



Regional Synthesis Report on Skills Forecasting in the Mediterranean Region

An Assessment of the Feasibility and
Usefulness of Developing Skills Forecasting in
the NET-MED Youth Beneficiary Countries

2016

Preface and Acknowledgements

This Regional Synthesis Report on Skills Forecasting in the Mediterranean Region has been prepared by R. A. Wilson, Rachel Beaven, Erez Yerushalmi and Ben Gardiner in January 2015 to inform UNESCO about the feasibility of developing systematic quantitative skills forecasts as part of the aim to improve capacity in the NET-MED Youth countries for thinking about the possible futures they face. It draws upon a set of Positional Papers prepared by national experts from each of the countries involved. These have been used to prepare the eight individual Country Appendices presented in this report. In many cases, the text from Positional Papers has been used in the Country Appendices with little or no modification. The authors of the Regional Synthesis owe a great debt to the national experts who have also commented on the final report. However, responsibility for the views and opinions expressed and for any remaining errors lies solely with the authors of the present report.

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Executive summary

Background and context

Networks of Mediterranean Youth (NET-MED Youth) is a three-year programme implemented by UNESCO and funded by the European Union. NET-MED Youth aims to mainstream youth issues and priorities in ten European Neighbourhood Policy (ENP) South countries (Algeria, Egypt, Israel, Jordan, Lebanon, Libya, Morocco, Palestine, Syria and Tunisia). Specifically, the Employment component of the programme is intended to provide youth organizations and other national stakeholders with key findings and analysis on economic, institutional and policy contexts regarding the transition to the labour market for young people, including key policy recommendations on future skills needed by the labour market in the short and medium term, and related national capacity development.

This *Situational Analysis Report* is a cross-country analysis intended to assess, through an evidence-based approach, the feasibility of conducting a skills forecasting exercise in each country. It draws upon a set of *Positional Papers* prepared by national consultants from each of the countries involved.¹

Some form of regular skills and labour market anticipation is now a key feature of policy in many countries across the world. This is seen by most governments as a key instrument for helping labour markets to work more efficiently and effectively. The aim is not top-down planning of education and training systems to meet demand from the economy, but rather to provide all the actors in the economy and the labour market with robust information to help them make informed choices and decisions. This includes individuals making career decisions as well as education and training providers.

As well as the *Positional Papers* the authors of the *Situational Analysis Report* have benefited from detailed exchanges with the authors of those papers, including a two-day workshop held at the UNESCO offices in Paris on 5 and 6 November 2014. The position for each country is summarized here in a set of *Country Appendices*. These draw heavily on the *Positional Papers*.

The key data requirements to carry out a systematic quantitative assessment of future skills needs include:

- suitable data from the national economic accounts (essential for economic/econometric modelling at a detailed sectoral level)
- information on relationships between sectors (input output tables)
- information in labour supply (demography and labour market participation)
- reliable estimates of employment by sector based on censuses or large representative surveys of employers (based on standard systems of classification that enable measurement of changing structures over time)
- acceptable estimates of occupational (and ideally also qualification) employment structures based on household surveys (such as the European Labour Force Survey (LFS) or the equivalent, again

¹ The countries participating in this Regional Synthesis report are Algeria, Egypt, Israel, Jordan, Lebanon, Morocco, Palestine and Tunisia. Research was not conducted in Libya or Syria because of the political and institutional situation in these countries.

using standard systems of classification for occupations and qualifications, that enable measurement of changing structures over time).

While many of the NET-MED Youth countries have experienced stable and significant growth over the period from 2005 to 2015, in many cases this has not been sufficient to create enough jobs for their entire workforce, especially the young. This has led to frustration and was one of the factors behind the so-called Arab Spring of 2011. The *Positional Papers* identify a series of challenges, including:

- large and growing youth populations continuing to increase pressure on labour markets
- insufficient jobs for young people
- a mismatch between skills demanded and those available
- the continued significance of the informal economy (which acts as a safety valve but is also seen by some as a drag on growth potential)
- sociocultural factors which result in women facing specific challenges in accessing the labour market.

The provision of more and better labour market information (about current trends and future prospects) is seen as one important element in dealing with these challenges.

Findings – Potential for forecasting model development

In most NET-MED Youth countries, the basic data requirements to undertake a quantitative assessment of the labour market and future skills needs (as set out above) seem to be met, although there are often problems.

The main problems and limitations relate to:

1. problems in establishing a stable picture of likely future developments, given the political and other uncertainties faced by this particular group of countries
2. the significance of the informal economy, which makes accurate measurement of the overall scale and structure of employment difficult, as well as complicating the modelling process
3. the significance of international flows of remittances to support the economies of many of the countries
4. the general lack of well-established macroeconomic models on which to build projections (albeit with some exceptions, such as Jordan)
5. the lack of a focus in the modelling and forecasting work on the youth labour market, which is a prime consideration in the NET-MED Youth project²
6. access to data to build relevant quantitative models, especially at a more detailed level, which limits what can be done in terms of skills forecasts.

The first point emphasizes that the use of any kind of model or approach based on extrapolating from past trends is especially problematic in this set of countries. The so-called ‘Arab Spring’ is just the latest

² This is also the case in established approaches to forecasting such as CEDEFOP’s. Such models rarely focus on the age dimension, especially on the demand side. In a number of countries, such as Egypt, there is a focus of policy on the youth labour market and there have been some studies.

manifestation of the tensions in these countries, which have deep historical roots. These tensions have often resulted in conflict in recent years, both within countries and across national boundaries. This makes any kind of prediction problematic. Establishing robust historical trends and patterns of behaviour is much more difficult than it is in many European countries. This may favour the use of more qualitative methods for assessing future possibilities. However, any such exercise needs to be based on as sound a set of quantitative foundations as it is possible to build if it is to be regarded as credible.

The second point can be addressed by investing time and effort to understand and model the informal economy. Only in the case of Lebanon has any attempt been made to model the informal sector, with a particular focus in the research there on the labour market. There remain challenges to modelling the informal economy in energy–environment–economy macroeconomic (E3ME)-type and computable general equilibrium (CGE) models because of the variety of ways in which the informal economy is conceptualized and measured in the different NET-MED Youth countries. However, the Lebanon model and other such research provides a valuable starting point to consider how best the NET-MED Youth project could develop the treatment of the informal sector.

Similarly, the third point can be addressed by investing time and effort to understand and model the nature and significance of international remittance flows.

Dealing with point 4 is in a sense the main purpose of the present *Situational Analysis* exercise. There are various possibilities regarding types of models to be developed, as well as various options regarding how and by whom this should be done. These are discussed in detail in the main report.

The current skills projections for the European Centre for the Development of Vocational Training (CEDEFOP) are driven by the E3ME model developed by Cambridge Econometrics, but they could be driven by any other model that delivered detailed analysis in terms of sectors, and labour supply.

Point 5 is obviously a key concern, given the overall aims of the project. This can be addressed by developing new modules to extend the quantitative analysis to focus on young people. This is most straightforward on the supply side (focusing on the numbers of people who are economically active and trends in educational attainment and skill acquisition). However, some progress is also possible on the demand side, focusing on the breakdown of employment by age and also unemployment.

Finally regarding data availability and accessibility, this is again a prime objective of the present *Situational Analysis* exercise. The general conclusion is that the basic data building blocks are available and accessible. Given the nature of the NET-MED Youth project, the point about the lack of detail is probably not that critical. The focus in the first instance should be on broad skills levels rather than detailed occupational analysis. In the longer term this problem can be addressed by investing in more detailed and robust data.

The main conclusion is that it is possible, in principle, to do something useful. Given the focus of the NET-MED Youth project on capacity-building, the recommendation is to develop a country-focused, institutionalized hybrid approach that combines quantitative and qualitative methods. Ideally this can be done in such a manner as to facilitate comparisons across the NET-MED Youth countries, but this should not be an overriding consideration. In some countries (such as Jordan, Morocco and Tunisia) it seems possible to build on existing models. In other countries the best option may be to build something new.

It is also clear that, in practice, it is crucial to engage with the key stakeholders in each country if such work is to be successful. These stakeholders vary from country to country, but include always the main national statistical agency and one or more government departments with a responsibility in the relevant areas. Suggestions about the key stakeholders that need to be approached in each country are given in the *Country Appendices* and summarized in the main report in Section 2.4. These national institutions and organizations are regarded as key players who need to be engaged as partners for further development work.

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Acronyms and Abbreviations

AJYC	All Jordan Youth Commission
ALMP	Active labour market policy
ANAPEC	Agence Nationale de Promotion de l'Emploi et des Compétences
ANETI	National employment and self-employment agency
BCT	Central Bank of Tunisia
BLS	Bureau of Labor Statistics (USA)
CAPMAS	Central Agency for Public Mobilization and Statistics
CAS	Central Administration of Statistics
CBE	Central Bank of Egypt
CBS	Central Bureau of Statistics
CEDEFOP	European Centre for the Development of Vocational Training
CGE	Computable general equilibrium (model)
CNSS	Caisse Nationale de Sécurité Sociale
CRES	Centre de Recherches et des Etudes Sociales
CRI	Consultation and Research Institute
DoS	Department of Statistics
E3ME	Energy–environment–economy macroeconomic (model)
EETEO	Egyptian Education, Training and Employment Observatory
ENP	European Neighbourhood Policy
ERF	Economic Research Forum
GDP	Gross domestic product
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit (German international development agency)
HCP	Haut Commissariat au Plan
ICT	Information and communications technology
IDSC	Information and Decision Support Center
IEQ	Institute d'Economie quantitative
ILO	International Labour Organization
INS	Institut National de la Statistique
ITCEQ	Institut Tunisien de la Compétitivité et des Etudes Quantitatives
LFS	(European) Labour Force Survey
LMI	Labour market information

LMIS	Labour market information system
MLVT	Ministry of Labour and Vocational Training
MOF	Ministry of Finance
MOL	Ministry of Labour
MoMM	Ministry of Manpower and Migration
MOP	Ministry of Planning
MoPIC	Ministry of Planning and International Cooperation
NCHRD	National Center for Human Resources Development
NEO	National Employment Office
NET-MED Youth	Networks of Mediterranean Youth
NEW	New Entrants to Work programme assisted by the World Bank
NGO	Non-governmental organization
NSA	National statistical agency
NSO	National Statistical Office
OECD	Organisation for Economic Co-operation and Development
OFPPT	Département de la formation professionnelle, Office de la formation professionnelle et de la promotion du travail
ONC	Observatoire National de la Conjoncture
ONEQ	Observatoire National de l'Emploi et des Qualifications
ONJ	Observatoire National de la Jeunesse
PBYRC	Princess Basma Youth Resource Centre
PCBS	Palestine Central Bureau of Statistics
PES	Public Employment Service project
SAM	Social accounting matrix
SCHRD	Supreme Council for Human Resource Development
TVET	Technological and vocational education and training
UNESCO	UN Educational, Scientific and Cultural Organization
VTC	Vocational Training Corporation

1. Introduction

1.1 Background, aims and objectives

This document has been prepared by the authors comprising an external expert team to inform UNESCO about the feasibility of developing systematic quantitative skills forecasts.

The work described forms part of the three-year Networks of Mediterranean Youth (NET-MED Youth) programme, implemented by UNESCO and funded by the European Union.³ NET-MED Youth aims at mainstreaming youth issues and priorities across national decision-making and policy implementation in Algeria, Egypt, Israel, Jordan, Lebanon, Libya, Morocco, Palestine, Syria and Tunisia.⁴ This will be achieved by building the capacities of youth and youth organizations, promoting their active engagement in the development and implementation of national policies and strategies on youth, and ensuring that youth issues are adequately covered by national and regional media. Furthermore, it will be achieved by developing prospective and participatory approaches to reinforce the active role of young people in governance of employment and skills development policies and programmes, and overall improving transitions to labour market and adulthood.

More specifically, the Employment component aims at providing youth organizations and national stakeholders with key findings and analysis on economic, institutional and policy contexts of transition to the labour market for young people. These include a situational analysis of existing researches conducted in this field in each country, and a review of current data availability allowing projections on the supply of and demand for skills, in order to support the knowledge basis for better-informed policies and career choices.

This *Situational Analysis Report* is a cross-country analysis intended to assess, through an evidence-based approach, the feasibility of conducting a skills forecasting exercise in each country. It draws upon a set of *Positional Papers* prepared by national consultants from each of the countries involved.

This report also sets out a realistic timeframe, taking into consideration the time and budgetary constraints of the NET-MED Youth project. The project duration is currently from 1 February 2014 to 1 February 2017.

The structure of this report broadly follows that of the *Positional Papers*, but taking a cross-country perspective. A series of *Country Appendices* provide a more detailed assessment of the situation in each country. These again follow a similar structure, focussing on three main areas: Context, Research Evidence and Data Availability. These three main areas are introduced here in turn.

First there is an assessment of the ***overall economic, political and social context***, highlighting the main expected challenges and opportunities, and focusing especially on issues that are the focus of the NET-

³ See: www.netmedyouth.org

⁴ The NET MED Youth countries are Algeria, Egypt, Israel, Jordan, Lebanon, Libya, Morocco, Palestine, Syria and Tunisia. However, because of the current situation in Syria, young Syrian refugees will be targeted in Jordan and Lebanon, without any specific activity being conducted in Syria. The situation in Libya is also difficult, and this country has not been subject to a full situational analysis.

MED Youth project. This includes a characterization of the key features of the economies and labour markets of the NET-MED Youth countries. It is clear that although they have many features in common there are also a number of significant differences. This section also considers briefly the characteristics, effectiveness and impact of youth transition policy in these countries, as well as the many future challenges and opportunities they face (with a special focus on the problems of young people). However, these issues are less well developed in the *Positional Papers*, and so are dealt with in only a cursory fashion here.

Having considered the current situation and future prospects in general terms, the focus then shifts to *an assessment of the available research evidence*, especially any existing research on economic and labour market forecasting, and any other relevant research on the labour market for young people. It is also clear that the scale and nature of the informal economy is a key issue in many of these countries.

The review of evidence concludes with *an assessment of data availability*, focusing on the main aim of developing quantitative labour market forecasting tools. This section provides a more detailed description of the data required to develop a multisectoral macroeconomic model (econometric or computable general equilibrium, CGE) similar to that used in the approach taken by the European Centre for the Development of Vocational Training (CEDEFOP).

The report concludes with a final chapter which draws all this together, including recommendations to UNESCO on next steps. This includes a summary of:

- the main challenges and opportunities for the labour market in these countries, with particular emphasis on young people, including where possible an assessment of how far existing youth transition policy frameworks in these countries have been effective and the extent to which they involve young people and relevant representative organisations;
- the strengths and the gaps in the existing research, especially with regard to skills anticipation and labour market forecasting;
- the priorities for future research in skills anticipation, including the likely opportunities for and challenges to this research;
- the data available to conduct skills and labour market forecasting;
- an assessment of the feasibility of developing systems and models for doing such work in the context of the NET-MED Youth project;
- specific recommendations about next steps, including costs.

The *Country Appendices* provide a brief summary of the situation in each of the NET-MED Youth countries. Other appendices provide details of the different types of models that can produce the estimates and typical costs associated with such work.

1.2 Rationale for conducting regular skills projections

The case for a regular and systematic assessment of future skills needs is now well established in many countries. It was summarized briefly in Wilson and Beaven (2014) as part of this project. This is not the place for a detailed history, but it is worth recalling how current methodologies for skills anticipation have developed over the past fifty years and more.

The US Bureau of Labor Statistics (BLS) was a pioneer in this area, and its work has been emulated since in many other parts of the world. In a European context the case for regular quantitative anticipatory exercises in the area of the labour market and skills is set out in the European Council's conclusions on *New Skills for New Jobs: Anticipating and matching labour market and skills needs*.⁵ Comprehensive assessments of future skills requirements can make a key contribution to the identification of labour market trends and skills shortages, helping to contribute to a better match between labour market needs and skills supply developments.

More effective anticipation and matching of labour market needs, it is argued, can contribute to the promotion of better labour utilization and higher labour productivity, and therefore to growth and jobs, helping to reduce both frictional and structural unemployment. Work of this kind has been conducted regularly for many years in countries such as the United Kingdom, and has become increasingly popular in many other parts of the world including Asia and South America.

There is ongoing interest among policy-makers in ensuring that their countries have the appropriate skills base to sustain economic growth and compete internationally. However, such information is potentially of interest not just to policy-makers but for all those having to make decisions about education and training, including individuals making career choices, as well as education and training providers, and it is this rationale that has tended to take precedence in most countries in recent years.

The main rationale for producing these kinds of projection is no longer that policy-makers are trying to engage in detailed, top-down planning (or anticipation) of the education and training system in order to ensure that it meets the needs of the economy and the labour market. Rather, it is more about providing information to allow individual actors throughout the system (individuals making career choices, educational and training establishments, and employers generally) to make better-informed choices and decisions.

Of course, nobody can predict the future with certainty. Most people can and do make plans and try to prepare for it. In doing so they adopt assumptions about what the future might be like, even if it is simply that the future will be the same as the past. There are also advantages of providing such projections centrally, as a public good, rather than relying on organizations and individuals to develop their own views independently. These advantages include the fact that this approach can provide a comprehensive, methodical, consistent and transparent set of results. It also benefits from economies of scale.

A key advantage of a well-publicized set of labour market forecasts is that they provide a common and consistent economy-wide overview of skill needs, allowing detailed comparisons across sectors. Typically, this is based on a transparent, specific set of macroeconomic assumptions and economic relationships, affecting the whole economy and its structure. As such, the analysis is grounded in an understanding of the key drivers impinging upon the economy. It serves to act as an objective, economy-wide, explanatory tool to facilitate the examination of the changing pattern of skills demand.

⁵ See the references in European Commission (2008).

This is not to say that there is no place for individual sectors or other interest groups to develop their own tailored forecasts. However, a centrally produced and distributed set of results can help to show how these fit into a broader macroeconomic context, covering all sectors in a consistent, systematic and comparable manner. This is a fundamental objective of developing the sets of projections produced by the BLS in the USA, by CEDEFOP in Europe and by various national governments across the world.

The results should be regarded as indicative of general trends and orders of magnitude, given the assumptions made, rather than precise forecasts of what will necessarily happen. They indicate a likely future, usually based on assumptions of a continuation of past patterns of behaviour and performance. Obviously, if policies and patterns of behaviour are changed then alternative futures might be achieved. The proposed analysis set out here is intended to provide a consistent and systematic benchmark view across the whole region of NET-MED countries, focusing on links between the economy and labour market, that can form the basis for an ongoing debate about the key issue of the place of young people in that future.

There is no simple ‘one size fits all’ solution to trying to anticipate changing skill needs. Reviews of best practice worldwide (see for example Wilson, 2008; Wilson et al., 2004) suggest that various tools and models are needed, focusing on both quantitative and qualitative methods. Models are simplifications of reality, intended to highlight key drivers and relationships that can be used to gain some insights into what the future might look like. Where feasible, quantitative methods are highly recommended as they can provide a sound statistical foundation to any discussions which might otherwise be rather vague and woolly. However, such approaches also have their limitations, and not everything can be measured precisely. More qualitative approaches have advantages where there are difficulties in obtaining firm quantitative data. They also enable use to be made of expert insight and intuition.

The projections produced by the BLS and CEDEFOP are based primarily on a quantitative, economics-based approach. This focuses on sectoral and occupational employment structures, qualifications and general workforce trends (including replacement demand). The approach adopted uses existing official data and well-established models.⁶

Production of the projections requires detailed data on employment. This can raise important issues of confidentiality, as well as statistical reliability, in making such detailed data available in the public domain. Issues of the control of confidential information have become of even greater concern to the governments in recent years with the advance of information and communications technology (ICT) and development of digital data sets.

These matters need to be addressed carefully in order to provide the intended audiences with robust and useful information. Despite these technical and other problems, it is usually possible to develop a range of projections that meet the needs of the government and others for detailed information and intelligence on likely sectoral developments and their implications for skill requirements.

The approach involves the detailed examination of sectoral as well as occupational changes, and their implications for skill requirements at both micro and macro levels. This is based on the use of a variety of

⁶ For the latest results see www.bls.gov/emp/ for BLS and www.cedefop.europa.eu/en/events-and-projects/projects/forecasting-skill-demand-and-supply/skills-forecasts-main-results for CEDEFOP projections.

research methods, ranging from complex econometric modelling to other more qualitative approaches, depending on the objectives of the work and the nature of the basic data available.

The usual approach is to use a detailed multisectoral macroeconomic forecast in combination with an analysis of changing patterns of the demand for and supply of skills. The latter is typically based on data from a labour force survey, although other sources are also used to develop historical measures of the occupational and qualification structure of employment within industries. A combination of econometric methods and judgement is then used to generate projections of these patterns forward.

Analysis of labour supply by age and gender is also usually carried out using econometric methods. These are then further disaggregated by formal qualifications held to obtain measures of the supply of skills using a stock flow model and other techniques. The sensitivity of the projections to variations in the underpinning assumptions on demography and migration, economic activity rates, rate of qualification achievement and unemployment rates is explored.

Full details of the approaches used across the world can be found in Kriechel and Wilson (2014). This covers information on the main data sources and methods used, model structure and content, including econometric analysis and other techniques adopted.

It is important to recognize that in the vast majority of cases covered in the review by Kriechel and Wilson (2014), the economies concerned are those that can be characterized as high income, and that benefit from a relatively stable political and social infrastructure. Applying the same approaches in low and medium-income countries, in which the political and social situation is much more uncertain (such as those included in the UNESCO NET-MED Youth project), will undoubtedly pose significant problems.

From a technical point of view, the main issues are whether or not the basic data to build the models exist, and whether the economic system is stable enough to be modelled using techniques developed in less challenging situations. The second point is obviously linked to the more general political and social context, which is especially uncertain in this group of countries.

Paucity of data and limited capacities to build formal models may be second-order issues compared with the lack of existing effective regional coordination, continuing political turmoil and large differences among countries (including differences in income).

1.3 General, methodological approach

To assess the feasibility of conducting skills forecasting in each of the NET-MED Youth countries, the *Situational Analysis* proceeded as follows.

The national consultants were asked to review and summarize evidence on three broad topics:

- the country-specific context (covering briefly, the economy, labour market, institutions and policy frameworks), focusing especially on existing national policies and programmes aimed at promoting youth employment, transitions to the labour market and skills development, and analysing their effectiveness and impact, and the role of youth organizations in the design of such policies;
- a review of relevant research (focusing especially on research quantifying and anticipating changing skill requirements);

- data availability (with specific reference to developing quantitative skills forecasts).

The national consultants were asked to address these questions based on their reviews of the evidence and their own understanding and judgement about the situations in their countries.

The *Positional Papers* prepared by the national consultants have been used by the external expert team, in conjunction with other material, to inform their review of the national situations regarding existing skills anticipation, institutional frameworks, capacities and tools. In particular, the external experts have used this information to assess the feasibility of conducting a skills forecasting exercise in each country, including setting out recommendations for how this can best be achieved in each case.

A range of possibilities are considered, including developing a bespoke framework for each case, as well as applying a general approach such as that developed on behalf of CEDEFOP for Europe.⁷ The latter might be achieved by extending the country coverage of the existing macroeconomic model and the skills modules used. This requires certain data. A key purpose of the *Positional Papers* is to establish whether or not such data exist.

⁷ For a summary of the CEDEFOP approach see www.cedefop.europa.eu/en/publications/15540.aspx

2. Context

2.1 Introduction

This chapter provides an overview of the overall economic, political and social context in NET-MED Youth countries, highlighting the main expected challenges and opportunities, and focusing especially on issues that are the focus of the NET-MED Youth project. It compares and contrasts the situation in all of the countries involved.

It begins with an overview of the economic situation (including some reference to broader political and social issues). It then focuses on the labour market, highlighting key characteristics, and drawing out both similarities and contrasts with Europe. This is followed by discussion of some of the characteristics, effectiveness and impact of youth transition policies in the NET-MED Youth countries. The chapter concludes with an assessment of the future challenges and opportunities in the labour market, with special reference to young people.

2.2 Characterization of the NET-MED Youth economies

Economic systems and political context

This part of the world has been subjected to enormous upheaval in recent years. The so-called ‘Arab Spring’ is just one recent example of how this broad region’s political situation is continuing to evolve. Over the past century, national borders have often been redrawn and political power has changed hands, including a shift away from colonialism. The latter has left a cross-border heritage, with some common features (including administrative and legal structures), and many scars (including disputed borders and religious divides). As a result, there are many continuing military conflicts both within and across international borders.

The *Positional Papers* emphasize that sociocultural differences, often linked to religion, strongly influence the role of women in the labour market. They also highlight the continuing search for a compromise between the aspirations for democracy and the religious views of large sections of the populations.

All of this has been further compounded by general uncertainties caused by the global financial crisis in 2008 and its aftermath, including most recently the collapse in oil prices.

Structure of the economy

The NET-MED Youth countries have tended towards becoming more market-oriented, open economies. However, many countries remain highly dependent on state and foreign investment, and on remittances (including aid). State intervention in the running of the economy is still significant in many cases.

In many ways the NET-MED Youth countries present a very diverse set of experiences, because of their different political situations. They are all unique in some respects, but there are many common trends, patterns and themes.

The *Positional Papers* reveal the following common patterns:

- Historically there has been strong inward investment and significant growth in gross domestic product (GDP) for most countries over the past five decades and more.

- Given the political and other disruptions (especially the various wars and other upheavals) most countries have experienced remarkably strong GDP growth in recent years.
- Consumer expenditure is often the key driver of economic growth.
- Many countries are continuing to run large trade and public sector deficits, which are probably not sustainable long-term. Much of the economy is strongly dependent on inward investment, aid and remittances.⁸
- Despite often quite high rates of investment as a share of GDP, sufficient jobs have not been generated to employ all those in the workforce. (As noted below, many authors observed a trend to ‘jobless’ growth in recent years.)
- There are huge flows of goods, services and people across national borders.
- The vast majority of enterprises are micro sized, and the informal economy remains very significant.
- The population is growing rapidly.
- Young people account for a large proportion of the population growth.
- The population has also been engaged in a rural–urban shift as dependence on agriculture has declined, typically in favour of services.
- The biggest problem involves the demand for labour rather than its supply.

Structure of economy by industry (output and employment)

There have been major structural changes, with technological change and globalization dramatically altering the structure of economic activity by sector. In all cases this involves a move away from a dependence on agriculture towards services. This in turn has been associated with a big shift in economic activity and population from rural to urban areas.

Agriculture is now much less important, although it remains a significant employer in many countries (including Morocco). Services both private and public now account for the majority of economic activity. Services includes ‘trade’, tourism and public services.

Manufacturing has also evolved. In Tunisia, for example, there has been a shift from textiles towards electronics, electrical and engineering (with a gradual move to higher value-added industrial sectors, including more creative sectors). The chemicals industry (particularly phosphates) is also of great importance in that country.

Significance of micro enterprises and of the informal economy

It is clear that in most countries the informal economy accounts for a significant part of economic activity. There are many ways used to define and measure the informal economy, but in most cases countries seem to adopt the standard definitions used by the International Labour Organization (ILO) (see Hussmans, n.d.). The ILO makes a distinction between the *informal sector* and *informal employment*. The former is

⁸ In Lebanon this has been exacerbated by monetary policy which has led to a huge appreciation in the exchange rate, inhibiting exports and preventing expansion.

defined in terms of characteristics of the production units (enterprises⁹) in which the activities take place (enterprise approach), whereas the latter is defined in terms of the characteristics of the persons involved or of their jobs (labour approach).¹⁰

The possibilities and limitations of labour force surveys as a source of data on employment in the informal sector and informal employment are discussed by the ILO. They argue that in spite of those limitations, they can provide a useful measure of such activity. This is the approach adopted in most of the NET-MED Youth countries. For example, in Jordan the statistical agency is currently working on enhancing labour surveys to incorporate questions that improve the measurement of the informal sector, while in Algeria the National Office of Statistics has started presenting results from its employment survey when it considers the informal economy.

The *Country Appendices* provide a brief description of the efforts in each of the NET-MED Youth countries to measure the informal economy, including how often these estimates are updated. This includes a summary of the main findings on the scale and structure of the informal economy, and how it interacts with the formal economy.

In most NET-MED Youth countries much economic activity is concentrated in micro enterprises, often unregulated and outside the reach of the government or state in terms of measurement and tax collection. The main exception is Israel, which is regarded as more similar in economic structure to European and Organisation for Economic Co-operation and Development (OECD) countries.

Most countries have made some attempt to measure this kind of activity, including use of household surveys such as the European Union (EU) LFS. However, there are many people who adopt self-employment as a 'coping strategy' who do not appear in such statistics, as well as others who employ family members and friends in an informal arrangement. The vast majority of such enterprises do not demand highly skilled workers. This contributes to the overall lack of demand for labour.

In many NET-MED Youth countries, the informal economy persists, alongside the illegal economy. In most cases it involves legal goods and transactions, carried out just under the radar of the state. 'Informal' employment often tends to mirror fluctuations in public employment, acting as a kind of safety valve rather than a productive sector. For example, in Egypt and Jordan informal private wage employment increases when government jobs decline, and vice versa.

⁹ The term 'enterprise' is used by the ILO in a broad sense, referring to any unit engaged in the production of goods or services for sale or barter. It covers not only production units that employ hired labour, but also production units that are owned and operated by single individuals working on their own account as self-employed persons, either alone or with the help of unpaid family members. In some countries (such as Lebanon) the term 'establishments' is used instead of enterprises (the convention in the United Kingdom is that an enterprise may carry out its activities at one or more establishments).

¹⁰ The concept of informal employment recognizes the growing 'informalization' of employment, often linked to the globalization process, in which competitive pressure results in employers resorting to mixed-mode labour arrangements. In these, observance (or not) of labour regulations for some workers is combined with the use of non-standard, atypical, alternative, irregular, precarious and similar types of labour, or various forms of subcontracting.

The significance of the informal economy reflects the lack of development in certain parts of these economies. In most countries a very large percentage of establishments or enterprises have fewer than five employees (for instance, in Lebanon the proportion is 90 per cent).

2.3 Characterization of the labour market

Labour supply

Demography

Despite continuing upheaval, and political as well as economic uncertainties, the population has continued to grow quite rapidly in most of these countries. This is partly the result of natural growth but also in some cases reflects inward migration, including significant flows of refugees across national borders.¹¹ In many cases the period of rapid growth appears to be coming to an end, and in some cases there are indications of an ageing population. However, in many of these countries the average age of the population is relatively young (as it is in Palestine). For example, in Egypt and Morocco nearly half the population is under 35 years old and in Jordan nearly 70 per cent are below the age of 30.

Migration flows are often very significant. In Lebanon, for example, outward migration to countries in the Gulf and farther afield represent a significant drain on the labour market. Cross-border flows involving refugees are also a key feature in many cases. This includes both Lebanon and Jordan, where the labour market is affected by the influx of refugees from Syria, and other spillovers from the Syrian and Iraqi conflicts.

The shift of economic activity from rural to urban areas has been strongly associated with the changing sectoral employment structure.

Labour market participation

The size of the working-age population, the labour force and employment have all increased, but the labour market participation rates remain low in many NET-MED Youth countries. This is expected to improve as more women are becoming educated and emancipated, but sociocultural norms often work against women taking an active part in the formal economy. For many women education seems as much about the marriage market as the labour market.

In most cases there has also been a great improvement in the education of the population. During the 1960s illiteracy was a huge problem in parts of many of these countries, especially in rural areas. The situation has improved significantly. In Lebanon, for example, roughly 80 per cent of young people now attend secondary school, and in Egypt enrolment rates have greatly improved, to the extent that there is now almost universal net enrolment at the primary level (95 per cent) and 82 per cent enrolment at the secondary level.

Improvements in education at higher levels have been significant in many countries, with an increasing proportion of the workforce taking part in tertiary education and obtaining degree-level qualifications. The proportion of graduates in the working-age population has grown very significantly in all countries.

¹¹ Syrian refugees in Lebanon amount to over 25 per cent of the resident population (Hamdan, (2014).

However, in many countries job opportunities do not match the expectations of the growing proportion of highly educated young individuals, and large numbers choose to emigrate. For example, in Egypt and Jordan the Gulf economies are a popular destination for educated workers. In Lebanon, it could be argued that the main export is educated labour. People from middle-income families go abroad at a young age to Dubai, Qatar, Africa, Europe, the USA and other destinations. This is seen as part of an outward-looking view of the world. Middle-income families in particular invest heavily in education, and often encourage their young people to leave the country to get jobs elsewhere. The Lebanese diaspora is now huge, with possibly 8 million Lebanese living abroad but retaining close ties to their families in Lebanon. The economic and other systems in that country are largely propped up by external remittances, from the Gulf, Europe and the USA. In other cases, such as Palestine, aid flows provide a source of income from overseas.

In contrast there is also inward migration in several countries, such as Lebanon and Jordan, from individuals moving into work in low-skilled areas which the domestic population are not happy to undertake. This includes significant numbers of refugees imported (with few skills) from neighbours such as Syria.

Demand for labour and skills

Defining demand

Note that throughout this discussion, the term ‘demand for skills’ is used to refer to the demand for educated workers and skills by employers. The choice by individuals to invest in education is regarded as a phenomenon of the supply side¹² rather than the demand side.

Major structural changes

The major structural changes going on in the economy have been reflected by developments in the labour market. Since the 1960s employment has shifted (in most NET-MED Youth countries), falling dramatically in agriculture, and rising in services. As a result:

- Agriculture is now much less important (there has been a big shift from rural to urban areas as a result) although it remains a major employer in some countries (such as Morocco).
- Manufacturing has also evolved, reflecting globalization and patterns of inward investment, with:
 - shifts away from traditional areas such as textiles and apparel
 - movements towards other parts of manufacturing, dependent on the patterns of inward investment but tending towards less-skilled work and lower-value-added areas.
- The general shift in economic activity towards services has led to a similar shift towards jobs in this part of the economy. Services (including distribution/trade, tourism, education, health and the public sector) now account for the bulk of jobs in all NET-MED Youth countries.

Despite the increased number of jobs in these areas, there is generally insufficient labour demand to maintain full employment, with particular problems regarding inadequate demand for more skilled labour (those who have successfully completed tertiary education). In several countries such as Jordan and Egypt,

¹² In some discussions the choice to invest in different types of education is referred to as ‘demand’. While this is perfectly valid, the discussion in this report refers to this as part of the supply of educated labour. That is, *supply* refers to numbers of educated people graduating from the system and making themselves available for work.

the public sector has accounted for a large proportion of jobs (especially for women), and is considered a more prestigious career choice than the private sector for educated workers. However, budgetary constraints will restrict the public sector's ability in future to absorb a large share of the workforce, and the private sector is too weak to absorb the unemployed young people. Israel, however, is a different case. There the supply of jobs in the ICT sector is higher than the supply of highly skilled science graduates. Israel therefore suffers from a widening wage gap between the traditional sectors and the fast-growing ICT sector. In most countries the demand for skilled workers has simply not increased fast enough to keep pace with the rising supply of better-qualified labour.

Mismatch

The supply of skills, especially at highest level, has outpaced the growth of the productive system. The gap has been widening in many cases. Globalization and technological change are resulting in job losses in many sectors.

The apparent paradox of high unemployment for the best qualified

This results in an apparent paradox compared with the experience in many other countries outside the NET-MED area (such as in Europe). Generally speaking, the experience in Europe is that those who are better qualified are also better able to obtain and retain jobs. As a consequence, the more highly qualified experience lower probabilities of being unemployed than less well-qualified people.

In most NET-MED Youth countries (with the possible exception of Israel), there is an apparent paradox of the highest unemployment rates being observed for the most educated. At the same time employers are complaining about a lack of certain skills. High unemployment for the best qualified is observed alongside employers complaining of skill shortages.

The explanations offered in the *Positional Papers* for this are various. For example, in Morocco and Palestine, educational attainment is high, but the supply of good-quality jobs for highly qualified workers is limited. Therefore, unemployment levels are much higher among highly skilled workers (those with bachelor's degrees and higher) than for less-qualified workers. In most countries, the main underlying factor is the low demand for skilled labour and the preference of employers for low-waged and low-skilled labour, given the types of technology used by most industries. The low quality and informality of the jobs created is below the expectations of young well-educated people. As long as they can afford it, they would rather wait and queue up for formal jobs, which are often public sector jobs, or emigrate. Those young persons whose family are rich enough and willing to support them can afford to spend longer in searching for the right position. It is possible that some young people report to the national employment services that they are unemployed so that they can benefit from active labour market policy (ALMP) opportunities and subsidies for the unemployed. They might hide the fact that they do have employment in the informal market or within their own family. However, this phenomenon is not well documented.

The experience in Lebanon suggests that again the economy, which includes a significant informal element, is unable to generate jobs that are attractive to young well-qualified graduates. Of course, the education-level effect is compounded by the age effect (a younger, less experienced person is always less likely to be recruited). This is reinforced by the gender issue: the rate of unemployment is much higher for young women. These factors have not been explored separately in the analysis conducted in most countries. It

would be informative to explore compositional effects in some countries. Young people generally have the highest unemployment rates and are also by far the best qualified. Therefore, unemployment rates over all ages are higher for the best qualified (all other factors being equal). A decomposition analysis to see whether the hierarchy of unemployment rates by qualification still applies when age is taken into account would be useful.

The fact that in most countries the great majority of enterprises are very small, and usually do not require highly skilled workers, means that university graduates tend to be most afflicted by unemployment. The problem is as much a lack of overall demand as a mismatch in skills between those available and those in demand.

It is a moot point whether small countries such as Lebanon and Palestine should expect to see a balance in supply and demand for labour and skills within their countries. In Europe, for example, there are many small countries, and some regions in the larger countries have a greater population and geographical area than the small countries have overall. There are significant imbalances in supply and demand in individual countries and regions, with people being encouraged to move across borders to find suitable employment.

As previously mentioned, Israel suffers from a rather different problem. Here the main concern is excess demand for skilled labour has led to skill shortages. This is creating a widening wage gap between the traditional production sectors and the ICT sector. (In Israel this is described as the *dual economy*.) Many highly skilled workers are close to retirement age, and when they leave the labour market it will substantially exacerbate the current skills shortages. Israel relies heavily on high-tech industries, including information technology and telecommunications. The demand for highly skilled workers in high-tech industries is growing, and there is a shortage of workers in many high-tech professions such as software engineering, web design and computer programming. This is the result of a shortage of university science graduates, which in turn stems from the small number of high-school students who major in mathematics. The Arab-Israeli and Ultra-Orthodox populations, both faster-growing than the national average, have lower than average economic activity rates. There is also less vocational training than in many other high-income countries. The vocational training situation in Israel is regarded as inadequate, with some evidence of declining funding in this area.

2.4 The need for a new initiative

The NET-MED Youth countries are facing a period of great uncertainty and change. In this context, the need for better labour market information and advice that can help to inform young people in particular about the situation they are likely to face seems to be well accepted.

Based on the experience of other countries, some form of regular qualitative labour market and skills assessment and forecasting would appear to be warranted. Although this cannot provide a panacea, it is one plank in making a bridge between the current position of mismatch and frustration, and a better future.

Section 3 explores the existing research evidence on such issues in the NET-MED Youth countries, and how this might be used as a starting point for any new work. First, however, Section 2.5 provides an overview of the key stakeholders in each country that need to be part of any such initiative.

Table 2.1 Structure of the economy by country

Country	Algeria	Egypt	Israel	Jordan	Lebanon	Libya	Morocco	Palestine	Tunisia
Type of economic system (market (M), planned (P), mixed (X))	X	X	M	M	M		X	M	X
Structure of economy (significance of public sector: H = high M=medium)	H	H	M	H	H		H	H	H
GDP growth (% p.a.)	Some	2 (2011–13)	2.2 (2014)	2-3 (2010–13)	8		4.6	1.9 ¹³	5
Structure of economy by industry: share of employment (by % or proportion)									
Agriculture	14.0	15	2	3	6.3		39.3	11.0	16.0
Industry/manufacturing	Bigger	39	11	19	12.1		20.7 ¹⁴	12.2 ¹⁵	33.0
Services (incl. trade and tourism)	Smaller	46	48.0 (private)	78	72.6.		39.9	55.3	61
Public sector	>30.0	16	32.0	40			8.9	23.0	22.0
Domination by micro size of enterprises	Y	Y	N?	Y	Y		Y	Y	Y

¹³ MAS, Economic & Social Monitor, 38. GDP growth from 2012–13 by constant 2004 prices.

¹⁴ Includes construction and public works.

¹⁵ Quarries and manufacturing.

Country	Algeria	Egypt	Israel	Jordan	Lebanon	Libya	Morocco	Palestine	Tunisia
Big shift to urban from rural over recent decades	Y	Y	N	Y	Y?		Y	Y	Y
Significance of the informal economy(cf Table 2.2)	H	H	L	H	H		H	H	H

Table 2.2 Characteristics of the labour market by country

Country	Algeria	Egypt	Israel	Jordan	Lebanon	Libya	Morocco	Palestine	Tunisia
Population (million)	38	83	8	6.5	4 ¹⁶		32.8	4.5 ¹⁷	11
Rate of population growth (%)	+	++	+ (high 1.7%)	2.2 (2004-13)	+		+	2.9%	1.1%
Participation rates	43.2		63.7	37	44.0		48.3 ¹⁸	43.6	<50.0 (p.r)
Males (%)	69.5	80.0	69.0	60	68.0		73	69.3 ¹⁹	70
Females (%)	16.6	23.0	58.0	13	20.0		25.1	17.3	25
Mismatch									
Unemployment rate (%)	9.8	8.7	6.2	13	6.4		9.2	23.4	15.2
Males (%)	8.3	4.2	6.2	10	5.0		9.1	20.6	13.9
Females (%)	16.3	23.7	6.2	20	10.4		9.6	35.0	23.3
Young people(%)	24.8	Much higher	9.3 (18–24); 7.1 (25–34)	37 (15–19) 31 (19–24)	Much higher		19.3 (15–24)	41.0 (15–24)	

¹⁶ Excluding over 1 million Syrian refugees.

¹⁷ PCBS, n.d.a.

¹⁸ Activity rate for people aged 15 and over.

¹⁹ PCBS, n.d.b.

2.5 Key stakeholders

The authors of the *Positional Papers* were requested to list the key stakeholders in each of their countries and to try to identify those organizations that would be critical in developing a skills forecasting system. These include both national statistical agencies (NSAs) responsible for the collection and publication of key economic and labour market data, and government departments, agencies and other organizations responsible for the relevant areas (and in particular any research and modelling work). The key conclusions for each country are now set out in turn. *Table 2.3* summarizes the key potential stakeholders for all countries. *Table 2.4* provides a brief overview of some key employment and related policies in the various countries, again based on the *Positional Papers*.

Algeria

This is the full list of stakeholders as presented in the country appendix. The National Statistical Office is a key partner which needs to be involved for reasons of data accessibility. The Ministry of Labour and Social Security will also be an important participant as it is one of the main labour market institutions in Algeria and its influence could also be useful with the National Statistical Office.

- Ministry of Labour and Social Security
- Ministry of Solidarity and Family
- Ministry of Youth
- Confédération Algérienne Du Patronat (CAP)
- La Confédération Générale des Entreprises Algériennes (CGEA)
- Union générale des travailleurs Algériens (UGTA)
- Forum des chefs d'entreprises (FCE)
- Cercle d'Action et de Reflexion autour de l'Entreprise (CARE)
- Notre Algérie Bâtie sur de Nouvelles Idées (NABNI)
- Savoir et vouloir entreprendre (SEVE)
- National Statistics Office (NSO)
- Agence Nationale de Développement de l'Investissement (ANDI)
- National Economic and Social Council.

Egypt

This is the full list of stakeholders as presented in the country appendix. The most relevant institutions with which to partner to develop capacity in quantitative skills analysis are the Ministry of Planning and/or the Information and Decision Support Center, which hosts the Egyptian Education, Training and Employment Observatory. Undoubtedly the best way to secure access to the required data for the NET-MED Youth project in Egypt is to gain the active support of Ministry of Planning and Central Agency for Public Mobilization and Statistics.

- Central Agency for Public Mobilization and Statistics (CAPMAS)
- Central Bank of Egypt (CBE)
- Economic Research Forum (ERF)
- Egyptian Education, Training and Employment Observatory (EETEO) hosted by the Information and Decision Support Center (IDSC)
- Ministry of Education and Ministry of Higher Education

- Ministry of Finance (MOF)
- Ministry of Manpower and Migration (MoMM)
- Ministry of Planning (MOP)
- National Training Fund
- Supreme Council for Human Resource Development (SCHRD).

Israel

In Israel, the Central Bureau of Statistics collects and stores data. The main government stakeholders who should be interested in collaborating on this project are the Ministry of Economy, which is responsible for creating jobs, development of human capital and the education system, and technology training; the Ministry of Education, which is responsible for programmes to increase the volume of vocational training at secondary level; and the Ministry of Finance, which is responsible for budget allocation during annual and long-term budgeting. Finally, the Manufacturers Associations of Israel might be a potential partner because it represents a substantial number of firms: private, kibbutz and government industries.

Jordan

This is the full list of stakeholders as presented in the country appendix. Whether or not UNESCO chooses to build directly on the existing Jordan Occupational Projection Model (JOPMOD) or to develop a new stand-alone modelling tool, the active support of the Ministry of Planning and International Cooperation (MoPIC) and the Department of Statistics will be required to secure access to the required data and to draw on MoPIC's existing expertise in quantified analysis of employment and skills. MoPIC is therefore the key partner, and other relevant institutions with which to engage might be the Employment, Technical and Vocational Education Council, the National Center for Human Resources Development, and the Ministry of Labour.

- Al Manar
- Al Quds College (Amman)
- All Jordan Youth Commission (AJYC)
- Central Bank
- Conference Board of Canada
- Department of Statistics (DoS)
- Employment, Technical and Vocational Education Council
- Higher Council for Youth
- Leaders of Tomorrow
- Ministry of Finance (MoF)
- Ministry of Labour (MoL)
- Ministry of Planning and International Cooperation (MoPIC)
- National Center for Human Resources Development (NCHRD)
- Princess Basma Youth Resource Centre (PBYRC)
- Vocational Training Corporation (VTC)

Lebanon

In Lebanon the key stakeholders are the Central Administration of Statistics, which is primarily responsible for data, and the Ministry of labour, which is the main government department responsible for policies in the fields of labour and social affairs. The ILO and World Bank have both been involved in macro modelling and related work. The Consultation and Research Institute has also done significant work in economic modelling, developing a labour market information system for Lebanon, and measuring the informal economy.

- Ministry of Labour (MOL)
- Ministry of Finance (MOF)
- National Employment Office (NEO)
- National Social Security Fund (NSSF)
- Public Employment Service (PES) project
- Central Administration of Statistics (CAS)
- Consultation and Research Institute (CRI)
- NEW (New Entrants to Work programme assisted by the World Bank)

Morocco

This is the full list of stakeholders as presented in the country appendix. The Haut Commissariat au Plan would be a useful partner, even though data accessibility in Morocco does not seem to be too much of an issue. In terms of government agencies and departments, the *Ministère de l'Emploi et des Affaires Sociales* and *Agence Nationale de Promotion de l'Emploi et des Compétences* are the two most closely linked to the labour market and thus should be on board with the project from its inception.

- Haut Commissariat au Plan (HCP)
- Bank Al Maghrib
- *Ministère de l'Emploi et des Affaires Sociales*
- Caisse Nationale de Sécurité Sociale (CNSS)
- *Agence Nationale de Promotion de l'Emploi et des Compétences (ANAPEC)*
- Département de la formation professionnelle, Office de la formation professionnelle et de la promotion du travail (OFPPT)

Palestine

In Palestine, the main government stakeholders who should be interested in collaborating on this project are the Palestinian Central Bureau of Statistics (PCBS), which is the official body for data collection, and is also in charge of developing and using forecasting models; the Ministry of Labour, which prepares and implements labour market policies and vocational training; and the Ministry of Education and Higher Education, which collects data on all education levels, and prepares and implements education policy and planning. International stakeholders such as the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ, the German international development agency) and the ILO might also be involved, as they already assist in TVET strategy preparation and implementation in Palestine.

- **Palestinian** Central Bureau of Statistics (PCBS)
- Ministry of Labour

- Ministry of Education and Higher Education
- Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)
- **ILO**

Tunisia

In Tunisia the key stakeholders are the Institut National de la Statistique and the Institut Tunisien de la Compétitivité et des Etudes Quantitatives (as data providers and gatekeepers) and L'Observatoire National de l'Emploi et des Qualifications (which is the main government agency set up by the Ministry of Labour and Vocational Training to provide a national observatory of employment and skills).

- Institut Tunisien de la Compétitivité et des Etudes Quantitatives (ITCEQ)
- L'Observatoire National de l'Emploi et des Qualifications (ONEQ)
- Ministry of Labour and Vocational Training (MLVT)
- Observatoire National de la Jeunesse (ONJ)
- Centre de Recherches et d'Etudes Sociales (CRES)
- Central Bank of Tunisia (BCT)
- Institut National de la Statistique (INS)
- ANETI national employment and self-employment agency

Table 2.3 Summary of key stakeholders by country

Country	stakeholder	role	notes
Algeria	Ministry of Labour and Social Security	Coordinates national employment policies and social security schemes	Main player on labour market
	Ministry of Solidarity and Family	Coordinates national policy against poverty	Second player fighting poverty
	Ministry of Youth	Coordinates youth national policy	Main player for youth rights
	Confédération Algérienne Du Patronat La Confédération Générale des Entreprises Algériennes	Promote employers' rights	Only two employers' organizations are involved in social dialogue
	Union générale des travailleurs Algériens	Promote workers' rights	Only one workers' union is involved in social dialogue
	FCE, CARE, NABNI, SEVE	Promote civil society rights	Think tanks for employers, female entrepreneurs, youth unemployment association
	National Statistics Office	Production and dissemination of statistics	Produce LFS and National Accounts
	Agence Nationale de Développement de l'Investissement	Promotion of investment (national/ foreign)	Main government service for investment
	Conseil National Economique & Social	Promote social dialogue and conduct national audit	Under the presidency

Country	stakeholder	role	notes
Egypt	Ministry of Manpower and Migration	Responsible for the provision of labour market information and employment services	307 employment offices spread across all governorates; however, lacks trained staff and an efficient information system
	Ministry of Planning	Macroeconomic forecasting; economic statistics	
Israel	Ministry of Economy	Responsible for creating jobs, development of human capital, education system and technology training	
	National Economic Council	Serves as a resource for the prime minister on economic matters	
	The Central Bureau of Statistics	Publishes regular long-term population forecasts; labour force survey; a job vacancy survey (JVS)	
	Ministry of Education	Responsible for programmes to increase the volume of vocational training at secondary level,	
	Manufacturers associations of Israel	Representative body of all industrial sectors in Israel: private, public, kibbutz and government industries	
	Ministry of Finance	Budget allocation, annual and long-term budget planning	
	Civil society organizations	Creating local youth leaderships, initiating and suggesting programmes to the government	

Country	stakeholder	role	notes
Jordan	Ministry of Planning and International Cooperation	Responsibility for Department of Statistics, keeper, custodian and 'processor' of various sets of national data	
	Department of Statistics	Overseen by Ministry of Planning and International Cooperation	
	Ministry of Labour	Overall direct responsibility for the Social Security Institution, the E-TVET Fund, the National Employment Electronic System (NEES – Electronic Employment Portal); Vocational Training Corporation and the National Training and Employment Corporation	
	Vocational Training Corporation	Responsible for lifelong continuous learning, both vocational preparation programmes at all professional levels, and upgrading competency programmes to raise competency of workers on the job in the marketplace	
	National Center for Human Resources Development	Enhances and promotes human resources development and improves relevance of outputs of education and training programmes to labour market needs; evaluation of reform programmes in education.	
Lebanon	Ministry of labour	Prepares, coordinates and implements policies in the fields of labour and social affairs	

Country	stakeholder	role	notes
	Ministry of Finance	Responsible for macroeconomic and financial affairs; has commissioned previous modelling work in collaboration with the World Bank	
	National Employment Office	Responsible for employment policies	
	National Social Security Fund	Responsible for social security legislation and implementation	
	Public Employment Service project	Under auspices of ILO; includes labour market information system project (LMIS)	
	Central Administration of Statistics		
	NEW (New Entrants to Work) programme assisted by World Bank		
	Consultation and Research Institute	Independent research consultancy that has done work on developing an LMIS for Lebanon and on CGE modelling	
Morocco	Haut Commissariat au Plan	Economic, demographic and social statistical information, and responsible for the development of national accounts	
	Bank Al Maghrib	Monetary and financial indicators	
	Ministère de l'Emploi et des Affaires Sociales	Information on the social situation	
	Caisse Nationale de Sécurité Sociale	Information on the employment and payroll in companies in the organized private sector	

Country	stakeholder	role	notes
	Agence Nationale de Promotion de l'Emploi et des Compétences	Information on job seekers, beneficiaries of measures of employment, job offers, etc.	
	Département de la formation professionnelle, Office de la formation professionnelle et de la promotion du travail	Information on trainees and recipients of vocational training.	
Palestine	Palestine Central Bureau of statistics	Conducts surveys on population, labour force, GDP and its sectoral composition, foreign trade, macroeconomic forecasts	
	Ministry of Labor	Prepares and implements labour policies, manages labor market information system	
	Ministry of Education and Higher Education	Collects and publishes data on enrolment, and prepares and implements education and TVET policies	
	Ministry of National Economy	Prepares and implements economic policies	
Tunisia			

Country	stakeholder	role	notes
	Institut Tunisien de la Compétitivité et des Etudes Quantitatives	Created in the late 1960s, it has produced various economic models (partial equilibrium, general equilibrium, CGEs, econometric)	
	L'Observatoire National de l'Emploi et des Qualifications	Set up by the Ministry of Labour and Vocational Training to provide a national observatory of employment and skills	
	Observatoire National de la Jeunesse and Centre de Recherches et d'Etudes Sociales	Publish occasional documents on economic and labour market analysis	
	Institut National de la Statistique	The national statistics institution	
	ONC (affiliate of Institut National de la Statistique)	Also produces and publishes data analysis and trends on most of the relevant economic indicators. Their most regular publications are on population and labour indicators, economic growth based on national accounting, inflation and foreign trade.	
	Central Bank of Tunisia	Regularly produces reports mainly on the financial situation, foreign trade and monetary policy.	
	ANETI national employment and self-employment agency	In charge of most ALMPs as well as business start-ups (but not for TVET)	

Notes: Based on information provided by *Positional Papers*. The table summarizes for each country the main stakeholders by category (ministries and public structures; social and sectoral partners; civil society organizations, including youth organizations) involved in employment policy-making and governance.

Table 2.4 Policy framework on employment by country

Country	Policy	Role	Notes
Algeria	Assessment of 2010–14 Plan ongoing New National Employment Policies (2015–19) High probability to maintain same goals & policies adjusted to the new economic and financial agenda	Main role will remain to the Ministry of Labour and Social Security Ministry of Solidarity will maintain its combat against poverty	No change is expected for ALMPs No change expected
Egypt	Ministry of Manpower and Migration is responsible for labour market information and employment services. However, the quality of labour market information and of employment services is quite low. The labour market is very flexible in the private sector which is dominated by the informal economy and by very small firms. The minimum and maximum wages are only applied in the private sector.		
Israel	There is no clear framework, each ministry and government agency deals with employment encouragement and training on an ad hoc basis. The minister of economy focuses on various vocational training programmes for special populations.		

The Israeli Employment Service is responsible for mediation between job seekers and employers

Enforcement of labour laws is inadequate; enforcement focuses on minimum wage and hours of work and rest.

Comprehensive pension insurance law: as of 1 January 2008, all employers are obligated to provide their employees with a pension fund.

Jordan

Not covered in detail in the *Positional Paper*

Lebanon

Not covered in detail in the *Positional Paper*

The Syrian refugee crisis clearly imposes enormous strains

Morocco

Labour regulation in the private sector is governed by Law No. 65-99, which established the Labour Code in force since 2004

The institutional framework consists of:

- Administrative bodies: Ministry of Employment and Social Affairs whose areas of intervention are the social protection of workers, labour law and employment promotion;
- Bodies of implementation: ANAPEC for active employment programmes and public intermediation in the labour market, private recruitment agencies for private intermediation, OFPPT for public vocational training, etc.
- Institutional consultative bodies (tripartite arrangement): national and regional councils of employment, working medical advice and

prevention of occupational hazards, Board of Mutuality, Council of the Collective Bargaining; specialized tripartite commission on temporary employment, regional committees to improve employability, etc.

- Constitutional bodies (parliamentary committees, Economic, Social and Environmental Council, National Council for Human Rights, etc.)

Palestine

Not covered in detail in the *Positional Paper*

Tunisia

Labour market institutions are organized according to the French pattern, quite heavily regulated in the formal sector.

Regulations address wage determination and negotiation, social security, and hiring and firing.

Minimal wage for all sectors, except agriculture does not seem to be a major source of rigidity.

Wages negotiated by employers and unions and government separately for the private sector and the public sector (real wages are quite flexible).

Social security and health insurance are legally compulsory for all employees but in practice not yet fully for the private sector (80 per cent of the total employed labour force covered) and there is no unemployment insurance

Hiring and firing requirements are still quite restrictive, but some flexibility in recent years including fixed term contracts

Tunisia has also deployed a range of active labour market policies most of which are aimed at young people, especially graduates from tertiary education institutions (see *Country Appendix* Table A8.10 for details)

3. Research evidence

3.1 Introduction

The focus in this chapter shifts to a review and assessment of available research evidence, especially:

- research on economic and labour market forecasting
- any other relevant research on the labour market for young people.

The chapter begins with a review of work on macroeconomic and other model-based labour market forecasting. This is followed by a review of more general research that has involved a detailed quantitative analysis of labour market trends (past and future).

The significance of the informal economy (as measured by both the informal sector and informal employment) is crucial in most of the NET-MED countries. The final part of this chapter reviews the research evidence on its scale, structure and relationship with the formal economy.

The Country Appendices

The individual *Country Appendices* (A1–A8) present an overview for each country of:

- what research has been done using quantified models for macroeconomic and sectoral forecasting
- who does this research (such as a central bank, academic institution or ministry)
- a description of the model and methods used:
 - what type of model is used: CGE, econometric, other?
 - what (and how many) industry sectors are included in the model
 - what are the outputs of the model, for example:
 - GDP, inflation, employment, unemployment;
 - labour supply: migration; population; participation rates
 - skill levels (occupations, qualifications) of different groups of the population
 - demand: jobs by sector, gender, occupation, qualification
 - imbalances: unemployment and mismatches by skill level
 - to what year does the forecast go?
 - how often are the forecasts updated?
- who uses the research/evidence, and for what purpose?
- an assessment of the quality of the research publications/evidence
- a brief review of any other methods used for forecasting: surveys; Delphi; scenario development.

The *Country Appendices* draw heavily on the *Positional Papers* produced by each of the national consultants.²⁰

3.2 Macroeconomic and other model-based labour market forecasting

In most countries some economic modelling and forecasting work exists. For example, in Tunisia there have been around twelve exercises since the 1960s, but here (as elsewhere) these have rarely been focused on forecasting and even less on skills.

In some countries, for example Lebanon, this work has been led by international organizations such as the World Bank and the ILO. Such international organizations have led initiatives on surveys and related work,

²⁰ In many cases the text from the *Positional Papers* is used with little or no modification in the *Country Appendices*.

as well as more general efforts to enhance the capacity to do such work linked to the overall aim of encouraging economic development.

Such modelling work is rarely very detailed. The main emphasis is on high-level macroeconomic and financial policy and analysis. As a result, in most cases few if any sectors are distinguished and generally there is very little emphasis on occupations or skills. (One significant exception is Jordan, which has developed a CGE-based model that in many respects mirrors the CEDEFOP E3ME-based approach.)

Generally, even when some modelling work has been undertaken it is not very up to date. Access to the models is also not straightforward. Few are in the public domain.

Generally, there is little or no evidence of qualitative methods, although the Algerian national consultant indicated that some work using Delphi techniques had been undertaken in that country.

3.3 Other detailed quantitative analysis of labour market trends (past and future)

The individual *Country Appendices* (A1–A8) also present an overview for each country of other research and detailed analysis of labour market trends carried out using quantitative methods, again focusing on who does this research and how it is used.

In a few countries (including Tunisia) there has been some ad hoc work on qualification analysis, looking at future jobs requirements and mismatches. These include analysis of qualifications, for example the need for engineering qualifications in future jobs. In some countries there have been some academic studies on youth migration. In others there have been attempts from time to time to measure the scale and nature of the informal economy, but such work is often not very up to date.

Such work is rarely part of a comprehensive LMIS, although this remains an ambition in many countries (including Lebanon).

3.4 Analysis of the informal economy

The national consultants were also asked to consider the significance of the informal economy in each of their countries. Their views are reflected in the *Positional Papers* and in the *Country Appendices*.

Most countries have adopted a definition of the informal economy along the general lines suggested by the ILO. This includes recognition of both:

- an informal sector, dominated by micro enterprises and establishments, largely operating outside the scope of regulatory authorities
- informal employment, precarious jobs sometimes based on self-employment, which have no security, poor pay and few if any non-wage benefits.

Some work has been conducted in most countries to establish the size, structure and characteristics of the informal economy, thus defined. Surveys of households and enterprises or establishments²¹ have been conducted which suggest that in most cases the informal economy is very significant (typically accounting for around 40 per cent of total employment). A Palestine Central Bureau of Statistics (PCBS) mixed household-enterprise survey conducted in 2008 found that 60 per cent of total employed persons in Palestine worked in the informal sector, while informal sector projects contributed just 9.1 per cent of GDP.

²¹ The terms are often used interchangeably, ignoring the distinction often made in English that an enterprise may operate in one or more establishments.

The main exception is Israel, in which such activity is much less significant. The informal economy accounts for between 6 and 20 per cent of activity depending on the precise definition used, which confirms that Israel is much closer to a typical European country than the other NET-MED countries in this regard. Generally, research on this issue is not conducted on a regular basis. In most cases there is no time series data on this topic, or detailed analysis of the breakdown of such activity within the total. However, the available evidence does suggest that it is possible to obtain at least a broad handle on the scale of such activity and how the informal economy relates to the formal economy.

In some countries, such as Egypt, the importance of the informal sector has been assessed by academic researchers by using the rich survey datasets to estimate the scale of informal employment. However, these surveys are not regular and so a time series of data is lacking. The paucity of data on the informal economy is recognized in all countries other than Israel as a key challenge to labour market analysis, and in some there are efforts to make improvements, such as in Jordan where the Department of Statistics is working to enhance labour surveys to improve measurement of the informal sector.

Some modelling work has also been carried out to take this explicitly into account (for example in Lebanon). In Egypt and Jordan, there is no forecasting work, or evidence of how the informal economy is accounted for in economic models – the only modelling is to estimate the current (and past trends in the) size of the informal sector. The work in Lebanon was supported by the World Bank and carried out under the auspices of the Ministry of Finance. It was conducted primarily with a view to exploring macroeconomic policy issues rather than more micro-level skill-related ones.

3.5 Summary of methodological challenges

Existing macroeconomic and skills forecasting models (such as the one developed on behalf of CEDEFOP) face a number of challenges if they are to be developed for generating robust projections of employment and skills in the NET-MED Youth countries. Two particular characteristics of these labour markets will need to be dealt with: the significance of the informal economy and the importance of remittances from abroad. In addition, a challenge arises from the need to focus on young people, who are generally not the prime subject of most standard forecasting models. These issues are each discussed in more detail in the remainder of this section.

Informal economy

There are some significant challenges to modelling the informal economy in both econometric models (such as E3ME) and CGE models. This is because of the variety of ways in which the informal economy is conceptualized and measured in the different NET-MED Youth countries.

The significance of the informal economy (and micro enterprises) in most NET-MED Youth countries is therefore a major concern.²² It has two main implications. It makes accurate measurement of the overall

²² Israel is the exception.

scale and structure of employment difficult, and it complicates the modelling process because of the need to model the relationship between formal and informal sectors.²³

As summarized earlier, most countries adopt a definition of the informal economy along the general lines suggested by the ILO. This distinguishes the differences between (and overlap of) the *informal sector* and *informal employment*. Making use of labour force surveys, work has been done in most countries to establish the size, structure and characteristics of the informal economy, thus defined. The existing surveys are limited in the extent to which they can provide data for time series and distinguish in which industrial sectors the activity takes place. It is recommended that the NET-MED Youth project builds directly on this work to make best use of the available data and evidence. In addition, the NET-MED Youth project can assist with further improvements to the measurement of the informal sector that are already in progress in some countries.

To the extent that informal employment is included in the economic statistics, some aspects of the informal sector may already be included in those economic models that do exist in the NET-MED Youth countries. However, only in Lebanon have attempts been made to explicitly model employment in the informal sector, with a particular focus in that research on the labour market. The research appears to²⁴ model the participation and occupational choices made by workers, and how they are matched to jobs with formal wage employment versus informal wage employment. It is recommended that this research is investigated further because it could provide a valuable starting point to consider how best the NET-MED Youth project could develop the treatment of the informal sector.

This raises the question of whether accessing and deepening this research is a prerequisite for the development of tools for all countries, as the informal sector seems significant in most of them.²⁵ Certainly some further research would be desirable to clarify the way in which any macro model needs to be extended to cover the informal sector. However, the previous work in Lebanon provides a good starting point, and this should not be seen as a serious stumbling block to making more general progress on economic and labour market modelling and forecasting.

Remittances from abroad

In many of the NET-MED Youth countries, the economies are supported by cash remittances from nationals working abroad. For example, in Egypt remittances from returnees or current migrants are thought to have played an important role in enabling households to invest. In Lebanon, the remittances of migrant workers are thought to make a notable contribution to financing consumption. Findings such as these are based on specific research, and qualitative, and to a lesser extent quantitative, analyses (such as extensive surveys of emigrants). There is little firm evidence or data on the scale and nature of these financial flows, including how significant they are compared with total GDP.

²³ In many countries informal employment is implicitly measured in part at least in the data from household surveys, but it is not clear to what extent this is reflected in measures of output. In the *Country Appendices* a description of how existing models have approached this issue is provided (for instance, for Lebanon), as well as how to account more generally for the significance of the informal economy.

²⁴ This *Situational Analysis* has not been able to obtain detailed model documentation.

²⁵ Israel is the main exception.

Remittances are not well measured in national accounts data. It is in the *balance of payments* that remittances are identified as follows:

- workers' remittances (current transfers) – cover current transfers by migrants who work in and are considered residents of other countries
- compensation of employees (income) – the wages and other benefits of cross-border workers and other non-resident workers
- migrants' transfers (capital transfers) – include the movement of personal effects and financial assets between countries arising from a change in residential status.

However, few national statistics offices publish separate estimates for workers' remittances. In its *Migration and Remittances Factbook* (2011), the World Bank publishes its own estimates of remittances. These estimates are based on officially recorded remittances, and the World Bank acknowledges that the true size of remittances, including unrecorded flows through formal and informal channels, is believed to be larger. Some previous attempts have been made to estimate the impacts of worker remittances on macroeconomic variables such as consumption, investment and imports. For example, by using relevant multipliers to apply to estimates of remittances to assess the multiplier impacts on these variables. However, in our review of research and modelling in the NET-MED Youth countries we have not been able to identify whether remittances have been taken account of in any of the existing macroeconomic models.

Modelling remittances would involve some assumptions about the population in the diaspora, their income, and the level of their remittances to the home country. This is quite difficult to predict, similar to the difficulties in modelling migration flows and hence population demographics. A simple method is to assume that a fixed proportion of remittances are transferred to domestic households, which could reduce over time, as the economy grows.

For example, in the early years of the state of Israel, the country benefited greatly from remittances, which helped build infrastructure and institutions. In 1972, remittances reached a peak of 2.64 per cent of GDP, but as the country's economy grew, this steadily decreased to around 0.23 per cent in 2011. Similarly, the Palestinian economy benefits from remittances from Palestinians employed in the Israeli labour market and those living farther afield. Following the Second Intifada in 2000, the government of Israel severely restricted the inflow of Palestinian workers into Israel (they were replaced by workers from African and Asian countries). An example of ways to model remittances in Palestine is given by an in-depth RAND report which analysed methods to 'build a successful Palestine' (Gompert et al., 2005).

Not until improvements are made to the measurement of remittances will it be feasible to accurately estimate their impact on the macro economy. However, we recommend that, if modelling work is taken forward, then on a country-by-country basis when contacts and engagement with the key stakeholders and statistical offices is established, there should be dialogue to further investigate what data is available and whether any attempts have been made to take account of remittances in existing macroeconomic models. This will inform an assessment of the extent to which it will be feasible to model the impacts of remittances.

Focus on the youth labour market

Given the overall aims of the NET-MED Youth project, there is a need for the modelling to include quantitative analysis in sufficient detail to focus on young people. On the supply side this is reasonably straightforward, both theoretically and in practice. The purpose of the modelling is to generate projections of labour supply disaggregated by gender and age band. This involves projecting participation rates by gender and age band and applying them to population projections. It is recommended that population projections are taken as an exogenous input and obtained from an official source (for example, a national statistics agency that has invested the resources and expertise to prepare such projections). All of the NET-MED Youth countries have access to sufficiently detailed population projections, although in some cases (such as Lebanon), there are concerns about the quality of such estimates.

Different approaches could be used to prepare projections of participation rates. In the CEDEFOP approach, the E3ME model includes econometric equations (by gender and age band) to estimate participation rates as a function of factors such as output, wages, unemployment and benefit rates. In many European countries, a measure of economic structure (the relative size of the service sector) is found to be important in determining female participation rates. Another approach is simply to extrapolate forwards from past trends in participation rates. In the case of several of the NET-MED Youth countries, however, past trends in participation rates have been influenced and disrupted by cultural and political factors, so extrapolating from these trends (or estimating econometric equations) may not be the best approach. A more suitable approach might be to derive a set of quantified projections based on qualitative assessments and judgement (for example, to impose future increases in female participation if this trend is anticipated).

There are methodological challenges to including the age dimension in the demand side: that is, to break down employment (and hence calculate estimates of unemployment) by age group. Age can be considered more obviously a definite characteristic of labour supply – an individual can be classified by age (and gender). However, labour demand (jobs) cannot be definitively categorized by age or gender – many jobs can be done by people of various ages, and by men or women. Because of these methodological issues (and data limitations), many existing approaches (such as E3ME in the CEDEFOP approach) therefore include (econometric) equations to forecast employment by industry sector, with no disaggregation by age and gender. It is factors specific to the industry sector (such as output and relative wages) and the wider economy (such as energy prices) that determine the sector's overall demand for labour.

Labour force surveys can tell us the typical characteristics (age, gender) of people working in jobs in different industry sectors (and occupations). Such data can therefore be used to make estimates of past trends in labour demand by age and gender. However, to forecast such trends is difficult. One approach is to assume that patterns of employment by age and gender in each industry will remain unchanged in the future (or extrapolated trend changes could be applied). This approach would not explicitly take account of important factors that influence changes in patterns of employment by age and gender, such as the economic cycle (youth employment/unemployment is more procyclical), the constraints/surplus (and impacts on relative wages) of supply of different age groups, and policy interventions to improve the transition of young people into employment.

Qualitative analysis could be used to assess how these factors might change patterns of employment by age and gender, and so impose these trends. Labour markets do not in reality separate the demand for young workers from demand for older workers, and so it would be difficult to interpret estimates of unemployment

derived from this approach and (especially if the analysis was done for detailed, for example five-year, age bands) it is possible that it might yield projections of negative unemployment for some age/gender groups. Effectively this approach would give a supply-unconstrained projection of how the changing sectoral structure of the economy would shape the demand for different age groups (and genders).

A more sophisticated quantitative approach tries to estimate econometric equations for employment by industry sector and by age – to take explicit account of age-specific wage rates and other variables for each age group. Although this tries explicitly to take account of certain factors that determine demand by age group, it is not recommended as a feasible approach. It is not certain that it would sufficiently take account of supply constraints (so interpreting unemployment would be again difficult), trends in employment by age in the NET-MED Youth countries are driven by factors (cultural/political) that are difficult to forecast, and data in the NET-MED Youth countries are not sufficient.

This discussion has focused on the methodological challenges to using a sectoral macroeconomic model to project employment. To carry this through into the skills modules would add another layer of complication.

Therefore, to model by age and gender is feasible for the supply side but there are limitations to what can be achieved on the demand side, because of data limitations and methodological challenges for which it would be difficult to find tractable solutions within the timeframe of the NET-MED Youth project.

Table 3.1 Summary of relevant research by country

Country	Algeria	Egypt	Israel	Jordan	Lebanon	Libya	Morocco	Palestine	Tunisia
Research									
<i>Macro forecasting model</i>									
Models exist (y/n)	Y	Y	N	Y	Y		Y	Y	Y
Provide sectoral detail (y/n)	Y	Y	N	Y	Y (8)		Y (20)	Y(6)	N
Up to date (in current use) (y/n)	N	N	N	Y	N		Y	Y	N
<i>Skills forecasts</i>									
					(Q level)		(Q level)		
Models exist (y/n)	N	N	N	Y	Y?		Y	N	N
Up to date (in current use) (y/n)	N	N	N	Y	N		Y	N	N
<i>Other relevant analysis</i>									
Size of informal economy	Some (37.0)	Some (large)	Small (21.0 or 6.6?)	Some 44.0	Some >40.0		Some (large)	Some 36.8	Some (large)

Note: The table indicates whether or not relevant research/analysis exists. In most cases there is some relevant work. Details are to be found in the *Country Appendices* and the *Positional Papers*.

4. Data availability

4.1 Introduction

This chapter assesses the availability of data needed to construct some kind of systematic quantitative forecast of the labour market focusing on the demand for and supply of skills. It begins with a discussion of some general issues in building quantitative models, including specifically models of the type developed by CEDEFOP in a European context.

Subsequent sections then explore in more detail whether or not the data needed to build a multisectoral forecasting model and the other skills demand and supply modules used in the CEDEFOP work are available and accessible. This first focuses (in Section 4.3) on data required to build macroeconomic models, including national accounts time series data and input–output tables, before turning (in Section 4.4) to how to measure and model changes in demand and supply by skill (measured here by occupation and/or qualification).

Section 4.5 addresses the important issue of how to deal with the informal economy when trying to make projections. This involves both conceptual and theoretical issues in the technical modelling process as well as more practical ones about how to measure these aspects.

Section 4.6 draws some conclusions about what is possible in each country. This is not simply a technical issue. Data availability is not just about whether or not relevant data exist, but also about their accessibility to researchers wishing to build models. Even where data are available and accessible there are political and other considerations about how best to undertake a forward-looking assessment. The discussion considers the pros and cons of different approaches both technically (how the work should be done) and operationally (who should be involved in doing the work).

4.2 General considerations

This section sets out briefly the data requirements of a modelling approach similar to that used in the CEDEFOP work. There are two key elements to this approach (which have different data requirements): a multisectoral macroeconomic model, or modules to translate the results into implications for skills demand and supply.

The national consultants were asked to address whether or not data of this kind exist in each country. Drawing upon their reports an assessment was made in each case.

In addition, to adapt the CEDEFOP approach to better suit the NET-MED Youth countries, and the focus on young people in particular, other data may also be needed, for example:

- information on the scale and structure of the informal economy
- information about patterns of labour demand and supply, distinguishing young people as a group.

4.3 Data requirements for multisectoral macroeconomic models

This section provides a description of the data required to develop a multisectoral macroeconomic model (econometric or CGE) similar to that used in the CEDEFOP approach.

Sectoral detail: Ideally the E3ME model requires data for around forty sectors – those sectors currently used for the CEDEFOP work. For a list of the sectors and their definitions, see the column labelled ‘43 E3ME World regions’ on this page:

www.camecon.com/EnergyEnvironment/EnergyEnvironmentEurope/ModellingCapability/E3ME/Sectors.aspx

Variables: The main series required by sector are:

- output (current and constant price measures of value added (GDP) and gross output);
- employment (headcount, thousands)
- labour costs (current price)
- working hours (hours per week)
- investment (current and constant price)
- exports and imports (both current and constant price)
- R&D (if possible, current price).

And by other classifications:

- consumption (by consumer product, current and constant price)
- population, participation rates (both by gender and five-year age band, thousands) – historical data and projections into the future
- government expenditure (current and constant price, split into health/education/PAD/other)
- Unemployment (ILO definitions) preferably by five-year age band and gender.

Other information and particular requirements

Information on ‘headline’ macroeconomic variables (such as overall GDP, exchange rate, interest rate, tax and benefit rates).

Time series: to estimate the relevant parameters, ideally series that are consistent over time are required going back to around the mid-1990s if possible.

Other (non-time-series) data for the economic model are input–output tables showing interlinkages between economic sectors – ideally Use and Supply tables with industry detail, and a social accounting matrix (SAM) including an input–output table (in basic prices) with industry detail.

4.4 Data requirements for the skills supply and demand modules

This is a brief description of the data required to develop a framework to forecast detailed skills supply and demand using modules similar to those used in the CEDEFOP approach.

The main time series required are:

- demography and labour force by age and gender (five-year age bands)

- labour force survey or other data on employment structure by: occupation (preferably a time series and including data cross-classified by occupation and industry, using detailed categories and standard international classifications)
- labour force survey or other data on employment structure by formal qualification (again preferably time series with data cross-classified by occupation and industry)
- labour force survey or other data on numbers economically active by formal qualification (classified by age and gender) to provide initial estimates of labour supply by skill (again preferably time series).

4.5 Information on the scale and structure of the informal economy

In principle, given the significance of the informal economy in most NET-MED Youth countries, it is of key importance to get some idea of the scale and structure of the informal economy and how it interacts with the formal economy.

In practice, information on the scale and structure of the informal economy and informal employment is sketchy. In some cases, this is in part covered by the official data sources which seek to include some of the microenterprises that form part of the informal sector as defined by the ILO.

Some modelling work has been undertaken, such as that by the World Bank in Lebanon. This analysis was based on a multi-sector, sequential dynamic CGE model. The model provides a detailed description of the labour market, while taking into account informal and formal jobs in all sectors, for young and adult workers, and across levels of education. The model also takes into account local and international migration flows. This demonstrates that quite a bit can be done with relatively little data.

CGE models calibrate a theoretical model (a system of equations) to match a country's Social Accounting Matrix (SAM). If part of the informal economy (as defined by the ILO) is included in the SAM this will be dealt with automatically. To consider the part of the informal economy that is not accounted for in the measured economy, economists add additional accounts for 'self-production' and household and self-produced goods which are directly consumed by differentiated households/regions and disaggregated using the proportions for each activity from household survey data.

Furthermore, assumptions about unemployment and informal employment are added to the model, which if not considered might result in misleading conclusions. For example, in some countries, being in self-employment (like that of a farmer working on a small plot of land) is not considered as being employed. Accepting this convention could lead to misleading labour policy proposals. Furthermore, these issues need to be considered for different regional, income level and/or age group dimensions.

4.6 Conclusions on feasibility (data availability and access)

The final tables in each *Country Appendix* attempt to bring this all together. The idea is to try to neatly summarize what data are available in each country and what that means for the feasibility of different approaches to skills modelling and forecasting.

- To extend E3ME requires very specific data (in terms of classifications, length of time series and so on).

- In some cases, similar data may exist but using different classifications so it is possible to build something analogous to a single country, stand-alone, E3ME-style model.
- In the absence of data, some time series are needed to generate a forecast.
- As was indicated in the workshop, as a bare minimum there need to be reasonable data on the current position (where are we now?) and some mechanism for thinking about what happens next. This could be a model (perhaps a simple ad hoc statistical model) or a more qualitative approach (some kind of Delphi exercise or a more qualitative scenario development activity involving young people much more directly as well as other stakeholders).

Availability

Generally, the data situation in most countries is such that some minimum level of modelling is possible, although some countries are much better served than others.

The national statistical agency (NSA) or its equivalent usually produces national accounts data as well as other relevant information, such as demographic data and estimates of employment.

In most cases there are regular data on a reasonably consistent basis covering the period from 2005 or so. However, this needs careful review of its suitability, as recent trends may not be a good guide to the future because political and other considerations have disrupted established trends.

Most countries conduct fairly regular household surveys, broadly equivalent to the EU LFS (Lebanon is a notable exception). There is a similar set-up in many North African countries, which allows cross-country comparisons to be made.

There is some information on occupational employment (generally for broad categories only) based on the LFS or its equivalent survey. There are often no published occupation (standard occupational classification, SOC) by industry (standard industrial classification, SIC) employment tables, but such information is available from the relevant source on request (and subject to approval).²⁶

Some surveys of business are also available but these are the exception rather than the rule. Generally, none of the surveys produce great sectoral detail. Broad breakdowns to at least a dozen or so categories are generally available. In most countries twenty sectors is regarded as detailed.

There is a census in most countries (but not all, Lebanon again being a notable exception). They are generally infrequent (typically every ten years).

There is some information on qualifications of the workforce, but there is a lack of comprehensive data on stocks. In some countries there is quite a lot of information on flows through the education and training system but this is generally incomplete and inconsistent.

In all cases there are some kinds of input–output table (although these are often quite old and possibly outdated).

There exist international classifications to organize the data that is required for the modelling work:

- industry sector (ISIC, the International Standard Industrial Classification)

²⁶ There is no SIC-SOC table for Lebanon.

- occupation (ISCO, the International Standard Classification of Occupations)
- educational achievement/qualification level (ISCED, International Standard Classification of Education).

In some countries the data do conform to these international classifications (which would facilitate comparability across countries and the development of common modelling structures). However, in many cases the versions of the international classifications used are out of date, or the classifications used to organize the data are country-specific and so do not conform to international standards. For example, Egypt uses its own classifications for occupation and for educational level.

Data access

There is a distinction between feasibility in theory and feasibility in practice! In many cases there are likely to be big advantages in getting statistical agencies and other bodies involved at an early stage.

The available data are not always made available to researchers. Accessibility of data is therefore a key issue. Accessing detailed individual data is especially problematic in many countries, with ‘gateholders’ wary of allowing detailed access for reasons of confidentiality and concerns about political sensitivities.

This puts emphasis on the need to gain and maintain good relations with the relevant NSA and other data gatekeepers, as well as with other key stakeholders, including relevant government ministries and agencies, and relevant international bodies (such as the ILO and the World Bank, which may have undertaken relevant previous work).

In *Algeria* the basic data required do exist for reasonable time periods, although access needs to be obtained through direct application to the National Statistics Office and there is no guarantee of success (data are often recorded as existing but not available). The National Statistics Office is likely to need to be directly involved in the project for it to stand a chance of success.

In *Egypt*, much of the basic data appear to be collected, mostly organized through Central Agency for Public Mobilization and Statistics (CAPMAS) and the Ministry of Planning. Access to the data appears to be free and is readily facilitated through the CAPMAS and Ministry of Planning publications and website; more detailed requests can be made directly to CAPMAS and Ministry of Planning analysts.

In *Israel*, the Central Bureau of Statistics is a well-established governmental body that collects and stores the data. This is the key institution to contact for data. Most of the main data needed to develop labour market forecasting models are already online, but for a few key data requirements, such as detailed sector output, it is necessary to contact Central Bureau of Statistics, which could take a few months to prepare and supply the information.

In *Jordan*, much of the basic data appear to be collected, mostly organized through the Department of Statistics. Access to the data appears to be free and readily facilitated through the Department of Statistics’ publications and website; more detailed requests can be made directly to Department of Statistics’ analysts.

In *Lebanon* there is often the need to contact thirty religious agencies for permission to access data! In this case Central Administration of Statistics is the main starting point.²⁷

In contrast, access to data in *Morocco* does not seem to pose such a problem, with most information being accessible and freely available online.

In *Palestine*, the Palestinian Central Bureau of Statistics (PCBS) is now a well-developed governmental body, which regularly collects and stores data. This is the key institution that should be contacted to obtain data. There is sufficient data available to develop a labour market forecasting model, though the data are grouped into aggregated levels. To further disaggregate the data, PCBS needs to be contacted.

In *Tunisia* a government agency has been created to do this kind of work. L'Observatoire National de l'Emploi et des Qualifications (ONEQ) was set up by the Ministry of Labour and Vocational Training to provide a national observatory of employment and skills. The other key body in Tunisia is the Institut National de la Statistique, which is responsible for collecting and publishing most of the relevant data. The Institut National de la Statistique operates under the auspices of the Ministry of the Economy.

For all countries the involvement of these agencies is an essential component in the feasibility question.

Next steps

- Chose a lead partner. There are often many to choose from and coordination may be difficult, but the key players are identified here and in Section 2.5.
- Appoint a local expert to take on the key coordinating role, employed by the lead institution (ministry or academic).

²⁷ Another complication here is that in Lebanon there is as yet no UNESCO national project officer (a young coordinator for the whole NET MED Youth project). However, UNESCO does have education/TVET programme specialists in the local office.

Table 4.1 Availability of data by country

Country	Algeria	Egypt	Israel	Jordan	Lebanon	Libya	Morocco	Palestine	Tunisia
National accounts data	Y	Y	Y	Y	Y		Y	Y	Y
Sectoral time series	Y	Y	Y	Y	Y		Y	Y	Y
Input–output tables	Y	Y	Y	Y	Y		Y	Y	Y
Demographic data	Y	Y	Y	Y	Y		Y	Y	Y
Occupational data	Y	Y	Y	Y	Y		Y	Y	Y
Industry by occupation employment matrix*	Y	Y	Y	Y	N		Y	Y	N
Qualifications	Y	Y	Y	Y	Y?		Y	Y	Y
Scale of informal economy	Y	Y	Y	Y	Y		Y	Y	Y
Data differentiating young people	Some	Some	Some	Some	Some		Some	Some	Some

Note: * Needs to be developed from the LFS (or equivalent) for most countries.

Table 4.2 Feasibility by country of developing projections

Country	Algeria	Egypt	Israel	Jordan	Lebanon	Libya ²⁸	Morocco	Palestine	Tunisia
Extend E3ME (common, Standard classifications, NACE, ISCO, ISCED)	No	No	Yes (but more limited)	No	No		No	No	NO
Single country model (analogous to E3ME, but based on other classifications)	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
CGE model as above	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Ad hoc statistical model	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Qualitative approach (Delphi)	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Use existing model	No	No	No	Potentially	May be relevant		No	No	No
Build on previous work	No	No	No	No	Possibly		No	No	No
Actively engage with data providers	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Actively engage with NET-MED Youth stakeholders	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Conclusion	Feasible	Feasible	Feasible	Feasible	Feasible		Feasible	Feasible	Feasible

Note: The table provides an overall summary of whether or not it is regarded as feasible to develop quantitative projections.

²⁸ No data available for Libya

5. Conclusions and recommendations

5.1 Introduction

In this final chapter, the external expert team summarize their assessment of the situation in each country. This assessment includes an overview of the main challenges and opportunities for the labour market in NET-MED countries (including political constraints and context, the mismatch between demand and supply, the significance of social cultural constraints, and the significance of the informal economy and lack of economic development).

They also consider how far the youth transition policy framework is effective and involves young people. In most countries this appears to be largely absent. There is also not much evidence that policies that are in place are effective. Generally speaking, there is little evidence of direct engagement with young people.

The chapter concludes with some recommendations about the priorities for future research in skills anticipation, including an assessment of the case for and against developing a common tool across all countries (as opposed to developing country-specific approaches based on previous work). With the possible exception of Jordan there is not much work of direct relevance to skills forecasting. Nevertheless, it seems sensible where possible to build upon previous modelling work. In countries with no existing models a simple quantitative model (based on CGE or E3ME-style econometric methods) seems feasible.

The chapter then focuses on the feasibility of developing some form of systematic quantitative forecasts of skill needs, highlighting the required next steps in each case. More detailed thoughts are set out in the separate *Country Appendices*, one for each country. These follow a similar structure to the main report.

In general, given the nature of the NET-MED Youth project, a combination of both quantitative and qualitative methods seems best suited to the task.

The key problems and challenges in developing regular, consistent and comprehensive projections relate to:

- Problems in establishing a stable picture of likely future developments, given the political and other uncertainties faced by this particular group of countries. The lack of established trends in the formal economy and labour market, linked to continuing political uncertainties, makes any kind of quantitative modelling and forecasting difficult.
- The significance of the informal economy, which makes accurate measurement of the overall scale and structure of employment difficult, as well as complicating the modelling process (because of the need to model the relationship between formal and informal sectors and problems caused by difficulties in measuring and predicting the development of the informal economy).
- The significance of international flows of remittances to support the economies of many of the countries.
- The general lack of well-established macroeconomic models on which to build projections (albeit with some exceptions, such as Jordan).

- The lack of a focus in the modelling and forecasting work on the youth labour market, which is a prime consideration in the NET-MED Youth project.²⁹
- Access to relevant data to build quantitative models, especially data at a more detailed level. The level of detail possible (especially detailed data on occupational employment structure, which is limited primarily by the robustness of the data available), in turn limits what can be done in terms of skills forecasts.

5.2 Challenges and opportunities for the labour market

The *Positional Papers* reinforce the conclusions of a number of other studies about the economic and labour market situation in these countries, especially as regards young people. For example, a recent OECD study (2012), which is focused on North African countries, identifies five key challenges and five areas of action. While recognizing that many of the NET-MED Youth countries in North Africa have experienced stable and significant growth over the decade from 2002, it highlights that this economic growth is not always sufficient to guarantee productive employment for all, especially the young. This can lead, and has led, to frustration. In the absence of a political process which allows expression of such frustrations and the encouragement of policy changes to deal with the emerging problems, instability can result. This can be seen as one of the driving factors behind the so-called Arab Spring of 2011. The OECD (2012) argues that the policy agenda for economic development in such countries needs to become more inclusive, employment-creating and sustainable, aimed particularly at addressing the problems facing young people.

The five key challenges for youth employment it identifies are:

- Economic growth has not translated into sufficient jobs for young people.
- Large and growing youth populations continue to increase pressure on labour markets.
- Many jobs for young people are of low quality, and many young people remain in poverty despite working (often they find jobs in the informal sector, which acts as a safety valve).
- Many young people are discouraged from entering the active (formal) workforce, and these outnumber those formally recorded as unemployed.
- Women face specific challenges in accessing the labour market because of sociocultural restrictions, which results in much human resource potential being lost.

The OECD also identifies five key areas where action is needed.

1. Reduce the barriers to growth and job creation faced by firms and entrepreneurs.
2. Bridge the gap between education systems and the requirements of employers.
3. Provide better information to young North Africans on labour markets, as many of them have unrealistic job expectations.
4. Create a level playing field for first-time job seekers.

²⁹ This is also the case in established approaches to forecasting such as CEDEFOP's. Such models rarely focus on the age dimension, especially on the demand side. In a number of countries, such as Egypt, there is a focus of policy on the youth labour market and there have been some studies.

5. Make government programmes promoting youth employment more effective and meet the need for better monitoring and evaluation.

These are all echoed in the conclusions of the eight *Positional Papers* developed for the NET-MED Youth countries.

The NET-MED Youth project aims to address a number of these issues. The development of labour market projections is intended to contribute directly to point 3.

The national consultants in their *Positional Papers* make various comments about the effectiveness of policy:

- Egypt: ‘Moreover, labour market policies in Egypt suffer from inherent problems. First, they are primarily based on funding from international donors and are not institutionalized. The long-term sustainability of the projects is then challenged when the funding disappears. Second, many reports have particularly highlighted the failure of the projects’ sustainability due to a lack or insufficiency of institutional capacity-building projects. Third, the evaluation of labour market policies is either nonexistent or very weak. Active labour market policies are deeply lacking a solid monitoring and evaluation and impact assessment.’
- Jordan: quotes IMF Country Report No. 14/153: ‘What is needed is a combination of permanently higher economic growth and reforms to improve the responsiveness of the labour market to growth. The fact that unemployment has remained high for so long suggests that the problem is largely structural and will not be resolved by a cyclical increase in output. Indeed, over at least the past two decades, while the correlation between unemployment and the output gap has been statistically significant, the implied unemployment rate in the presence of a zero output gap – that is, the structural component of the unemployment rate – has been large, roughly matching the unemployment rate’s historical average. Moreover, the concentration of unemployment among the youth and educated suggests that any solution will need to involve greater labour market flexibility and educational reforms.’

5.3 Assessment of existing research in skills anticipation

Although some relevant research has been undertaken, with the exception of Jordan this is not in the form of systematic quantitative model-based forecasts.

Some limited research has been undertaken on more general macroeconomic forecasting models, but much of this is outdated and is not in the public domain.

In a few countries there have been other studies of a more academic nature that have focused on issues such as the youth labour market, migration of skill gaps and future skill needs, but these are the exception rather than the rule. They generally do not form the basis for the kind of work planned as part of the NET-MED Youth Project.

5.4 Priorities and challenges for future research in skills anticipation

The two main options are to try to build on existing work or to begin afresh. These both have advantages and disadvantages.

Building on existing work:

- avoids reinventing the wheel
- draws on local knowledge and expertise
- helps build local capacity
- helps ensure ‘buy-in’ and engagement
- encourages ownership and so the longer-term ‘sustainability’ of models
- avoids the ‘lowest common denominator problem’ (if all countries are to adopt a common model).

Starting anew:

- begins with a blank sheet of paper, avoiding preconceptions and other baggage
- makes it easier to ensure consistency and cross-country comparability
- avoids having to engage in prolonged political and other discussions to agree terms and conditions for any involvement
- is probably much quicker!

If done the right way, by appropriate involvement of local experts, the second option could help to:

- ensure engagement with local knowledge and expertise
- build some local capacity
- ensure ‘buy-in’ and the engagement of local stakeholders.

Methodological challenges

Although there exist well-established models (such as the approach used by CEDEFOP) for generating quantified projections of employment and skills, two particular characteristics of the labour markets in the countries reviewed will require such models to be further developed to meet the needs of the NET-MED Youth project. These characteristics are the significance of the informal economy and the importance of remittances from abroad.

A further challenge arises from the particular focus of the NET-MED Youth project on young people. Most standard forecasting models (including the CEDEFOP one) do not focus on employment by age. The young account for a large proportion of the working-age population and are particularly disadvantaged with regard to labour market opportunities and outcomes. This motivates the focus of the NET-MED Youth project on the youth labour market.

Details of each of these issues and how they might be addressed are included in Section 3.5.

5.5 Feasibility of developing projections

Tentative conclusions regarding skills forecasting

It is important to recognize that in some cases the use of simple models and techniques for skills and anticipation might be the best way to achieve the expected results, needed for the NET-MED Youth project. However, if the focus is more on longer-term capacity development in this area of economic analysis and modelling, then a more sophisticated approach might be warranted. The advice to the national stakeholders should also be guided by the most efficient investment they can make, taking into account the weak institutional setting as well as the low resources available for repeating this exercise on a regular basis.

A common approach for all countries, regardless of what has been done previously, is one possible way forward, building upon economies of scale and ensuring consistency and comparability across countries, which is a key aim of the NET-MED Youth project. The basic data are available to build a simple forecasting model tool (which could be either E3ME econometric style or a CGE approach). However, this would ignore the existing knowledge and capacity that has been built up in many countries.

- Jordan, has the closest thing to an existing model of the kind needed, but to try to build on that rather than developing something much simpler from scratch will take much more time and resources.
- In other countries the situation is much more complicated, both in terms of previous modelling history and in achieving access and buy-in.
- In Tunisia, for example, the conclusion is that the amount of work done and the experience of individual researchers and of national institutions in the area of economic and labour market modelling, although not directly on skill analysis, are sufficient to build an appropriate technical and analytical infrastructure for skill analysis and forecasting. There may be some constraints on the data availability side but these are not likely to be binding. However, this is likely to take considerable resources and a long time to get off the ground
- More generally, it is apparent that in many other countries there has been a significant amount of economic modelling work, although generally not focused on skills or young people. This raises the question of whether such work should and could be extended to focus on such matters for the UNESCO NET-MED Youth project.

There are political and many other considerations (for and against) starting afresh as opposed to building on such previous work.

In many cases, the best way to secure access to the relevant data for the NET-MED Youth project is to actively involve the relevant ministries, government departments and statistical agencies as partners. In countries like Tunisia they have already expressed their interest. However, doing this will also probably involve quite protracted negotiations. This could be a problem given the timetable UNESCO are envisaging for developing the projections.

The need for a qualitative as well as quantitative approach

The earlier discussion emphasized that the use of any kind of model or approach based on extrapolating from past trends is especially problematic in this set of countries. Past trends may not provide a very good guide to future prospects. Moreover, the nature and overall objectives of the NET-MED Youth project suggest the need to consider some scenarios at least that break with past trends. This may favour the use of

more qualitative methods for assessing future possibilities. However, any such exercise needs to be based on a sound set of quantitative foundations, so we recommend a hybrid approach in which quantitative projections are developed to provide a starting point for thinking about the future in more qualitative terms.

5.6 Required next steps

This section sketches out the key responsibilities, tasks and deliverables for the various actors likely to be involved in next steps. It focuses on the development of the quantitative projections. This is just a part of the broader UNESCO NET-MED Youth project and events.

The main actors are:

- The external technical team (Warwick Institute for Employment Research and its partners and any new consultants co-opted into the technical analysis).
- The national technical consultants employed to produce the *Positional Papers*.
- The NET-MED Youth national expert team set up in each country, including representatives of young people, social partners, key national institutions involved in skills analysis and anticipation, as ‘data owners, gatekeepers and administrators’, and those involved in relevant previous modelling and related work, and development partners and advisors in this field, on a voluntary basis.
- relevant international partners who have an established track record of work in these countries (employment/statistical advisers of such organizations in the country could become members of the national expert team, as they might already be in close collaboration with national stakeholders on such issues, and this could enhance the necessary national capacity-building). UNESCO already has something like this configuration in Egypt for example (planning and employment senior advisors from multilateral/bilateral partners are willing to participate in the steering committee of the national expert team).
- UNESCO (including Headquarters and field office levels).

For each country the following key steps are needed:

1. Agree what is possible regarding modelling and projections.
2. Decide on a modelling approach.
3. Assemble data.
4. Build a macro model.
5. Build /extend other skills modules.
6. Discuss exogenous assumptions.
7. Produce projections.
8. Write up results.
9. Discuss results.

Items 1 and 2 include decisions about:

- whether or not is possible to develop any kind of quantitative forecasting tool
- if it is, possible, what tool would be most cost-effective and practical
- who should be involved, including whether or not to build a new model from scratch or build upon some existing approach.³⁰

³⁰ This is still a decision to be made. Even in Jordan, where there is a well-established model, it may be preferable to develop something new that is customized for this particular project. Until detailed discussions take place about access and engagement, this will not be clear.

These decisions will influence choices about how, and by whom, items 3 to 5 should be carried out.

Once these decisions are made, the modellers will work with UNESCO's full NET-MED youth national expert team to undertake the projections, engage in the development of scenarios and contribute to the policy dialogue.

Based on the results of the situational analysis for each country, as set out in the individual *Country Appendices* (A1–A8), the external technical team has made recommendations about what is possible in each country. However final decisions here will depend on a complex mix of political and other considerations.

- In all cases the conclusion is that there are sufficient data available, in principle, to make some kind of assessment of future prospects.
- In most cases there are suitable data to build at least a limited quantitative model.
- In no case is there sufficient data readily available to simply extend the existing CEDEFOP E3ME framework for modelling and projection work to include any of the NET-MED Youth countries (although this could be a longer-term aspiration).
- There are suitable data to build a more limited E3ME-style model in most countries, albeit at a less detailed level by industry and by occupation than the CEDEFOP model.
- Alternatively, a CGE-style model tool could be developed. (Appendix E sketches an outline of what this might look like.)
- In a number of countries there is some history of previous relevant modelling work. It would make sense to try to tap into this, although this will probably involve a quite complicated and possibly lengthy negotiation process (which may be at odds with the timetable set out for the NET-MED Youth project).
- Jordan is probably the most advanced case in this regard, having a well-established model that could in principle be used to produce projections of the kind required.
- In other countries there is some evidence of relevant modelling work having been undertaken, but this is often not up to date and there could be protracted negotiations to secure access and agree a development plan.
- Given the tight timetable, and the advantages of adopting a common framework, there is a case for recommending that a standard and common, stand-alone modelling tool or model should be developed for every country (based on either a CGE or econometric approach).
- However, given the longer-term aims of the NET-MED Youth project regarding capacity-building there is also a strong case for trying to build on existing work in order to exploit local knowledge and maximize local engagement with the process. In Jordan there seems to be a good model framework already available. In other countries the existing work is of more limited direct value but where possible the aim should be to build on existing knowledge and previous work, recognizing that this is a long-term process.
- Any new tools should be developed by the external technical team, working in close collaboration with national technical consultants. The latter might be the same experts who produced the *Positional Papers* (but not necessarily so). They should be experts at accessing and manipulating the local data into the format needed for the model. Ideally the team should include someone employed in one of the key stakeholder organizations so that institutional capability can be built up. The ideal aim is to develop a strong partnership with one relevant institution in the country that will be able to take the work forward in the longer term.
- The national technical consultants should also play an active role in preparing the projections, including writing up and dialogue with other stakeholders.

A key step will be to identify the national technical consultants, including identification of the preferred partner institution and the setting-up of the national expert team mentioned above. Once that is accomplished, the main steps to be undertaken to produce a quantitative assessment will be:

1. **Assemble data:** Depending on the outcome of the previous step, data will be assembled to build or update and extend whatever model is deemed possible. This will be the prime responsibility of

the national technical consultants working with the external technical team. The latter will set out a specification of data to be collated and delivered by the national technical expert.

2. **Build a new or update /extend an existing macro model (E3ME style or CGE):** The external technical team will work with the national technical consultants to build the new models using the relevant data. This will include any developments necessary to focus on young people and the informal sector.³¹
3. **Build or extend skills modules:** Again depending on the data available, Skills modules analogous to those in the CEDEFOP *Framework* will be developed to match the data from the previous step.
4. **Discuss exogenous assumptions:**³² Once the models are built, the external technical team will discuss the exogenous assumptions to be built into the projections with the various interested parties (including stakeholders, national technical experts and UNESCO). The latter will act as conduits and synthesizers of views, to reach a consensus of what is most pertinent and relevant.
5. **Produce projections:** The external technical team, working with local experts and stakeholders, will then produce the projections using the models developed.
6. **Write up results:** The external technical team, working with local experts and stakeholders, will then write up the results in a suitable form for use by a non-technical audience, including a ‘youth version’ to be owned by youth representatives/organizations.
7. **Discuss results:** The final stage will be to discuss the results, with the possibility of amending them in the light of feedback from stakeholders and others. It is assumed that another meeting, bringing together the experts and stakeholders, would be a good way to do this.

These steps can be seen as part of a larger process within the UNESCO NET-MED Youth project as a whole. This might involve a preliminary step or event aimed at gathering all the national stakeholders and the national consultant in order to:

- present the upcoming skills forecasting exercise (including steps 1 to 7)
- engage with this broader group, defining the expected role of each in this work
- help to ensure free access to appropriate data.

³¹ Ideally this would be done in such a manner that this code can be made ‘open source’ or equivalent so that UNESCO gets ownership.

³² Exogenous assumptions is a technical term used by forecasters to describe those things that are regarded as important but which are outside the remit of the model being used for the forecast. They might include such things as demography and what is happening in the rest of the world to prices and economic activity levels.

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