education. It should be noted here that labour market training by the PES as a main instrument of labour market policies is for the most part strictly separated from initial education, and often there are also more or less marked gaps between this and other forms of continuing training.

From the above, we can discern the potential structural tensions inherent in the aggregate conditions for matching at this level. Although they are designed to play a key role in bridging the gap between the supply of and demand for skills, the PES are structurally limited in their potential to contribute to the improvement of matching between initial education and employment. At the same time they play a key de facto role in the relevant organisational relationships in operational and informational terms. Through their relationships with ministries of labour, in practice they also influence the relationships between these ministries and ministries of education. If we ask how the structural pitfalls outlined above might be overcome, answers may be found at three levels: strengthening matching at the individual (micro) level; and strengthening matching at the aggregate (meso and macro) levels.

Strengthening matching at the individual or micro level

Strengthening matching at the individual or *micro level* would mean radically opening up the market mechanism and including education in the process. Here both political and technical questions arise: how to retain and organise the public functions of education, and how the market can deal with the longer time frames education requires. As long as educational pathways involve long programmes and last for several years it is not clear how the market could provide sufficient information to enable players to take the right decisions. This solution would entail radically shortening the time frames for decision making by changing educational pathways to short successive modules, and thus making it possible to reverse decisions. The implications of this change must be analysed in terms of the logic of educational processes, and changes cannot be decided on the basis of economic or governance considerations alone. Mark Blaug showed a long time ago in his work on the economics of education that we are dealing with the interplay of two markets, the education market and the labour market, which are difficult to coordinate simultaneously. In addition, there are some asymmetric relationships between the supply and demand sides in both markets, as individual students (and parents) contract with educational organisations, and individual employees (and job seekers) contract with firms, since the latter have more room for discretion, except where the choices on the organisational side are severely restricted by empirically realised market relations (such as an extreme shortage of applicants).

Strengthening matching at the meso level

Strengthening matching at the *meso level* would mean focusing on educational organisations on the one hand and firms on the other, and providing room for these actors to improve matching. One potential solution at this level is

apprenticeship, that is, the provision of education through enterprises and/or employing organisations. This works well in those systems which have developed appropriate frameworks (Germany is the paradigm case); in particular the report from Egypt mentions this solution as an important reform approach in that country.

Another potential solution is to give space to private education providers, which mostly have more room for discretion than public ones, but which are also restricted by different kinds of regulation (e.g. accreditation procedures). The efficacy of this solution depends largely on the financing mechanisms: the privatisation of education, for instance, creates a great deal of room for opportunism and for aggravating inequalities. The country reports show that private providers have been established to some extent in most countries, but with several kinds of problem: whereas on the side of the state education system tight restrictions on accreditation are reported, on the side of private providers problems of quality are quite frequent and there is sometimes a tendency to sell credentials. Clear positive examples of privatised education are specific institutions with a specific purpose and appropriate conditions, sometimes accredited by foreign universities.

A third solution is to give public education providers more room for discretion by devolution and decentralisation. This is a very prominent proposal in the current discussions about educational governance. It is becoming increasingly clear that the efficacy of this solution depends on two or three main factors, including the empowerment of the providers, appropriate framework regulations in which they can move and, of course, the availability of sufficient competences among the actors. One comment states that the lack of human capital may sometimes be a barrier to this solution and could even endanger it. The privatisation and autonomy of public providers can in principle be envisaged as operating in a radical market environment, but with similar pitfalls at the meso level to those at the micro level, as noted above. In principle this policy also increases the power of the institutions and firms involved and thus deepens the asymmetry of the relationship.

With respect to improving matching at this level, a key question concerns the appropriateness of the regulatory framework to the improvement of matching. Here, the current policies around national qualifications frameworks come into play. Qualifications frameworks are widely expected to fulfil the matching function by directing the attention of all players to the learning outcomes that are provided in education and needed in employment. As regards the conceptual framework, the qualifications framework is situated mainly at the level of creating symbolic structures. Some of the countries report that activities leading to qualifications frameworks are being developed, but these processes are just beginning, and therefore the more concrete approaches with respect to matching are not visible so far.

Strengthening matching at the macro level

Strengthening matching at the *macro level* would mean finding structures to improve the relationships between the different kinds of actor. Two kinds of interface seem particularly important: first, that between the subsystems of education and employment, represented by the respective ministries, and, second, between the enterprises and the institutional actors in administration and policy making. Direct cooperation between (national) ministries has always been deemed important, but has also been problematic. In the past this meant cooperation between bureaucracies. With increasing complexity, emphasis is laid increasingly on cooperation, but, with the introduction of the concepts of multi-level governance and new public management, cooperation under this regime allows for several relationships between players at different levels. At the same time the relationships between the different levels within systems can no longer be managed by simple direction; rather more complex relationships requiring the right incentives, contractual management and the like are emerging. In the country reports we can find examples of different approaches to improving cooperation between education and employment[4].

An example that demonstrates some of the complexities involved is Ukraine, where the Ministry of Economy plays a role in institutional matching by 'ordering' student places from the education system. The description of how this formal procedure of demand-led 'state ordering' works in practice shows how the processes behind it might, paradoxically, lead to a supply-driven procedure. Examples from other countries show, in different versions, how cooperation in the multi-level structures can be supported by the creation of sets of intermediate actors brought together in different kinds of networks such as task forces or councils. For example, in Egypt, an observatory has been set up that includes a broad range of actors from different levels and provides evidence and forecasting, the results of which are disseminated among these actors. In Croatia, regional and sectoral projects have been established which also bring the key actors together to make sense of the information available and to work out strategies for further development. In other countries (e.g. Moldova and Kyrgyzstan) similar networks are part of national development strategies and should include lines of action related to improvement of matching in strategic planning. These examples do not indicate, however, how the enterprise sector, and in particular individual firms and employers' organisations, might be involved in structures of this kind. So far, employers' involvement consists of regular periodic surveys of their perceptions of the situation concerning matching, and the practical involvement of big firms or sectors (e.g. in Turkey and Moldova). These

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4   The European 'open method of coordination' is an example of bringing about cooperation in a multi-level structure towards certain commonly agreed goals and objectives. This method, which combines the setting of agreed goals with monitoring of progress and specific learning mechanisms, might also be feasible in these complex structures.

approaches give room for bridging the different subsystems as well as the micro, meso and macro levels of aggregation.

It is clear from the conceptual framework outlined at the start of this report that the improvement of matching is not easy to achieve and that no 'one-size-fits-all', systemic solution can be expected. The task is rather to understand properly how the current practices work and to find ways of improving them, taking into account the basic components interacting in the process at various levels and the symbolic and organisational structures at the aggregate levels. This analysis of the various elements of the system and how they interact is a key task. Divergent views and conflicting interests must be taken into account and should not preclude the search to understand accurately how the system works and why the actors in it act as they do. The perceptions about mismatch reported by certain actors should not be taken at face value but should be analysed more deeply in order to determine the circumstances and reasons behind them: for instance, are the reported mismatches genuine, or are they the result of propaganda by some actors reaching the pursuit of particular goals? What is the structure of incentives and/or sanctions?

In the relationship between matching and anticipation, matching can be seen as the principal dimension, the problem which has to be solved by any means. Anticipation is a specific aspect of ongoing matching processes; it is implicitly included in the practices of the various actors, and can be made more explicit by knowledge creation, by information and dissemination of the knowledge, and by being integrated into the matching processes and policies.

5.2 MATCHING PRACTICES AND POLICIES

The conceptual framework above (Chapter 2) emphasises that measurement of the specific dimensions of matching and the symbolic structures related to this measurement are important elements of matching practices, as is the investigation of how the aggregate structures and procedures are related to practices at the individual or micro level.

5.2.1 MEASUREMENT AND SYMBOLIC STRUCTURES

In Chapter 4 we presented an overview of the available data sources for measurement of the state of skills matching. The fact that data are available, however, does not imply that the sources are all actually used. Moreover, measurement requires not only data but also certain concepts of measurement appropriate to the matching situation. From the broader literature, and the current ETF report on this topic (Johansen and Gatelli, 2012), it is clear that several such concepts can be used, covering different aspects of mismatch. There is no single overall criterion: certain aspects are often suggested as giving an account of the overall situation (e.g. measurements of 'overeducation', or the 'Beveridge Curve'), whereas other observers criticise the use and value of these indicators. One criticism is that the Beveridge Curve does not consider the wage dynamic in the labour market, and may thus produce misleading conclusions; another is that the information about vacancies is often less valid than the information about the unemployed.

In this section we are not referring to these kinds of indicator from the literature, but infer our assessment of the use of data and concepts of measurement from descriptions of the situations of matching or mismatch in the country reports. Thus we are not looking at any ideal method of measurement but at those actually used in the partner countries, which give very different pictures from country to country. Most of these pictures are based not on rigorous measurement but on interpretations of possibly incomplete accounts. They also give some account of the symbolic structures prevalent in the system in each case. No two countries use similar measurements and concepts; each takes a specific approach. We summarise these below and identify some common features in Section 5.2.2.

Croatia

The report uses a research-based measurement and concept of mismatch that distinguishes between vertical (level) and horizontal (field) dimensions. It is drawn from a survey at a certain point in time that could be replicated in principle, and uses additional information from the Labour Force Survey, which could be replicated regularly. This measurement gives a comparative account of the situation of graduates from educational programmes at different levels of VET and tertiary education during their first few years after graduation. The results show a high degree of vertical and horizontal mismatch, and a higher incidence of overeducation than undereducation. However, a closer examination of the patterns of results raises more questions than it answers, and it is difficult to draw many practical conclusions from these results. This does not mean that these kinds of hard measurement should not be used, but rather that in general the road from first attempts at rigorous measurement to practical conclusions is long and includes several cycles of measurement and the use of different approaches. The Croatian report makes clear that, in addition to the research-based approach used there, many other, more holistic approaches are under way, including formal monitoring and task forces of practitioners, which use a broad array of information to reach conclusions about sectoral matching situations. This will be further elaborated below.

Ukraine

This report also uses a broad concept of mismatch, distinguishing seven categories based on the current literature, which cover different qualitative and quantitative aspects: skills shortages among employees; skills gaps resulting from modernisation in firms; crowding out of graduates with lower levels of qualification by those with higher levels; 'credentialism' (overreliance on credentials or formal qualifications) by employers, resulting in overeducation; skills obsolescence, with older people not taking up opportunities for upgrading; regional mismatches due to mobility restrictions; formal (legal) mismatches based on different classifications of education and occupation. However, (rigorous) measurement is not always easy in these categories. Some empirical indications are given for some of them, suggesting that they are only partly integrated into matching practices. At the policy level, measurement of skills shortages (based on enterprise surveys), on the one hand, and credentialism and crowding out, on the other, seem to have gained some attention. The relation of registered unemployment to vacancies is also used as a measure.

Moldova

This report strongly emphasises the quality aspects of mismatch, which might also be subsumed under skills shortages: individuals often hold formal qualifications but have poor-quality skills. Measurement is based on enterprise surveys. Three aspects of mismatch are distinguished: poor quality in VET and higher education resulting from insufficiently high demands in education from students and formal graduates; mismatch in the relationship between VET and higher education, with too strong preferences for higher education; mismatch concerning fields of study in higher education (too much social science, business and law studies, too little mathematics, informatics, science and technology). These perceptions contradict the empirical evidence somewhat, as the returns from higher education seem higher than those from VET, and the matching issues are complicated by the fact that many graduates are exported to neighbouring countries, where they can earn more; the quality issues could possibly result from selection problems. At the policy level – somewhat contrasting with the assessment of problems in practice – the relationship between VET and higher education is emphasised most, and the quality issue least.

Kyrgyzstan

Quality problems, the relationship between higher education and VET, and the high proportion of migration to neighbouring countries are also key issues in this report. Some contradictory indications are presented: employers express high expectations of their graduates but asses their quality as very low, and consequently pay very much lower wages than can be earned in neighbouring countries; many graduates migrate, and seem to be regarded as having sufficient quality in their new environments to earn much higher wages. Some real indications of severe quality problems are reported in at least parts of higher education, including 'buying exam results'. At the same time the report's author estimates that the inflow to higher education is so high that reasonable prospects of employment in Kyrgyzstan itself would be available for only about half of the graduates from higher education. Regional imbalances in the country are also mentioned. Overall the report questions the direction of higher education policies as a main issue of matching policy.

Montenegro

This report measures mismatch differently, focusing on 'structural unemployment' based on the comparison of unemployed persons (supply) and vacancies (demand) by occupation. This ratio can be measured by data from the labour market register, leading to an indication of the occupations which are oversupplied in comparison to those which are in demand. The measurement takes view of the current external labour market, which is only weakly related to the current education system, since the whole population is included in the information base. Measurement is closely focused on the current, short-term position, which may turn out to be ephemeral. As a consequence of these mismatches in occupation, programmes of continuing education are provided by labour market policy.

Egypt

The country report does not give a specific account of mismatch. It concentrates rather on a more general notion of mismatch, comparing different priorities and strategies in education to the private enterprise sector in employment. The education sector is driven by a concern for quantity and the delivery of its programmes, whereas the enterprise sector is concerned with productivity and criticises the quality of the workforce in terms of insufficient technical skills and a lack of soft skills. Building a structure that embraces various stakeholders around the Ministry of Manpower and Migration and can provide measurement and knowledge creation has been a big priority among the activities undertaken to improve matching. One of the most important projects is the attempt to build up an apprenticeship system similar to the German model, which would involve the enterprise sector much more actively in the provision of VET.

Turkey

The country report also adopts a broad understanding of matching and mismatch. The author sees matching problems as being embedded in broader questions of the necessary extension of compulsory education and the growth of higher education. The development of the workforce is described as dependent on internal migration from rural to urban regions, on the big differences in employment between men and women (both aspects being related to education levels), and on the amount of informal learning. Current practice as regards matching in Turkey is still focused on an understanding of technical occupational skills in manufacturing. The challenges for education should be located in the development of the knowledge-based society and the service economy and the new demands this entails as compared to those of the industrial and manufacturing society and economy. Learning to learn and soft skills would be key requirements in this development, and building training centres for providing these kinds of skill via labour market policy would be a high priority.

5.2.2 FRAMEWORKS OF MATCHING

In this section we analyse the institutional and organisational frameworks of matching that are in place or have been recently developed in the partner countries. Frameworks of matching are methodologies focused on improving the current and short-term situations. They do not explicitly include the anticipation of future developments as regards skills needs. These frameworks provide the environment into which deliberate anticipation procedures might be infused, and which these procedures have to take into account in order to work properly. The frameworks can be seen as ongoing practice that not only affects decision making and action but also influences processes of conceptualising, observing and appraising the state of skills matching.

Several such frameworks can be identified in the country reports. Here are some examples:

■ *Complex political and administrative systems of determining the supply of education*. The Ukrainian approach of 'state ordering in education' is based on legal regulation and relates the process of determining study places in the education sector to external demand-related enquiries by the Ministry of the Economy, which is formally responsible for the ordering of study places. The allocation of study places financed by the state budget is made in complex consultation between providers, the Ministry of Education and the Ministry of Social Policy. In reality, both here and in Moldova, the ordering seems strongly based on existing study places. In Kyrgyzstan a partly similar 'listing' procedure allocating budgetary places in higher education is in place; however, the process is carried out by the Ministry of Education, based on a survey in other ministries and public bodies, and this procedure is deemed 'rather a formality'.

■ *Councils, observatories or networks of actors at different levels*. In Serbia, three national councils for different sectors of education (compulsory education, higher education, and VET and adult education) have been newly established as multi-stakeholder advisory bodies. The tasks of the VET and adult education council include monitoring and analysis; proposing educational profiles; developing a national qualifications framework; addressing standards and curricula; and securing better links between education, employment and economic development. In addition there are several local councils that incorporate all relevant local stakeholders (local authorities, business, providers, the employment service), and which should develop local strategies. In Egypt the Education, Training and Employment Observatory has been established as a platform where the various stakeholders can meet in order to develop and evaluate information. Forecasting has also been strongly supported in this observatory, as we shall see later. The Egyptian report also mentions the PROSPECT methodology, which provides a thematic and organisational structure for monitoring emerging needs in employment. In Montenegro the National Employment Strategy has proposed the creation of networks linking education providers with stakeholders from the economy and local policy making, similar to the local councils. In Croatia an elaborate approach involving sectoral councils has been successfully implemented in some areas, and other countries, such as Moldova and Kyrgyzstan, are planning to set up bodies of this kind at the regional or national level.

■ *Partnerships between schools and external players from the economy*. Ukraine has set up 'tripartite contracts' between VET schools, regional administrations and enterprises negotiating enrolment policies at the schools. In Egypt the creation of enterprise TVET partnerships (ETPs) aims to develop joint action between public schools and enterprises, based on the assessment of demand and embedded in a governance system of ETP committees.

■ *Requirement for VET schools to monitor the transition of their graduates and the demand on the labour market*. In Ukraine, the VET schools are responsible for this monitoring, and they do this in a variety of ways, such as using information from the PES, setting up their own monitoring mechanisms or asking their graduates to provide employment certificates.

■ *Directly involving enterprises in education*. In Egypt, an apprenticeship programme based on the German model has been established as a reform project. It is embedded in a multi-level governance system that includes regional units and a national centre for coordination and strategic development.

■ *Establishing training programmes in active labour market policy*. This is a very common method which has the potential to improve matching primarily by providing unemployed persons with skills or qualifications that are needed

in the labour market. For example, Montenegro provides training courses which focus particularly on disadvantaged groups and are organised systematically in a number of fields by the employment service and VET centres.

■ *Networks of VET centres complementing the formal education system and related to the institutions of the employment side*. In Montenegro, a network of this type is related to the Ministry of Labour. In Ukraine, sector-based teaching centres are related to sectoral ministries or (large) enterprises, and PES training centres also exist. In a large programme in Turkey, the Ministry of Labour and an employers' organisation are establishing VET centres jointly, aiming to upgrade the skills of a million unemployed persons in five years in selected regions.

■ *Standard-setting for VET, related to demands from employment*. Standards are objective structures for the design of qualifications or education programmes. Their role in matching depends on how and by whom they are designed. In Ukraine, for example, they are developed centrally by the Ministry of Education (20% of curricula can be locally adjusted), and include, among other things, minimum numbers for classes and compulsory internships fully paid by enterprises. These are widely perceived, however, as rigidities that hamper matching instead of improving it. In Egypt, national skills standards are developed under the implementation and evaluation by the economic sectors.

■ *Giving room for intervention by employers in various aspects*. The Ukrainian report mentions a large set of approaches showing how employers can influence education in ways other than providing training, or as an alternative to poaching employees from other firms. They can and do establish their own training centres, commission training from other providers, make training requests to the PES, establish links with VET schools, influence teachers' qualification by company internships, and make requests for new education programmes or adjustments of existing qualifications. Requests for the upgrading of education programmes are regulated by a specific procedure involving two or three ministries – a process that seems rather complex and time-consuming. In other examples, a company can initiate programme revisions, based on a mutual agreement with the Ministry of Education.

■ *Broader policy strategies for initiating changes in enrolment and educational choices by means of financial and regulatory measures*. An example here is Moldova, which tried to reorient student flows from higher education to VET by increasing the financing of VET and setting limits on enrolment in higher education. In addition, state-funded places in areas of high demand were increased. In Ukraine, a mixture of publicly and privately financed study places and institutions is setting (dis)incentives; students who cannot get state funding might fund their studies by private means.

■ *Career orientation measures for young people and training teachers for that purpose*. These measures have been developed, for instance, in Kyrgyzstan and Croatia. In Montenegro several programmes are trying to set up and improve these activities, and they could contribute to matching and to helping young people take better choices.

There is a broad array of measures that seek to improve matching processes at an institutional or policy level. Measures and frameworks are situated at different points in the overall system (schools or training centres, enterprises, the local area, the region, national regulations) and are differently combined in national systems. Some countries focus on specific areas or types of measure (Egypt, Montenegro, Serbia), while others use a broader mix of frameworks and measures (Ukraine). A generalised assessment is difficult. Some of the frameworks are criticised, mostly those that focus to a great extent on the education side. Others are considered good practice but have remained small-scale in their implementation, despite their good rating. Employing many measures does not necessarily mean that the matching situation is considered very much better.

5.3 ANTICIPATION PRACTICES AND POLICIES

In this section we look at how anticipation is involved in matching. In the guidelines we have made a distinction between more implicit forms of anticipation and more explicit and deliberate forms (see Annex 2).

5.3.1 FORMS OF ANTICIPATION IMPLICIT IN THE PROVISION OF EDUCATION

The country reports examine the relationship between employment and education mainly from the employment side; some from the perspective of labour economics, others from the perspective of business development or labour market policy. However, the perspective of education or training policy is almost unrepresented. This imbalance might reinforce the perception of a deep gulf between the two worlds and a strong feeling of inertia and reluctance to respond to matching problems on the education side. This underlying perception holds more or less true for all the country reports.

Education is seen as a complex, strongly institutionalised and legally regulated system that follows its own logic, supported to some degree by the (young) people who are choosing their education pathways. Except for Turkey, where the report argues in favour of an overall expansion of education from the compulsory level to the tertiary level, in particular for women, all the reports emphasise signs of overeducation and see dangers in a strong tendency towards expanding higher education and, within higher education, the expansion of disciplines which seem less in demand by the economy. This appraisal is particularly strong in some countries, for example in Kyrgyzstan, where the comment is made that the number of higher education graduates could exceed the potential domestic employment demand by up to 50%. Related to this sceptical view of the size of the higher education sector is a clear view that there are quality

problems, in particular in higher education, and in some countries in other parts of the education system too. At all levels, the education systems seem to put quantity above quality and to strive for more and more study places despite a lack of resources. Moreover, many examples in the reports reflect strong, rigid regulatory structures that are likely to inhibit change even where changes have been agreed to some extent by the stakeholders, or where they are envisaged. Paradoxically, existing regulations intended to improve quality or efficiency may sometimes in fact bring about such rigidities; examples are the accreditation procedures and established standards in Moldova and Ukraine.

The problem of matching is seen mostly in terms of the idea that education has to change its direction in order to adapt to the needs of economic development. However, the existing conditions are such as to offer only relatively weak sources of support for this change at present. The returns to higher education are better than those of lower-level education programmes. As one country report states quite bluntly, employers have very high expectations about the ideal graduates they need and are very critical of the graduates currently available in reality; consequently they pay only very low wages. As a result, graduates are migrating to neighbouring countries where their quality is good enough to earn them much higher wages than they could hope for in their home country. Higher education, then, is producing for the export market. On the other hand, estimations of the nature of the demand for skills which are brought into the matching processes are mostly quite weak, and seem too inconclusive to be accepted in negotiations and interactions with the education sector. Analysis of the available information has shown that the demand is mostly short-term and is often too general to be able to override those interests in the education system that are striving to maintain, or even expand upon, the present position. This can be seen in the procedures of 'state ordering' of study places based on estimations of demand. Even the more rigorous measurements of mismatch, as demonstrated by the Croatian report, do not provide sufficiently conclusive results about mismatch to enable clear, unambiguous decisions about education to be made.

On the question of how implicit anticipation might be involved in decisions on the education side, the material in the country reports offers little indication. This issue would have required more in-depth study than was possible within the scope of this project[5]. Two indications are given in some of the reports: first, that the institutions of higher education are too heavily regulated to be able to respond freely to perceived demands, and that private institutions are frequently under the same regulatory constraints as public ones as regards accreditation and also lack the resources for high-quality teaching; second, that VET institutions are, at least in some cases, better aware of the needs they confront than other sectors of education, but that they also have to cope with regulations and often lack sufficient infrastructure and resources.

Processes of implicit anticipation would require flows of informal knowledge among the players on both sides of the divide between education and employment. Such knowledge can only exist if there are more or less intense contacts between the players. Some of the anticipation frameworks described above, which aim to bring educational institutions into closer contact with employers, establish such contacts to some extent. However, the relationships seem to function largely in integrated vertical structures where the contact is restricted to the top levels. Where there are established practices of this kind we should not expect things to change very quickly, even if more direct relationships at lower levels are created.

5.3.2 EXPLICIT AND DELIBERATE ANTICIPATION

TABLE 5.1 summarises the methodological activities reported that might contribute to deliberate anticipation of skills demand in the partner countries. Many kinds of activity are reported, and they have been grouped in advance in five categories. Two of these are widely used: formal forecasts, projections, enquiries or analyses of registers, and different kinds of enterprise survey. Most of the activities are short-term.

In the first category, forecasting and projection methodologies are used in only three countries so far (forecasting: Egypt and Serbia; projection: Kyrgyzstan), and even there these activities are not firmly established, for different reasons. Formally established methodologies that gather yearly appraisals of the short-term demand for professionals, mostly from public institutions and enterprises (Egypt, Kyrgyzstan and Ukraine), are mostly characterised as rather formal exercises with little substantial impact. Some countries (Montenegro and Ukraine) use data from the registers of unemployment and vacancies to give a regular short-term outlook on the supply and demand relationship as regards occupations or qualifications. Finally, supply-oriented anticipation by education providers gives estimations or projections of their study places, for example in Egypt, Moldova and Ukraine. In these countries, even if enquiries about demand are made, in reality the capacities of the education providers tend to be a principal factor determining the public financing of study places.

The second category of methodologies is *surveys among employers and enterprises*. These are widely used and are apparently on the rise: they are either already established or planned, on an annual basis, in Kyrgyzstan, Moldova,

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5 The Austrian system was analysed in this way some years ago, with the result that, although no formal anticipation was in place, the education side did carry out several (implicit) mechanisms and activities of anticipation (Lassnigg, 2006; 2008; 2011; Lassnigg and Markowitsch, 2005; Steiner and Lassnigg, 2007).

Montenegro, Serbia and Ukraine. In Egypt several kinds of survey have been conducted and seem to be used frequently in public debates about the quality of education.

The remaining three categories cover a variety of *regional or sectoral studies*, *surveys among employees* and more specific *task forces or projects*. Employee surveys concern the transition from education to work, and are in fact retrospective activities; thus they give only indirect information about future developments. The assessment of skills utilisation among the labour force as experienced by the workers themselves seems not to be an issue, the employers' view being regarded as sufficient. Sectoral or regional studies are used in Egypt, Moldova, Serbia and Ukraine, and those countries also use specific informal projects or task forces for anticipation.

TABLE 5.1 EXPLICIT AND DELIBERATE ANTICIPATION PRACTICES AND MODELS

	Croatia	Egypt	Kyrgyzstan	Moldova	Montenegro	Serbia	Turkey	Ukraine
Formal forecasts, projections, enquiries and analysis of registers								
MID-TERM								
Forecasting model, economy, occupations, labour market		✓				✓		
Survey 2009 & projections 2011–14			✓					
Analysis of outflows from unemployment	✓							
Sectoral needs assessment	✓							
SHORT-TERM								
Analysis of register data on vacancies, unemployment					✓			✓
Yearly listing of professions needed by public institutions		✓	✓					
'State ordering' in education								✓
Orders by employer and employment service for VET places								✓
Educational establishments plan								✓
Projections by educational institutions				✓				
Higher education supply projections		✓						
Enterprise surveys								
ANNUAL (ACTUAL OR PLANNED)								
Survey by employment service (12-month prospect), annual (current or planned)	✓			✓	✓	✓		✓
Annual survey by employers' organisation	✓					✓		
Enterprise survey 2009 (interviews), planned to be regular (109 enterprises)			✓					
ONE SHOT								
Survey by ministry and local administration			✓					

	Croatia	Egypt	Kyrgyzstan	Moldova	Montenegro	Serbia	Turkey	Ukraine
Mid-term demand, public and private				✓				
Demand survey 2001		✓						
Job opportunity survey 2006		✓						
Multi-stakeholder study			✓					
World Bank's employers/enterprise survey				✓				✓
Business surveys								✓
Project-related curriculum studies		✓						
Employee surveys								
School-to-work transition survey				✓		✓	✓	✓
LFS school-to-work ad hoc module				✓		✓		
Tracer study 2008, 2009 & 2010		✓						
Survey of mismatch	✓							
Informal procedures (task forces, projects, etc.)*								
Working groups of employers and government agencies								✓
Adjustment of education								✓
Adjustment of requirements								✓
Sectoral meetings in construction, agriculture				✓				
Enterprise training partnerships		✓						
Sectoral or regional studies, projects*								
SECTORAL								
Communication sector 2009								✓
Survey ICT, education, apparel, film and production						✓		✓
Spinning, weaving, ready-made; telecoms, ICT		✓						
Survey of coal-mining regions								✓
REGIONAL								
Survey of rural areas 2005				✓				
Survey 2011 (Cairo region); regional surveys (2009 Belgrade, Nis, Novi Sad; 2011 South)		✓				✓		

* This information is indicative and probably incomplete, in the absence of an overview.
Source: Country reports

The distribution of methodologies across countries reveals that two of the bigger countries, Egypt and Ukraine, use a broad range of methodologies across the five categories, including regional activities and informal practices. Turkey is an exception among the bigger countries; here, according to the country report, strategies for more systematic policies on skills are not yet well established and the institutional frameworks are also different, with private players and social partners wielding more influence than elsewhere. The very big recent initiative for skills development centres in certain regions seems to rest on informal knowledge and political will rather than on systematic enquiry. Among the smaller countries, Serbia and Moldova have used a broad mix of methodologies, the former only since very recently and the latter for some time. Croatia and Kyrgyzstan are focusing on a combination of enterprise surveys, projections and formal enquiries. Croatia has developed elaborate specific methodologies at the sectoral level, while Montenegro has used a range of labour market information and policies to date and is also building broader strategies.

As regards the functions of anticipation and matching outlined in the conceptual framework (Chapter 2) – knowledge creation, information dissemination and deliberate matching policies – the activities reported mainly take the forms of gathering, and to some extent dissemination, of information. However, not all the information sources mentioned seem to be used for anticipation (for instance, labour force surveys are absent). It is not clear whether, or how, these data are used by the actors to design deliberate policies.

From the descriptions in the country reports we can identify a set of methodologies that seek to integrate anticipation into matching activities:

■ signalling future needs by integrating data from employment-related registers with information from employer surveys and local knowledge;
■ using steering or sector councils, networks and partnerships to bring together formal information sources and the actors who devise and/or decide action strategies for the areas covered;
■ mid-term projections of employment, based on employer survey information, as an information source for the actors;
■ short-term procedures relating formal enquiries of demand for professionals to the planning of study places;
■ joint development of a supply strategy by state agencies and employers' organisations;
■ joint development of curricula with prospective employers;
■ labour market training related to measurement of mismatch based on comparison of unemployed people and vacancies.

We can elaborate further on these approaches and methodologies, with the following examples from the countries.

■ *Integration of register data with information from employer surveys and local knowledge.* Based on a decree, Croatia provides a ranking of educational specialisations based on outflow from unemployment, plus employers' expressed needs in the survey, plus needs based on local development plans. This ranking should be considered in enrolment policies.
■ *Steering or sector councils, networks and partnerships.* In Egypt, approaches to the involvement of enterprises in training via apprenticeships or partnerships with education providers are combined with steering bodies that assess the measures and bring in broader information about demand for the strategic development of the programmes. In Croatia, sector committees across the whole range of the economy have been defined; they include the main stakeholders, many of them actors in the economy, who assess the current situation and future demand for the sector. Some sectors (e.g. electrical engineering and computer science) have already delivered their results, which look very promising. A broad range of information is reviewed, and a report is delivered covering a detailed assessment of demand for occupations and qualifications, the development of a matrix of competences, an assessment of supply and the (external) labour market, as well as of incomes, and finally an account of the matching situation and recommendations for enrolment policies. In Montenegro, networks linking education providers, economic actors, local communities and others are envisaged in the National Employment Strategy.
■ *Mid-term projection of employment based on employer survey information.* In Kyrgyzstan, the estimates of demand by sectors and occupations from an employer survey have been used to make a simple extrapolation of yearly demand for a five-year period; a replication of the survey is envisaged.
■ *Short-term procedures relating formal enquiries of demand for professionals to the planning of study places.* These procedures, relating the assessment of short-term demand (mostly by public bodies, expressed through formal procedures) to the planning of study places, are used in some countries. An example is the 'state order in education' in Ukraine, where the order is developed by the Ministry of the Economy. An enquiry is made about the demand, and this is negotiated with the Ministry of Education, which in turn has asked education providers about their envisaged supply. In practice these procedures largely tend to favour the wishes of the supply side. However, it is envisaged that longer-term forecasting procedures will generate an improvement in the demand figures, which in turn should lead to a more thorough planning of the 'state order'. Moldova is developing a similar strategy, based on mid-term forecasts of demand and projections of supply; however, the process of translating one into the other is problematic. The estimates for enrolment presented by the educational institutions to the Ministry of Education are very divergent from those of the Ministry of Labour; the final enrolment plans are based on which schools offer the most.

■ *Joint development of a supply strategy by state agencies and employers' organisations*. In Turkey, state agencies, in cooperation with a confederation of employers' organisations, have designed a broad policy to develop skills centres offering job training to unemployed workers in certain sectors and regions. It is planned that these centres will train one million workers in the five years from 2010.

■ *Joint development of curricula with prospective employers*. In Serbia, pilot projects have been set up jointly by schools and prospective employers to develop new curricula. Some 10% of students are already studying these new curricula.

■ *Labour market training related to measurement of mismatch based on comparison of unemployed people and vacancies*. Several countries, for instance Montenegro and Turkey, are using labour market policy training measures to improve short-term matching problems by means of continuing education. The PES, often in cooperation with actors from the enterprise sector, are setting up networks of training centres in addition to those administered by the education authorities.

6. POLICY ANALYSIS

In this chapter we look more closely at the kinds of policy approach that try to improve and develop further the existing practices of anticipation and matching. Some of the policies described are currently under discussion or development, and implementation of others has already begun. However, there is often no clear indication in the country reports about how they work. Policy strategies, current or foreseen, in the selected partner countries address matching and anticipation quite strongly, except in Turkey, where the establishment of formal anticipation procedures is not envisaged.

In **Turkey** the priority is on technical training, which is addressed by a broad supply-oriented strategy jointly implemented by state agencies and employers' organisations, and on the employment of urban youth. The country report recommends that greater emphasis on anticipation in metropolitan and coastal regions would be important. It mentions some specific issues that should be addressed, including education and employment for young urban women, the extension of basic education and transition for young people, and attention to the prospects and qualification of formally unqualified persons so as to broaden their opportunities, which currently lie mainly in informal construction and the textile industry.

The remaining countries tackle matching and anticipation issues in different ways reflecting different overall policy styles. In three countries (Moldova, Kyrgyzstan and Ukraine), matching and anticipation are given prominence in overall national development strategies, with different methodological mixes.

In **Ukraine** four elements are mentioned. The first is the inclusion of formal forecasting in the process of planning and negotiating study places ('state order in education'); here there seems to be some tension in the relationship between the education forecasting and the overall forecasting, for instance as regards time frames and consistency. The second element is the renewal of education standards, impelled by European norms; the third is a law about professional development in the enterprise sector that defines the content of on-the-job training and should simplify recognition of informal learning. Lastly, responsibility for the coordination of VET is shifted to local government. The report also states that the strategic outline is very general, and instruments for implementation and financial means are not yet specified.

In **Moldova** the topic 'Studies: relevant for the career' is mentioned as the first among seven priorities of a mid-term development strategy called Moldova 2020. Forecasting is also included in these proposals; however, the major focus seems to be on defining a set of specified intervention fields in the current system (curriculum, national qualifications framework, educational software, networking, guidance, continuing training and social dialogue) and on designing monitoring indicators which track returns from education, the share of companies that consider the labour force a major constraint, the share of graduates who need further training, and the share of employers involved in professional training. Objectives have been set concerning the following:

- reduction of the unemployment rate as an indicator for mismatch;
- reduction of the flow of young emigrants;
- creating sectoral committees to encourage synergies between education and business (five by 2015, ten by 2020);
- increasing the satisfaction of business with education (from 15% 2011 to 50% in 2015 and 85% in 2020);
- connecting curricula to the labour market, so that graduates' immediate need for further training could be reduced (from 40% in 2010 to 20% in 2015 and 10% in 2020);
- structural changes to increase returns to education;
- increase in knowledge about sustainable development.

According to the report, the enterprise sector is very poorly represented in the working group for the development of this line of action in comparison with the ministries, the education institutions and the training providers. A strategy for the development of education for the period 2011–15 that is run in parallel to the overall development strategy does not mention anticipation of skills demand at all.

In **Kyrgyzstan** the previous development strategy (2009–11) had already included a critique of problems in education and a call for more analysis, monitoring and prognostics. A new strategy is currently being written, and a road map for 2011–15 makes skills matching a priority and includes an outline for a methodology to estimate the expected demand for qualifications and the related specialisms by region. The success of this methodology depends on the distribution of the productive forces, the technology used, the respective products and productivity. Methodologies of this kind should be implemented on the basis of legal regulations. At the policy level, the setting up of a legally mandated national council for skills development, as the country's highest authority in this field, is proposed. This council will include all the relevant actors (government, business, training providers, non-governmental organisations and workers' associations). It will act as an instrument to govern the fragmented VET system and to develop a shared vision and direction as regards skills. The objectives of this body are better quality and greater relevance, reconciling demand and individual

requirements, defining the roles of stakeholders, and providing a framework for planning, implementation and monitoring.

The country reports from Croatia, Montenegro and Serbia point to the employment strategy and the development of national qualifications frameworks as policy strategies towards better matching and anticipation. In these countries there seems to be some consensus about the inadequate links between education and employment, and different kinds of policy initiative have been devised or have started to take steps towards better matching and anticipation.

The **Croatian** report observes that no accepted approach to the improvement of matching has been achieved so far. The report's author argues that a way in between a pure market approach and a planning approach should be found. As shown above, some activities have already been set up (mainly in the employment area), aimed at the substantial improvement of information about mismatches and demand. These include regular employers' surveys and a decree entitled 'Monitoring, analysis and forecasting labour market needs for particular professions, and on making and taking into account the recommendations for educational enrolment policy'. In education, thirteen sector councils related to the Vocational Education Agency have been devised. However, the decree does not set any binding constraints on education, only two sector councils have been fully established, and the report says that the others will probably be further delayed. In addition to these initiatives, some further steps have been taken in the process of accession to the EU to create new frameworks and to allocate responsibilities for anticipation: first, a national committee for the national qualifications framework has been set up accepting the European Qualifications Framework guidelines; second, responsibilities for anticipation have been allocated (although to date no output has been delivered); and an Interdepartmental Working Body for Labour Market Monitoring was established in 2010. These measures are tightly focused on the production of information and there seems to be a firm belief in the system, reflected in the country report, that the provision of information will lead to improved matching.

In **Montenegro** various activities are being developed by the Ministry of Labour and the Ministry of Education, and an improved linkage is also envisaged in order to correlate enrolment decisions more strongly to demand. In this country policy is implemented by specific councils for each areas of education. In the National Employment Strategy (Ministry of Labour) some elements have been included to improve matching, such as developing networks between schools and other actors to improve contacts with the world of work; but these are not a high priority. In education, the government has devised several strategies as a basis for planning by the responsible agencies: for example, for VET in the period 2010–14 there are an action plan and a regional strategy for the north of the country, a strategy for adult education and a four-year plan implemented through the municipalities. In addition several round-tables and seminars have been organised to bring the actors into closer contact.

In **Serbia** the country report indicates an urgent need for improved matching and anticipation, and some concepts have been developed in policy documents. However, not much seems to have been implemented in practice, although qualifications frameworks have been drafted for education and higher education.

The report from **Egypt** points particularly to a need for combined top-down and bottom-up approaches. A number of projects have been developed from the bottom up, ranging from steering strategies to bodies at the national level. Among top-down initiatives, a big 2011–16 strategy for the VET sector and a national action plan for youth employment for 2010–15 are under way, both of these covering information and labour market issues. In addition an observatory has been set up as a broad platform for the improvement and exchange of information and for forecasting. The report emphasises that top-down strategies do not reach the implementation level, making bottom-up projects preferable. At the moment, because of the revolution in Egypt, the further development of some of these approaches cannot be foreseen.

7. SUMMARY AND CONCLUSIONS

In this paper we have attempted to analyse the practices described in the country reports on the basis of a conceptual framework that distinguishes matching and anticipation as different sets of practices performed by various kinds of actor and shaped by institutional and organisational frameworks.

Data and information play a crucial role in these practices and frameworks, as they are needed for structuring the perception of how matching processes operate at the micro level. The classification systems used work as a symbolic structure that somehow creates what happens in matching. These structures are also an important target of deliberate strategies of matching, for example, changes of occupations or qualifications, or even creating a new classification structure by integrating the new concept of 'knowledge, skills and competences' within qualifications frameworks.

Anticipation is seen as a set of practices that intervene in ongoing matching processes by introducing an explicit and systematic way of dealing with the future. Three functions are distinguished in anticipation that must be recognised as equally important: (i) knowledge creation, (ii) information dissemination, and (iii) implementation by means of deliberate anticipation and matching policies. Thus the various methodologies of knowledge creation must be deliberately embedded in broader practices and frameworks of matching.

A distinction has also been made between initial and continuing education: the former is related to the mid and longer terms, whereas the latter is related to the short-term adaptations. It is this difference in time frames that makes explicit and systematic anticipation so important in initial education, in particular if it provides broader and more holistic qualifications that need time for their production.

The analysis has shown a broad array of matching and anticipation practices in place in the partner countries. Despite this wealth of practices, a great deal of uneasiness with the matching situation is common, and we can observe that the perception of mismatch is often based on rather vague indications, which are often extrapolated similarly vaguely into the future. We can infer that a clear observation and analysis of the current situation is needed. This is an important part of the knowledge creation function, and must also be disseminated and shared among the actors involved. The other important aspect of knowledge creation is the systematic evaluation of possible future developments both by quantitative forecasting or projecting and by qualitative methodologies such as scenarios.

A key point of the second function, the dissemination of the knowledge created, is the combination of that knowledge with the informal knowledge that the various actors in these processes already have. If this is not done, the results of the forecasting models will not be used effectively. Credibility is a function of proper methodologies among researchers, but among practitioners and policymakers credibility is based on the merging of results with their informal knowledge. To achieve this, publication is not enough; practical activities which bring the various actors together in organised ways must be established.

This brings us to the third function, implementation, which refers to a broad array of ongoing practices and beliefs into which the results of anticipation must be infused. Mapping these approaches and methodologies has been an important goal of this report, and a basic finding is that success depends less on the application of certain methodologies than on the quality of the relationship of the main ingredients in the system to each other. These main ingredients seem to be:

- good data about the present (and the past);
- a good understanding of the present situation, and how it is produced by the interplay of the various actors and institutions;
- a robust approach and methodology for the production of knowledge about the future;
- an approach to dissemination among the actors that is related to practical options;
- a realistic approach to implementation.

From the analysis we can see some evidence of a firm intention to use forecasting to improve planning mechanisms (e.g. in Ukraine). But it is important to recognise that such approaches have not worked so well in the past when applied mechanistically. Previous reviews suggest that it is not possible to plan education and training systems in detail from the top down, and the conceptual approach adopted here suggests that a mechanical application of forecasting will be unlikely to work any better in the future. The reason is that these attempts will not produce enough credibility for the self-interested actors on the supply side (education and training providers) to act seriously on these predictions, especially if, with the passing of time, the predictions turn out to be not as good as expected.

Another strong message emerging from the reports is the hope that the provision of good forecasts will lead the actors to make good decisions. However, there are different positions and expectations about the uses of forecasting. We know from systems where forecasts have been established for a long time that they do not necessarily influence the

actors' decisions. Debates about what the right decisions might be are common, as is the complaint that young people make the wrong choices. Detailed figures from forecasts mostly commissioned at the aggregate policy level are available, and it is tempting for the actors to take them at face value and to try to 'implement' them in one way or another. But there is broad agreement that it is precisely the detailed forecasts and projections that are most often wrong, whereas the general messages that emerge from them that are robust and useful; the key is to recognise that forecasts cannot be used mechanistically to calculate how many plumbers are needed in a given locality. It is a question not of making a single *right* decision but rather a *well-informed* decision resulting in an outcome which reflects the uncertainties we all face, and which is 'good enough' (and is also one of many possible such outcomes).

So the way towards improvement seems to be to understand how matching happens in a concrete system, to analyse the strengths and weaknesses in that system, and to try to improve by considering the ingredients identified in a balanced way. First, the availability of sufficient data and a good understanding of the current situation must be established. The big gap in this area concerns issues of quality, that is, the qualitative aspects of demand as well as supply; for if there is a lack of information about quality, the quantitative data can only partly be understood. We have seen that many questions are still open in understanding the current situation. Even if more in-depth analyses are available, the policy conclusions about matching are not always clear, as the case of Croatia shows. A good example is the issue of overeducation and undereducation. Overeducation is considered a problem in a majority of the partner countries; the only clear exception is Turkey, where a quantitative increase in higher education is considered necessary for the future demand envisaged. We can see that the evaluation of the situation is often quite difficult. Often there are doubts about the quality aspects of a big expansion in higher education, but on the other hand the returns to higher education are relatively high, possibly also reflecting processes of downward displacement of other lower-level qualifications. Overeducation is in itself a contested and contradictory issue that can only be adequately understood in the overall context; on the one hand a higher level of education normally reflects a better utilisation of young people's potential, while on the other, if there are quality problems in higher education, the quality of the lower levels of the education systems cannot be expected necessarily to be substantially better.

Second, a robust approach and methodology for the production of knowledge about the future is necessary. However, developing forecasts is only one element in this process. Forecasts cannot tell the 'truth' about the future but should be used to help improve understanding of how systems work, and what might happen next, rather than as an input for mechanistic planning for the future. In particular, top-down plans based on mechanical forecasts are unlikely to have successful outcomes. An alternative would be to devise decentralised bottom-up implementation processes based on subsidies for skills providers, employers and/or individual trainees. This applies in particular to continuing education and to the need to maximise flexibility and informed choice. Anticipation systems are needed more on the information side of this equation. The distinction between initial and continuing education is vital. For initial education, at least the compulsory part of it, medium- to long-term forecasting and anticipation systems are indeed needed in order to plan effectively for at least some of the long-term investment decisions in initial education capacity and processes.

Third, it is not enough for knowledge to be available; it must be brought to the actors at the various levels, and they must be enabled to use it. This issue is often neglected in discourses about anticipation, as the provision of good information is expected to work somehow automatically. The approaches of foresight and knowledge management consider this point; the option according to these approaches would be to establish organisational or institutional structures that include networks of the actors involved and are able to combine the knowledge produced by formal methods such as forecasting with the actors' own informal knowledge. This kind of communication can, in particular, contribute to a better understanding of the current situation. Several mechanisms of this kind are growing in the partner countries and should be evaluated and further developed.

Finally, reasonable approaches for the implementation of deliberate anticipation and matching strategies must be found and developed. Policies for matching can be seen as a first step. They concern the current situation and the short term, and if evaluated they also contribute to the understanding of the situation. Anticipation can be seen as a further step. As has been said above, initial education is a priority area here for longer-term approaches. Several approaches have been set up in the partner countries, but most of them are rather recent. It seems that they can provide a sometimes considerable improvement in understanding; however, the question of how to make practical use of this understanding is yet to be fully addressed.

ANNEXES

ANNEX 1. SELECTED STATISTICAL INFORMATION FOR THE EIGHT PARTNER COUNTRIES
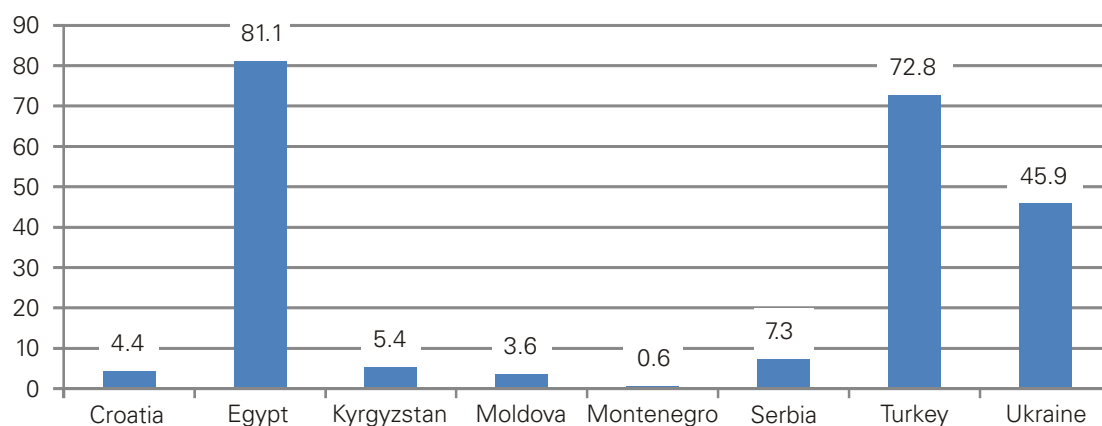
FIGURE A.1 POPULATION, 2010 (MILLIONS)

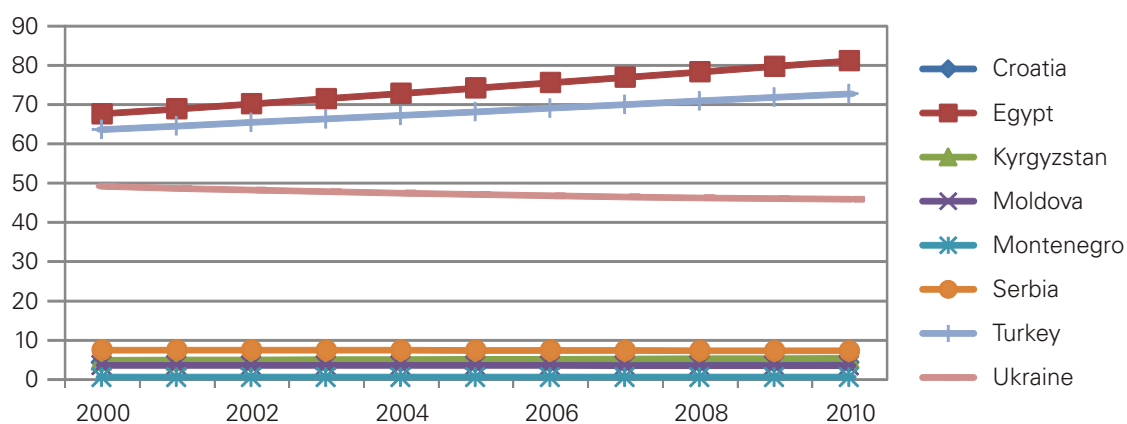**FIGURE A.2 POPULATION, 2000-10 (MILLIONS)**

FIGURE A.3 POPULATION GROWTH INDEX, YEAR 2000 = 100%, 2000-10
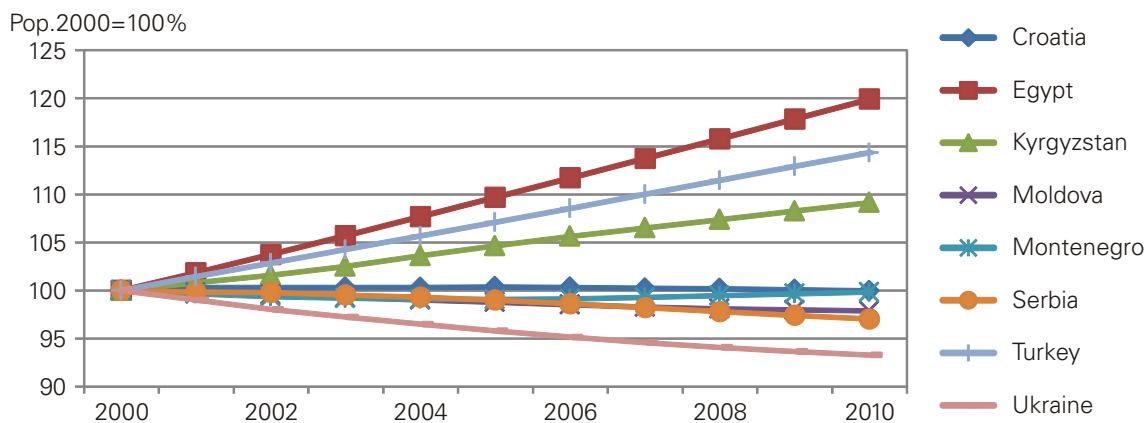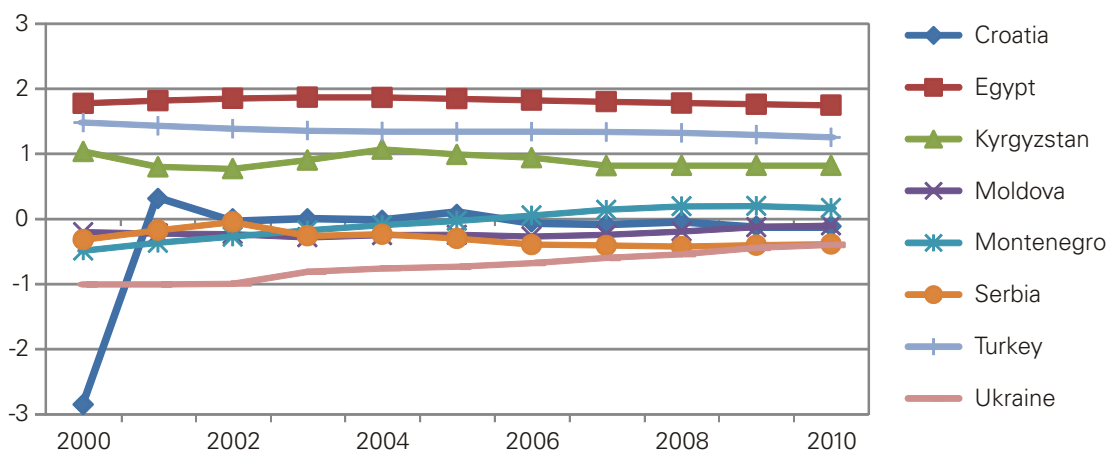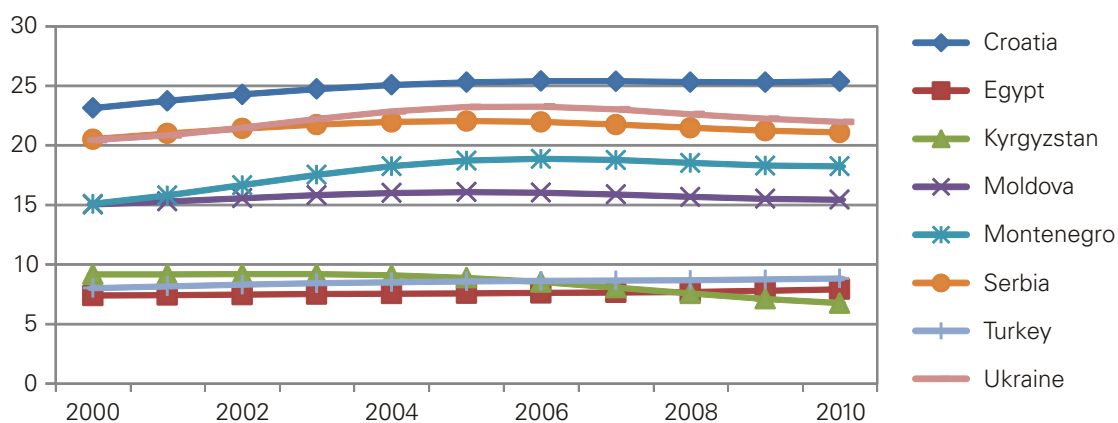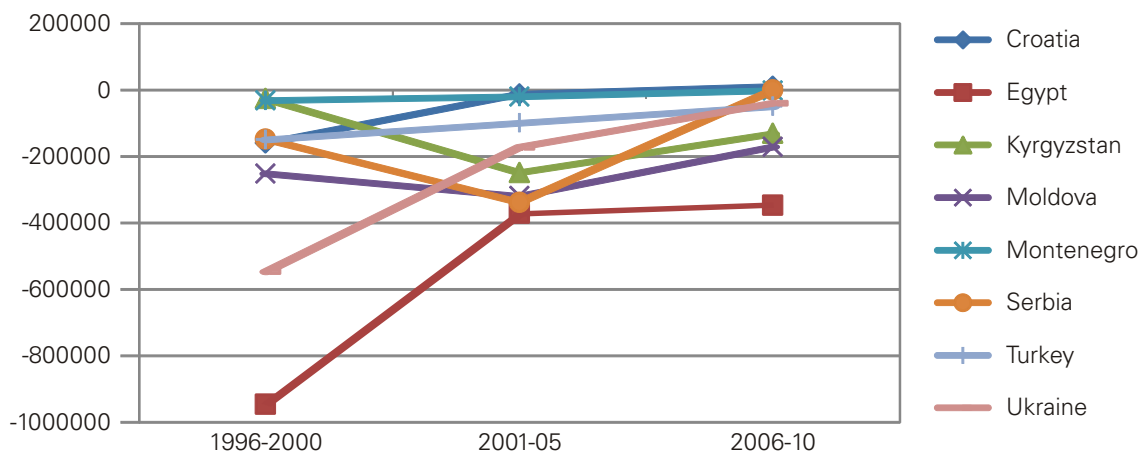
FIGURE A.4 POPULATION GROWTH, 2000-10 (ANNUAL, %)

FIGURE A.5 AGE DEPENDENCY RATIO, POPULATION AGED 64+ AS PERCENTAGE OF WORKING AGE POPULATION, 2000-10 (%)

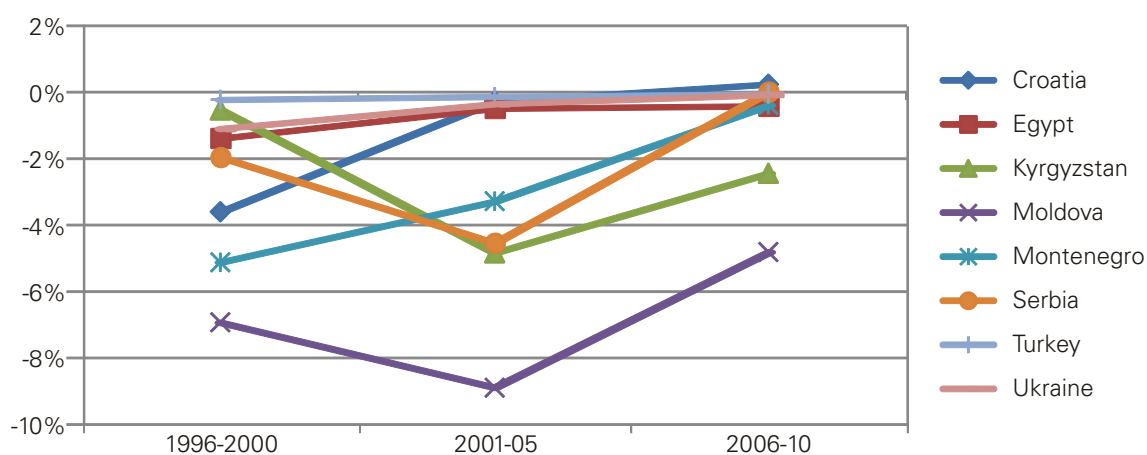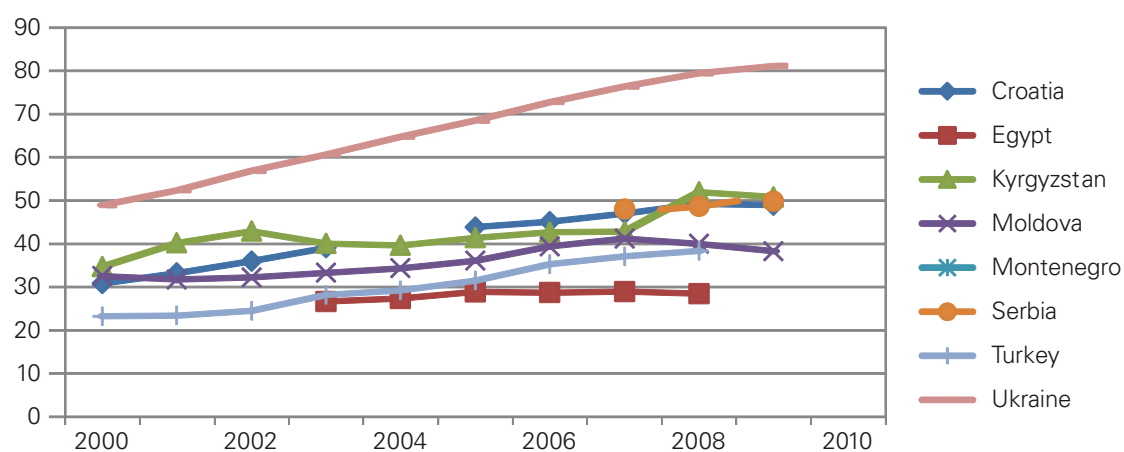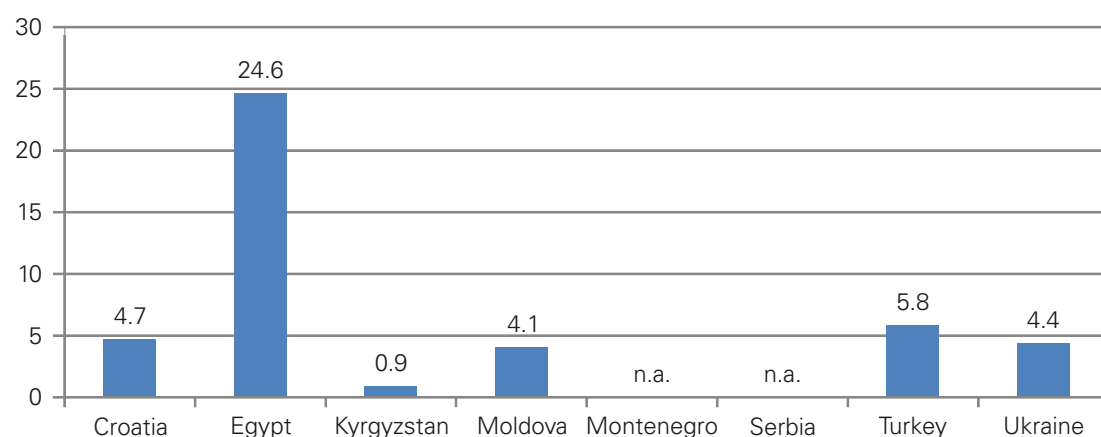**FIGURE A.6 NET MIGRATION, ABSOLUTE,1995-2010 (THOUSANDS)**

FIGURE A.7 MIGRATION, RELATIVE, 1995-2010 (% OF COUNTRY POPULATION)

Legend: Croatia, Egypt, Kyrgyzstan, Moldova, Montenegro, Serbia, Turkey, Ukraine

FIGURE A.8 PERCENTAGE OF POPULATION WITH TERTIARY EDUCATION, 2000-10

Legend: Croatia, Egypt, Kyrgyzstan, Moldova, Montenegro, Serbia, Turkey, Ukraine

FIGURE A.9 PERCENTAGE OF THOSE WITH TERTIARY EDUCATION WHO HAVE EMIGRATED, 2000

Croatia	Egypt	Kyrgyzstan	Moldova	Montenegro	Serbia	Turkey	Ukraine
4.7	24.6	0.9	4.1	n.a.	n.a.	5.8	4.4

FIGURE A.10 PUBLIC EXPENDITURE ON EDUCATION AS PERCENTAGE OF GDP, 2005-10
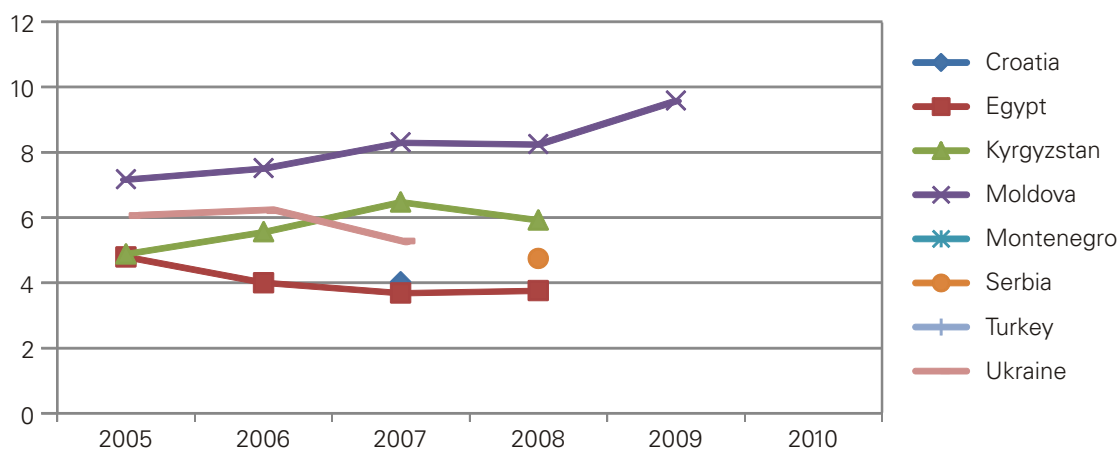
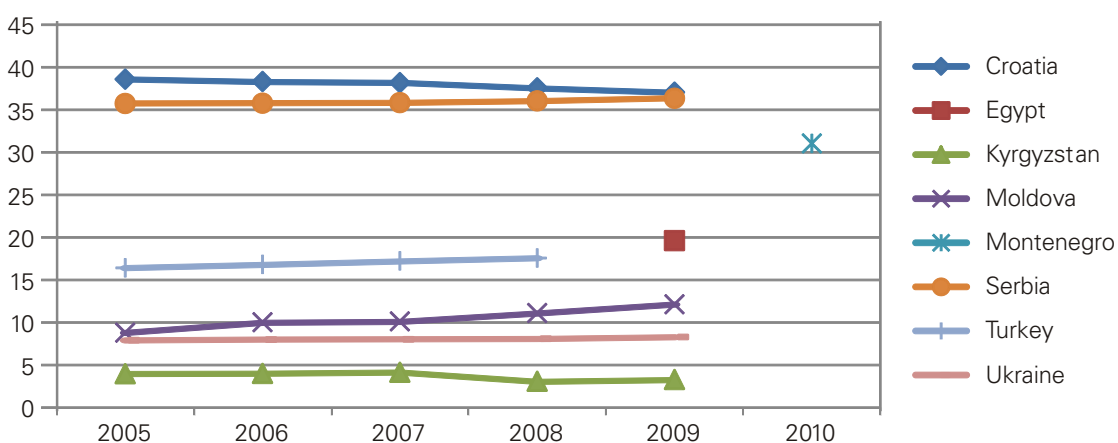**FIGURE A.11 SHARE OF VET IN ISCED 2-3, 2005-10 (%)**

FIGURE A.12 LABOUR FORCE PARTICIPATION, PEOPLE AGED 15+, 2000-09 (%)
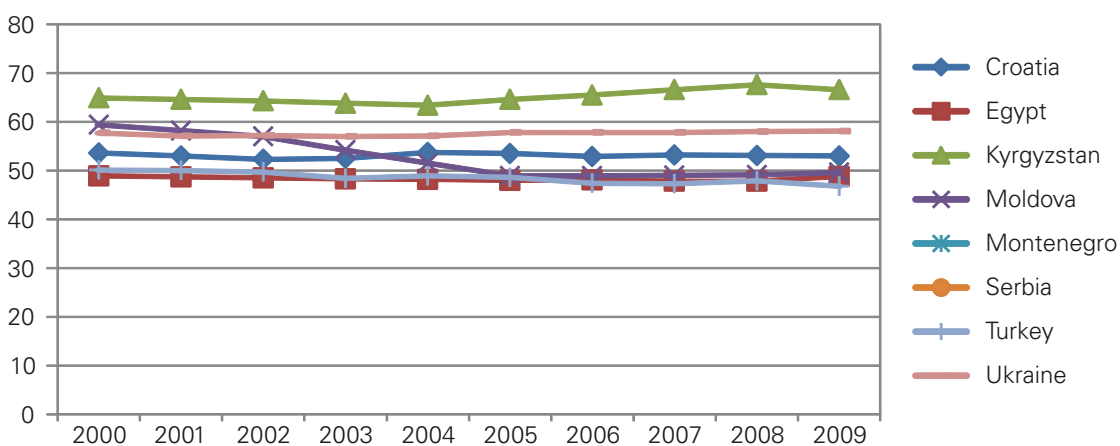
FIGURE A.13 LABOUR FORCE PARTICIPATION, FEMALES AGED 15+, 2000-09 (%)

Legend: Croatia, Egypt, Kyrgyzstan, Moldova, Montenegro, Serbia, Turkey, Ukraine
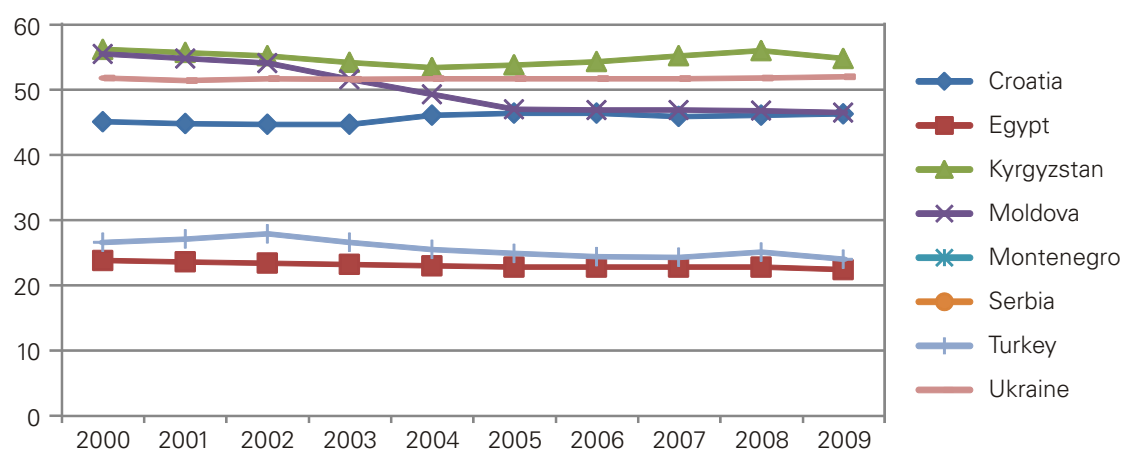
FIGURE A.14 OVERALL UNEMPLOYMENT RATE, 2000-09

Legend: Croatia, Egypt, Kyrgyzstan, Moldova, Montenegro, Serbia, Turkey, Ukraine
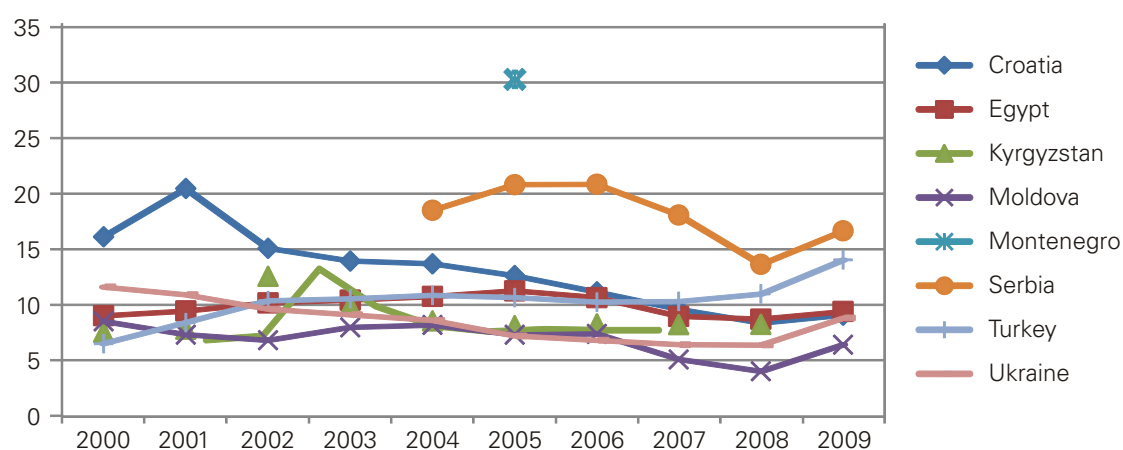
FIGURE A.15 YOUTH (15-24) UNEMPLOYMENT RATE, 2000-09

Legend: Croatia, Egypt, Kyrgyzstan, Moldova, Montenegro, Serbia, Turkey, Ukraine
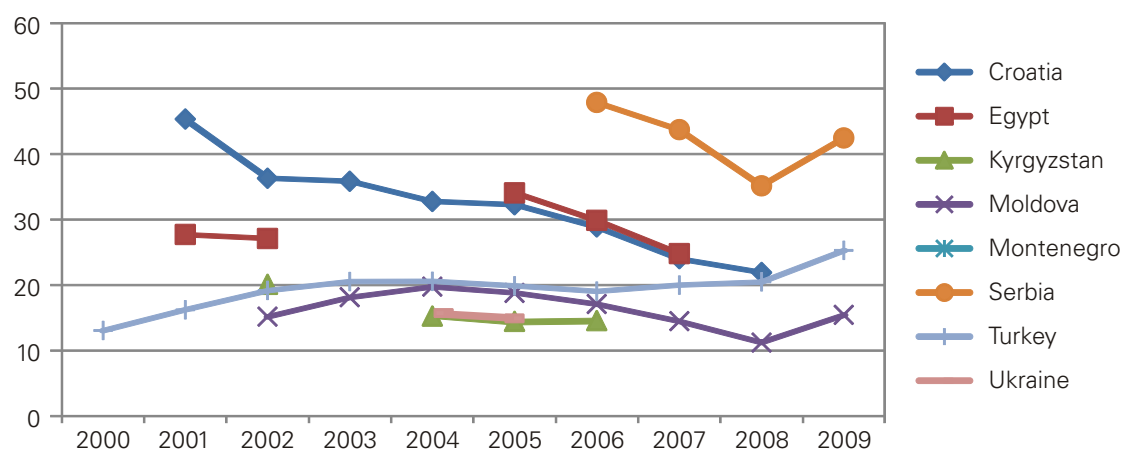
ANNEX 2. GUIDELINES FOR THE COUNTRY REPORTS

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 of and demand for education and training. This coordination occurs at several levels, from the fit between individual workers and their tasks to the fit between the supply of both initial and continuing education/training on the one hand and the requirements for qualifications on the other and, finally, the overall fit between supply and demand on the labour market. A key aim of the project is to find out 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 of and demand for skills as well as for communication about these relationships among the various players and stakeholders:

■ educational programmes at different levels;
■ qualifications (formal and non-formal, in initial and continuing education);
■ 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), as well as the aspect of formal qualifications, which are the 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 provision and transaction of supply and demand in a system, which can be measured quantitatively, on the other. Several expressions of unmet requirements can be distinguished, considering the timescale between current short-term gaps and mismatches and upcoming problems in a mid-term or longer-term perspective. In the course of the project the term 'skills' is used in an open way, and the specific meanings that it has in each country should be explicitly described and emphasised.

Anticipation

The term denotes all procedures that try to capture aspects of *future relationships* between supply and demand as regards education/training, with a particular emphasis on upcoming 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 to observe the current and ongoing relationships between the supply of and demand for 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 a proper understanding of the present state of play.
■ *Anticipation* denotes the procedures in place that are aimed at understanding future requirements. It includes a variety of methods and instruments for the acquisition of information and knowledge – quantitative and qualitative, formal and informal, ranging from formal, quantitative forecasting based on projections or surveys, through 'softer' predictive methods, to more informal projects based on the exchange of information and knowledge between 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 actually is, used by the relevant actors.

AIMS OF THE FIRST PHASE OF THE PROJECT

The aim for 2011 is to carry out a stocktaking of what the partner countries are doing in their efforts to anticipate and improve matching between education/training supply and current or upcoming employment requirements.

We assume that several such procedures are currently going on in the partner countries and their regions or sectors. The country reports should give an account of these procedures, both those already being used and/or those envisaged, that is as detailed and concrete as possible. In order to be able to communicate about these procedures and to build a network promoting their improvement, it is necessary to obtain comparable information that can be categorised according to the aspects considered above. Since it is also important to situate the procedures properly in their context, the institutional structures and policies related to them must also be examined.

A basic framework for the understanding and classification of the procedures in place can be provided, linking two dimensions: the micro, meso and macro levels of observation/practice and the short, mid and long-term timescales of problems/procedures. This relation is indicated by the following matrix, which gives some examples of the procedures that might be undertaken.

MATRIX WITH TIMESCALES AND LEVELS

	Short term	Mid term	Long term
Micro level (people, work places, enterprises)	Qualification, KSC needs assessment at company level, education-employment transition		
Meso level (sectors, regions, intermediary actors: PES, education/training providers)	Employer surveys Vacancy monitor	Sector and region specific skills needs analyses	
Macro level (economy, education/training system)		Qualitative methods (expert panels, Delphi, scenarios)	Formal quantitative projections or forecasts

GUIDELINES FOR REPORTING

In order to be comparable and manageable, all the country reports should contain the same type of information at a similar level of abstraction. Therefore we propose the following template (Sections 1–6 below).

The template is designed to make it as clear as possible to the national experts what kind of information about the country's practices and systems is sought. The messages sent to them are formulated as questions, some general and some more specific. While these questions should indicate as clearly as possible the issues about which information is wanted, they are not necessarily meant as a questionnaire. The country experts are asked to provide their information in the most convenient form for giving a valid picture of their country with respect to what is wanted. It is important that the aspects about which information is requested are covered as fully as possible, but it is less important whether this information is provided as direct responses to the questions or in a more narrative form. In the latter case, the information should be organised into subsections addressing the topics outlined in Chapters 1–6.

1. Summary of the main issues and understandings

This section should summarise the main issues and understandings of concepts of matching problems (mismatch) and anticipation of skills requirements in your country, briefly giving the key points, explanations and illustrations to be further developed in subsequent sections (about 1 page).

More specific questions:

- What specific meanings of 'skill' are used by actors in debates and policies about skills requirements and matching in the country?
- What are the most common meanings and perceived problems of matching and mismatch in education/training and in employment?
- What future requirements and unmet demands are commonly perceived?
- Who are the main actors involved, and what are the important subsystems (sectoral, regional) concerning matching and anticipation?
- Are different views held by different actors, or in different subsystems, and if so what are they?

2. Situation analysis

This section should give an overview of the main observations of the current situation of matching/mismatch of supply and demand in the labour market and the development of requirements in education and training. Please note that this is *not* a request for another overall description of developments in the labour market; that information is already available to the ETF. The focus should be clearly placed on the issues of matching and anticipation.

Main general questions to be addressed (about 5 pages):

■ What is the situation at the moment in terms of supply and demand?
■ What kinds of requirement and mismatch are debated?
■ How is the situation analysed?
■ Which actors do what?
■ What kinds of information and data are used? What kinds are missing?
■ Are any specific regions or sectors addressed and/or neglected?

More specific questions:

■ How do demand and supply on the labour market evolve? Please give a narrative description of the main developments; if figures are included these should cover a range of 10 years or more.
■ What kinds of mismatch are observed and what kinds of skills requirement are perceived?
■ How do initial and continuing education/training respond to the mismatches and requirements? What are the main problems in this respect?
■ What kinds of institutional framework deal with matching and anticipation? At what levels? Who are the actors involved?
■ What role does the supply of private education/training play? What are its characteristics in terms of quality, cost, etc.?
■ How is the relationship between the formal and informal sectors of employment and/or education dealt with in quantitative and qualitative terms? How can the distinction be made explicit?
■ Is there a role for informal learning in relation to formal education/training? How can the distinction be drawn?

3. Data availability

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

Main general questions to be addressed (about 5 pages):

■ What kinds of data are available regarding the improvement of the matching of supply and demand in education/training and employment and the anticipation of skills requirements?
■ How are these data provided and disaggregated?
■ What is known about the use of these databases for matching and anticipation?
■ What gaps are perceived in the information bases?

More specific questions:

■ Description of the main data available: please give the information required in the table below with regard to the main current databases; include additional rows if more than one database exists in a section.

Name of database (DB)	Provider and kind of data (administrative data, survey)	Regular or occasional; timescale	Availability (to actors and researchers)	Categories (international classifications)	Disaggregation (national, regional, local; institutions, sectors)
Data about education and training					
[DB 1]					
[DB 2]					
[…]					
Data about employment and the labour market					
[DB 1]					
[DB 2]					
[…]					
Data about the transition from education/training to employment					
[DB 1]					
[DB 2]					
[…]					
Data about the utilisation of education/training (income; assessment by individuals, enterprises, etc.)					
[DB 1]					
[DB 2]					
[…]					

■ Discussion of the main perceived gaps in the data and their availability, coverage, quality and validity: please qualify each of the databases in this respect by a narrative assessment in the following table.

Name of database (DB) as given in table above	Assessment of availability, coverage, quality and validity
[DB 1]	
[DB 2]	
[…]	

Note: The ETF will also request selected data to calculate mismatch from the national experts to be submitted in parallel to the national report, which must describe all of the nationally available data. A separate investigation about these selected data will be carried out.

4. Methods for anticipating skills demands

The purpose of this section is to describe and take stock of current practices, ongoing or recently started, which can contribute to matching between education/training and employment/the economy and anticipation of future requirements. This is a core part of the country reports, and experts are specifically asked to invest some effort into the research of these issues (e.g. by asking other actors about the situation in areas with which the experts themselves might be not so familiar).

Main general questions to be addressed (5–10 pages):

■ How are skills requirements considered in the development of education/training institutions or programmes, initial and continuing?
■ What actors are involved?
■ What kinds of information and knowledge are used?
■ How is informal knowledge about requirements brought into these processes?
■ What kinds of institution are involved (e.g. administrative units, interest organisations, Research and Development units)? What roles do they play?
■ Are specific methods for the improvement of matching and anticipation currently in place? Which ones?

More specific questions (please give a short narrative answer to these questions, describing any remarkable results and showing how the findings have been used, if this information is available):

■ To what extent are skills requirements considered in the processes of creating a new education/training institution or programme in initial and continuing education and training? How is this the case? Are there differences between the main sectors, e.g. VET institutions, higher education, further education centres? Are there formal or informal procedures? What kinds of information are used? What kinds of actor are involved?
■ How do enterprises react to skills requirements? Is there knowledge available about the provision of further education in the enterprise sector?
■ Is there knowledge available about the procedures of anticipation of skills requirements in the enterprise sector?
■ Does the employment service at national or regional level run procedures of detection/anticipation of skills requirements? What methods are used? What actors are involved? What kinds of result are produced?
■ Are formal procedures of projecting or forecasting skills requirements in operation? Who runs them? What methods are applied? What do these procedures look like? What kinds of result are produced? How are the results used?
■ Are sectoral studies or projects available that aim at more in-depth analyses of skills requirements? Who runs them? What methods are applied? How are they designed? What kinds of result are produced? How are the results used?
■ Are enterprise surveys available about employers' skills demand and requirements? Who runs them? What methods are applied? How are they designed? What kinds of result are produced? How are the results used?
■ Are surveys among employees or completers/graduates from education/training available about the utilisation of their skills? Who runs them? What methods are applied? How are they designed? What kinds of result are produced? How are the results used?
■ Are informal procedures (task forces, working groups, scenario or Delphi projects, etc.) carried out? In which areas (institutions, sectors, regions)? Who runs them? Who participates? What methods are applied? How are they designed? What kinds of result are produced? How are the results used?
■ How is informal knowledge of actors utilised in the procedures of matching and anticipation?

The following table, giving an overview of current practices in matching and anticipation, should be completed. Please create a new row for each procedure or method identified under each of types 1–6.

OVERVIEW OF CURRENT PRACTICES

Type and title of 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 with what 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 types 1–5)					
Method ...					
Method ...					

5. Policy analysis

This section should contain a description of how policies deal with the problems and the improvement in matching and anticipation.

Main general questions to be addressed (about 3 pages):

- What kinds of actor are involved, and in what ways, in policy debates about mismatch and (unmet) skills requirements?
- How big are the gaps observed?
- Are strategies and proposals for improvement provided? By whom?
- Are there conflicts about the definition of the situation? Among whom?
- What are the main obstacles/hindrances in matching and anticipation?

More specific questions:

- Are specific policy strategies in place for the improvement of matching and anticipation? Could some of them be considered as 'good practice'?
- How are the different levels – micro, meso, macro – considered in the debates and proposals for policies to improve matching and anticipation?
- What actors are particularly concerned with policies for improvement of matching and anticipation?

6. Summary assessment

Assessment by the expert of the main issues, good practices and problems (0.5–1 page):

■   What main issues, good practices and problems would you specifically highlight?
■   Do you, as an expert, see mismatch as a major problem in your country? In which areas?
■   Which of the reported procedures do you assess as particularly good practices that could be recommended to other countries or systems?
■   What particular kinds of gap and problem do you see in matching and anticipation in your country, and how could they be resolved in your view?

ACRONYMS

EBRD   European Bank for Reconstruction and Development

ETF   European Training Foundation

ETP   Enterprise TVET partnership

EU   European Union

GDP   Gross domestic product

ICT   Information and communication technology

ISCED   International Standard Classification of Education

KSCs   Knowledge, skills and competences

TVET   Technical and vocational education and training

VET   Vocational education and training

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