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RESEARCH REPORT ON INTERNATIONAL PERSPECTIVES FOR SKILLS PLANNING AND THE SOUTH AFRICAN CASE STUDY

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Research Project on Skills Planning: International and South African Perspectives for Skills Planning Dialogue between South Africa and the European Union

Final Report

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Executive Summary

The present Draft Study Report contains the findings of the research undertaken by the research team. It highlights the progress made in establishing a credible mechanism for skills planning in South Africa, and also highlights the challenges that have been experienced in this regard. It then considers the possible lessons to be learned from international skills planning experience in general and EU in particular. This has involved the collection of information about skills planning systems and practices in a number of European countries considered of particular interest to South Africa. These are represented by: Sweden, Germany, Denmark, the Netherlands, the UK, Ireland and the Czech Republic. Furthermore, the skills planning practices of the US, Canada, Australia, India, Malaysia and Singapore were reviewed.

The purpose of the study is to provide practical inspiration to the ongoing effort to refine the labour market forecasting and skills planning process in South Africa rather than to conquer new theoretical land. Therefore, the study focuses on the institutional and methodological aspects of labour market monitoring and skills planning.

This study serves as a base for the implementation of the contract 'Research Project on Skills Planning: International and South African Perspectives for Skills Planning Dialogue between South Africa and the European Union', conducted under FWC BENEf 2013, Lot 9. The report lays the basis for the second phase of the Dialogue.

The study's findings draw on reports and documents that have been produced in a number of processes as well as interviews and discussions with selected role-players and resource persons. In addition to these findings, the records of key meetings and processes have been consulted. The draft report was presented at a workshop in Pretoria on March 25, 2015. The final version of the report reflects the feedback by the workshop.

The South African approach to and experience of skills planning

The report highlights that South Africa has undertaken a number of initiatives to support skills planning at a national as well as sectoral levels. These have evolved and shifted over time based on learning and changes in the political, social and institutional context. These modifications are framed by broad legislative, policy and strategic frameworks including: the Skills Development Act (1998) and subsequent Amendments (2008), the National Development Plan (2012), White Paper on Post Schooling Education and Training (2013), and different iterations of the Human Resource Development Strategy SA¹, National Skills Development Strategy and the Medium Term Strategic Framework.

The Department of Higher Education and Training DHET has recently put in place a skills planning unit and has also established a mechanism to work with economic departments to develop a methodology to understand the skills implications of the various economic policies and strategies. Further, the report also explains the process that has been set up to ensure that the requisite skills are in place to support the implementation of the 18 Strategic Infrastructure Projects (SIPs). This work has also been supported by extensive research including work that was undertaken by the HRDC, the DHET, SIPs and the LMIP.

The report highlights that there is broad agreement among decision-makers in South Africa about the importance of a skills planning mechanism that focuses on, 'the collection and analysis of labour market intelligence and information on the supply of and demand for skills, and to the use of such data and analysis for the purposes of planning, resource allocation, and interventions to address both current and anticipated skills requirements.' The research also points to the kinds of labour market information that is required to support such a system and the nature of the data that is available against these requirements. This includes the availability of credible routine national data sets to support planning, which are the responsibility of StatsSA, which provides valuable insights into the labour market and the availability of firm level data collected through the WSP/ATR. However the report observes that there are challenges pertaining to the credibility and quality of the WSP/ATR data and notes that ways to improve this

¹ This *First Strategy* was released in 2001 (though the document is undated), and covered the period from 2001–2005/2006 and the second strategy is intended to cover the period 2010 - 2030

WSP/ATR processes are currently being explored within the DHET. It also indicates that the occupational and sector classifications utilised by StatsSA are not consistent with those utilised in the skills development system (both in terms of sectoral classifications as well as with regards to occupations) and that this makes the utilisation of this data for skills planning more complex.

The report emphasises though that the real challenge posed by interviewees relates to the need to ensure that the data collected and analysed can be utilised to inform education planning (in terms of enrolment, institutional infrastructure and capacity requirements) as well as to inform other processes such as those related to career guidance and the allocation of scarce skills visas. These requirements, and the implications for planning horizons, are recognised in current policy documents,, which emphasise the need to understand current demand as well as medium and long-term demand. An analysis of current demand is critical to inform immigration processes (and some short skills development priorities as well as curriculum change in institutions of learning), and future demand (5 – 20 years) so as to inform education planning (including steering the Programme Qualifications Mix in public institutions and the priorities for the development and funding of programmes against occupational qualifications, allocating funds to support infrastructure development in institutions of learning (such as workshops, etc.), allocation of bursaries). Further the short and long-term demand is required to ensure that there is information available to support career guidance.

Further, interviewees highlight the need to consider planning from an economy-wide perspective – using an occupational lens - and indicate that there is a need to consider this at a national level as well as provincial and regional levels. This is emphasised by the experience of the SIPs, which has taken this approach with respect to the analysis of occupations required at a national lens but is also piloting these approaches at a regional level.

Finally, this report indicates some of the capacity implications that have been identified for this system. It highlights the institutional arrangements that have been put in place to guide skills planning and some of the challenges that have emerged. In doing so it begins to tease out the emerging roles and responsibilities of different players as outlined in various documents.

International LMI and skills planning practice

Multinational organisations that have dealt with methods for labour market monitoring and skills planning include the EU (Cedefop), OECD, ILO, World Bank and UNESCO. Especially the experience of Cedefop, OECD and the World Bank STEP initiative may be of the interest for the South African discussion. Drawing on European experience Cedefop has developed a number of methods and instruments for measuring especially demand side trends and occupational profiles. Cedefop has less to offer in terms of how to translate the labour market information into specific skills planning, as this is an issue for national consideration. OECD is primarily engaged with measuring the competencies of the labour force of different member countries, in order to assess their preparedness for the globalisation of economy, and strategies for improvement of the competencies of the labour force. STEP has developed two survey instruments that collect information on the supply and demand for skills. Rather than focusing on educational attainment, STEP measures three broad types of skills, cognitive skills, socio-emotional skills and job-relevant skills.

The study found that there is significant similarity in terms of data collection instruments and methods among EU member states. However, differences exist in especially in terms of the disaggregation and quality of data. Detailed forecasting is most suited to countries with comprehensive individual registers, which is the case for most EU member states. Demand side forecasting based on a general equilibrium model of the economy can be applied to any country with reliable data on the national accounts. Most countries already use such a model in their analysis and policy making. The supply side of the model, based on registers, is most applicable to countries with adequate individual data. Most countries have individual-based data on the education system; however, not all have adequate individual data on the labour force. Labour force data for most countries comes from labour force surveys. Since it is based on samples, statistical uncertainty will limit the accuracy of the model and the detail of the forecasts that can be made.

The examined example of non-EU LMI and skills planning practice is highly diverse. While collection of labour market information in the US is primarily considered a service provided to citizens and people dealing with planning of educational and skills training activities, the Canadian and Australian authorities

similar to most European countries perceive labour market intelligence an important planning tool used for setting educational and training priorities and thus decision-making on resource allocations. Singapore is the classical example of a 'developmental state' approach'. Addressing specific skills gaps, the WDA manages a number of skills development and training schemes, all funded through a combination of government grants and a mandatory skills levy. Finally, India is an example of a country which, despite substantial investments in skills training, is still suffering from serious labour market imbalances and skills shortages

What can South Africa learn from the international experience?

The study's findings suggest the following dimension to be considered in relation to future skills planning practice in South Africa:

1. The term 'skills planning' has a very particular meaning in a South African context. Few other countries use the term the way it is understood in South Africa. The main explanation is a widespread scepticism as regards to the extent to which forecasts can be translated into specific skills development plans. Instead, the tendency is towards extensive stakeholder consultations combined with steady adjustment of the balance between demand and supply of training and education offers;
2. Skills planning needs to take place at a national economy wide level, in key sectors and at a local level. All examined EU member states have differentiated procedures allowing for sector-specific and/or regional skills planning involving relevant stakeholders;
3. The current process that has been put in place by DHET and EDD should be strengthened and a methodology developed to analyse the implications of the economic policies with respect to areas of anticipated growth and the kinds of skills that will be required to support these. This should focus on the development of scenarios that consider the anticipated trajectory of the economy based on economic policies and incentives as well as the ways in which industry leaders anticipate their sectors will grow and the skills implications of this. There are interesting methodologies available developed by Cedefop, OECD (and others) for analysis of the expected implications of different policies and strategies;
4. At sector level it is proposed that a number of key sectors be identified and a group of key stakeholders (employers and labour unions) and experts should be convened for each sector and an analysis of the trajectory of the sector and their skills needs should be undertaken. This should be linked to a clear strategy of working with learning institutions to establish how they can support the identified skills needs and what enabling mechanisms are required to allow for these changes to take place. This could include funding for changes to the curricula, infrastructure and bursaries. This would also need to be coupled with a career guidance process that encouraged learners to enter these sectors. Essentially all industrialised countries have developed such consultative mechanisms;
5. At a regional/local level there is a need for planning that takes into account the current stock within the area, the demand for labour, the institutions of learning that can support the requisite supply as well as determine other strategies for addressing any gaps. This should be coupled with strategies to work with employers to consider other labour market strategies to create greater levels of stability of employment and a continuous application of skills. European experience suggests that regional (provincial) forecasting is important especially in relation to employment measures. However, the quality of the available data is critical for the accuracy of this planning;
6. Moving from an analysis of skills requirements to the development of skills to meet those requirements is difficult. This move is easier to make if the forecasting analysis defines the key occupations required at a broad level, so that decisions can be taken as to what should be prioritized for development, or review, as required. This assumes that there is a process to define occupational families and that decision are taken about the number, title and scope of the occupations per family. This is an exercise that requires close interaction between labour market actors (employers, labour unions and local authorities) and, not least, procedures allowing for relative 'painless' adjustment of the education/training system to respond to the agreed priorities;
7. Different procedures are required for the translation of forecasts to skills plans for higher education and TVET/higher learning institutions. The time horizon is shorter for the latter and requires more flexible responses. Also, the resource implications are quite different. The role of different stakeholders in this process should be clearly defines. The examined EU member states have highly different institutional structures and procedures for dealing with TVET and HE respectively;

8. Further, there is a need to ensure that feedback about demand is provided to institutions and that this is complimented by mechanisms that enable institutions to revise curricula where required and enrol additional students, and for students to access the programmes (through, for example, bursaries that support students to access priority programmes). It also means supporting education institutions, as they need time and resources to conduct research and have up-to-date knowledge of occupational areas; the setting of standards alone cannot provide insight into the bodies of knowledge required by different occupational workers.

ACRONYMS AND ABBREVIATIONS

Acronym/Abbreviation	Meaning
ADRS	Applied Development Research Solutions
CEDEFOP	European Centre for Development of Vocational Training
EU	European Union
EUSP	EU Skills Panorama
ENRLMM	European Network for Labour Market and Monitoring
DHET	Department of Higher Education and Training
DPRU	Development Policy Research Unit
HE	Higher Education
HSRC	Human Sciences Research Council
HRDC	Human Resource Development Council
HRDSA	Human Resource Development South Africa
ILO	International Labour Organization
LMIP	Labour Market Intelligence Project
LMSPUI	Labour Market and Skills Planning Intelligence Unit
LMEM	Linked Macro-Education Model of South Africa
LMI	Labour market intelligence/labour market information
LMIP	Labour Market Intelligence Project
MEMSA	Macro-econometric Model of South Africa
OECD	Organization of Economic Co-operation and Development
SA	South Africa
SAQA	South African Qualification Authority
SETA	Sector Education and Training Authorities
SSC	Sector Skills Councils
STEP	Skills Towards Employability and Productivity programme
TVET	Technical Vocational Education and Training
UNESCO	United Nations Educational, Scientific and Cultural Organization

1. Introduction

This report presents the research team's findings on the achievements and challenges experienced in the establishment of a credible mechanism for skills planning in South Africa. It also reflects on the processes that are in place in South Africa to build on previous achievements and to address challenges. It then outlines possible lessons to be learned from international skills planning experience in general and EU in particular and begins to point to ways that this learning can be deepened and utilised to test and further strengthen the proposals for a skills planning mechanism for South Africa.

The ToR states the following specific objectives for the assignment:

- Review the South African approach to, and experience of, skills planning;
- Review international experiences of skills planning, in particular in those countries (and from those international institutions) which exhibit 'good practices' in the field;
- Benchmark South Africa's approach against international experience in order to:
- Identify the strengths and weaknesses of the current system;
- Identify the nature and characteristics of good practice that could be adopted in South Africa, so as to develop a more effective system for skills planning.

In order to achieve the above objectives, the research team was expected to pay particular attention to the following:

- The arrangements for the provision of 'information and analysis with regard to the supply and demand for skills' ('labour market intelligence' - LMI). This would include, but not be limited to: 'insight' into current needs, 'foresight' into future needs; and, perhaps most importantly, 'misalignment' between supply and demand in the form of skills shortages, gaps and in migration (implying excess demand) and in the form of unemployment, underemployment and out migration (implying excess supply). In particular, it will develop a framework within which the information can be systematically and coherently presented;
- The tools, regulatory frameworks, institutions and frameworks through which labour market intelligence (LMI) is 'translated' into a 'credible mechanism' for skills planning. This will entail an understanding of (i) what LMI is considered most relevant and appropriate; (ii) the purposes of that LMI; (iii) the ways in which the LMI is used; and (iv) to what end(s). In particular, the team is supposed to focus on 'how' LMI is actually utilized in order to address skills supply, demand and the mismatches between them, i.e. what tools and mechanisms can be developed to ensure that the LMI influences the decisions and behaviour of key actors so as to obtain a better balance between skills supply and skills demand?
- What governance arrangements would be most effective in enabling greater coordination of policy and funding, enhanced integration and planning, so that the implications of the LMI are able to be effectively acted upon, through the gradual abolition of policy and funding silos;
- The means by which countries address: the strategic relationship with employers/business in respect of securing a better alignment of skill needs and skills available and; the ways in which employers are effectively involved in improving the labour market relevance of education, training and qualifications so as to enhance employability and better meet future skill needs;
- Identification of the potential capacity building required in South Africa, if a credible institutional mechanism is to be effectively put in place. This could include addressing issues of technical capability, management and leadership and political commitment.

The purpose of the study is to provide practical inspiration to the ongoing effort to refine the labour market forecasting and skills planning process in South Africa rather than to conquer new theoretical land. Therefore, when discussing the systems and procedures of the selected countries we have made an effort to focus on the practical dimensions of skills planning, i.e. the specifics of skills planning in the different countries in order to provide insights into the operationalization of the skills planning systems.

This analysis was based on a review of literature in South African and internationally. It also integrated feedback from key role players at a number of key points in the process of developing this report. This included feedback during two workshops (the first was with the reference group on the 9th December 2014 and the second workshop was with a wider audience and was held in Pretoria on March 25th, 2015). In addition, team members engaged further with key role players during meetings and as part of

structured interviews. This research has enabled the team to develop proposals about possible countries to visit and the questions that need to be explored to enable the international experience to be effectively utilised to support the establishment of a credible institutional mechanism for national skills planning in South Africa and to shape the capacity building efforts associated with this.

In short, the main findings of the study are that (i) not even the most sophisticated forecasting models can substitute for consultative processes involving the social partners, based on mutual trust and respect; (ii) while the central government plays an important role in terms of labour market forecasting and setting the framework conditions for TVET and HE, in order to allow flexible and quick responses to skills imbalances it is essential that the individual education institutions are empowered to respond to skills needs and opportunities within their domain; (iii) there is nothing like one size fits all. There is a multitude of skills planning tools and mechanisms available such as quotas, budget ceilings, bursaries, incentives schemes etc.; and (iv) labour market prognoses are indicative only and should be used with considerable care. Skills planning deals with human beings, and their expectations and aspirations may not necessarily coincide with those of the policy-makers and planners. Skills planning involves a multiplicity of actors the behaviour of which is difficult to predict and many TVET and HE provider and outside of the government's control and may therefore not respond to the applied skills planning tools.

2. METHODOLOGY AND APPROACH

The study's findings pertaining to South Africa draw on reports and documents that have been produced in a number of processes as well as interviews and discussions with selected role-players and resource persons within South Africa. In addition to these findings, the records of key meetings and processes have been considered.

The international component of the report focuses on overarching learning and on learning from individual countries. The report outlines approaches to, and models for, labour market monitoring and skills planning which have been developed and implemented by multinational organisations such as Cedefop on behalf of the EU, OECD, ILO, the World Bank and UNESCO. However, as these models are at a rather aggregated level and therefore have little to contribute in terms of the practicalities of skills planning, this section is kept relatively short. In addition, the research team reviewed information about skills planning systems and practices in a number of European countries considered of particular interest to South Africa. These are Sweden, Germany, Denmark, the Netherlands, the UK (including Scotland), Ireland and the Czech Republic. Furthermore, the skills planning practices of the US, Canada, India, Singapore and Malaysia were reviewed.

The research found that whilst a rich literature exists on skills strategies, labour market monitoring practices and the various approaches to and methods for gathering labour market information in the EU member states, it proved surprisingly difficult to obtain information on skills planning routines, especially how the labour market information is translated into specific use. The reason for this is believed to be the complexity of this process. Usually it involves a number of stakeholders, including the (public) funding agency, private sector and labour representatives as well as the education/training institutions. Furthermore, the way skills planning takes place is substantially different at the tertiary (higher education) level and the TVET level. Only in-country visits would allow full insight into the details of how skills planning is practised in the individual EU states.

The final chapter of this report reflects on the international learning and highlights the implications for South Africa. In doing this cognisance will be taken of the policies and agreements already in place (White Paper on post schooling education and training as well as agreements realised in the HRDC) as well as proposals being made (notably by the DHET itself as well as by LMIP which has set out a number of key proposals pertaining to a possible skills planning mechanism). It will also reflect on the international learning taking into account the issues highlighted in this paper – by interviewees and the team – and against the international examples and literature that have been provided.

3. south african approach to, and experience of, skills planning

South Africa over the past two decades has made significant but only partially successful efforts to establish a skills planning system. The need for skills planning is outlined in the Skills Development Act (1998²) and subsequent Amendments,³ and is reiterated in NSDS III. More recently, the imperative of putting in place an effective skills planning mechanism features prominently in the Medium Term Strategic Framework (2015-2019). The MTSF (2015-2019)⁴ states that, 'by 2030, South Africa should have access to education and training of the highest quality, leading to significantly improved learning outcomes. The education, training and innovation system should cater for different needs and produce highly skilled individuals. The graduates of South Africa's universities and TVET Colleges should have the skills and knowledge to meet the present and future needs of the economy and society and indicates that one of the key outputs for achieving this is the 'establishment of a credible institutional mechanism for labour market and skills planning'⁵.

However the definition of the term skills planning is contested, both within South Africa and globally, and it has different meanings to different people. To some it is understood as the identification of skills needs and assessment of the balance between supply and demand. To others it is about translating labour market intelligence and information into practical planning and action and interventions to address skills shortages and imbalances. As will be shown below though, whilst this definition has evolved in the South African context there has been a consistent thread with regards to the need for information that can guide planning and implementation.

Soon into the new democratic South Africa, the Green Paper (1997)⁶ emphasised that a key principle of the strategy is that it 'is demand-led, with particular emphasis on the new skills and competencies needed by enterprises to support rising productivity and competitiveness, and on pre-employment and target group training linked to work experience to support better prospects for employment or income generation'. It highlights the need for information **for Strategic Planning**, and states that, 'the collection, analysis and dissemination of information on labour market trends and work opportunities and their implications for skills development is essential if investments in education and training by government and the private sector are to improve. The responsibility for generating this information will be a partnership between the proposed National Skills Authority, Sector Education and Training Organisations,⁷ the Department of Labour and other government departments and agencies responsible for data collection as well as labour market and industrial research and analysis'. To achieve this the Green Paper emphasised the need for labour market and skills trends analysis, sectoral studies, review of government development projects and plans and learning from implementation.

The Department of Labour (2003⁸), states that 'initially, it was assumed that policy makers could use complex econometric models in an attempt to identify the precise nature of their manpower requirements' (page 3). However they indicate that it has since been recognised that 'labour markets are more complicated and unpredictable than these models assume' (page 3). They suggest that as a consequence there has been a growing shift towards labour market analysis or signalling. The document highlights the indicators that have the most relevance for skills development and states that 'In the past, the manpower planner guided public sector expenditure on training, but in a market economy the planner should focus on providing the information required to guide local level decisions on skills development, with regard to skills that are in high demand and with regard to training or re-training decisions by local level actors' (page 4).

More recently, the White Paper on Post-schooling education and training,⁹ argues that if the provision of

² Skills Development Act, no. 97 of 1998, [assented to 20 October, 1998].

³ Skills Development Act, 1998 and subsequent amendments: Skills Development Levies Act 9 of 1999, Skills Development Amendment Act 31 of 2003, Skills Development Amendment Act 37 of 2008, Higher Education Laws Amendment Acts 26 of 2010.

⁴ This was preceded by the Delivery Agreement between the DHET and the Presidency (2010).

⁵ MTSF, Outcome 5 (2015-2019), Dated, 2014-08-11.

⁶ Green Paper, Skills Development Strategy for Economic and Employment Growth in South Africa, Department of Labour, March 1997.

⁷ This subsequently changed to Authorities hence SETAs rather than the original acronym SETOs.

⁸ State of Skills in South Africa, Skills Development Planning Unit, Department of Labour, 2003.

⁹ White Paper for Post-school Education and Training, Building an expanded, effective and integrated post-school system, As approved by Cabinet on 20 November 2013, Higher Education and Training page 58.

education and training is to be better coordinated with the needs of society and the economy, central information about skills needs is required. Planning on a sectoral basis can be misleading, as many occupations are economy-wide. Identifying current and future demand as accurately as possible is extremely important if the goals of the National Development Plan, the New Growth Path and the Industrial Policy Action Plan are to be achieved. If properly researched and credible skills plans can be produced, they will enable much better targeting of resources for education and training and assist in managing wider government processes more effectively (page 58). The White Paper explains that there is a need for effective skills planning will be able to inform:

- Supply-side planning in post-school institutions;
- Priorities for funding of students by institutions such as the National Student Financial Aid Scheme;
- Sector, industry, regional and employer plans;
- Strategies for attracting skilled personnel from abroad in the short to medium term, while domestic capacity is being built;
- The allocation of resources to develop qualifications and learning programmes that are relevant to the needs of the labour market; and
- Funding norms that determine which programmes are funded.

In summary, the above highlights that in a South African context the assumptions about what is possible with respect to 'skills planning' has evolved over time and there has been an increasing understanding, at least within the policy context, of the limitations of skills planning and the challenges associated with econometric modelling and "manpower planning." What is consistent is that in South Africa skills planning refers to both the collection and analysis of labour market intelligence and information on the supply of and demand for skills, and to the use of such data and analysis for the purposes of planning, resource allocation, and interventions to address both current and anticipated skills requirements. This requires a skills planning mechanism that ensures that¹⁰:

- We have the skilled people we need to meet the demands of a changing economy;
- Skills developments are demand led; that Technical, Vocational Education and Training (TVET), and Higher Education (HE) are responsive to demand;
- Skills supply and demand are effectively aligned;
- The employment outcomes of education and training are positive.

The extent to which this definition resonates with the international experience will be reflected upon in this study and comment made in this regard. Critically, the study will reflect on the extent to which the concept of planning is utilised and the emphasis that is placed globally on establishing broader signals rather than on planning against actual numbers in the medium to long term. As indicated this is consistent with the policy statements made in South Africa though despite this, as will be shown in this section, emphasis continues to be placed on determining actual targets with respect to current shortages as well as medium to longer term.

3.1 LEGISLATIVE AND INSTITUTIONAL ARRANGEMENTS SUPPORTING SKILLS PLANNING IN SOUTH AFRICA

South Africa currently has multiple institutions that play a role in skills planning. These structures have evolved over time, and were originally conceptualised within the context of a Department of Labour¹¹ as the Department that was responsible for skills development (NSA, NSF, SETAs and the implementation of learnerships and skills programmes). In addition, institutions within the Department of Education¹² were also included within the conceptual picture of the skills planning landscape, as the Department of

¹⁰ The Supply and Demand for Skills: Towards a framework for establishing a credible institutional mechanism for skills planning in South Africa, Professor Mike Campbell, November 2014. A paper prepared for the EU/South Africa Skills Dialogue on Skills Planning.

¹¹ The responsibility for skills development – and associated structures – have since been transferred to the newly established (2009) Department of Higher Education and Training.

¹² The Department of Education has since been reconfigured and has become the Department of Basic Education, which focuses on schooling, and adult basic education and training. The responsibility for FET and HET provision has since moved to the newly established (2009) Department of Higher Education and Training.

Education was responsibility for all public providers including FET and HET institutions. Since 2009 these responsibilities are all those of the Department of Higher Education and Training.

3.1.1 Institutional landscape for skills planning: 1998

The section that follows outlines those institutions that were put in place by the Skills Development Act (1998)¹³ to support skills planning.

The SDA (1998) introduced the Skills Development Planning Unit and stated that the function of the Unit would be to:

- Research and analyse the labour market in order to determine the skills development needs for; (i) South Africa as a whole; (ii), each sector of the economy; and, (iii) organs of state;
- Assist in the formulation of the national skills development strategy and sector skills development plans;
- Provide information on skills to the Minister, the National Skills Authority, SETAs, education and training and skills development providers and organs of the state, skills development forums in each province, the Quality Council for Trades and Occupations (QCTO) and other interested parties

This Unit was later removed in the 2008 Amendment Act;¹⁴ interviewees indicate that this decision took into account the fact that the Department of Labour already had a research unit and it was felt that it would be preferable to integrate the skills development planning unit's research functions into the overall research work of the Department.

The Skills Development Act also instituted the National Skills Authority; to advise the Minister on-

- A national skills development policy;
- A national skills development strategy;
- Guidelines on the implementation of the national skills development strategy;
- The strategic framework and criteria for allocation of funds from the National Skills Fund; and
- Any regulations to be made.

The NSA was also tasked with the responsibility of liaising with SETAs on-

- The national skills development policy
- The national skills development strategy; and
- Sector skills plans.

The SETAs, are the other key structures that were established for skills planning. The Skills Development Act allocates the SETAs a number of responsibilities including: the development of a sector skills plan within the framework of the national skills development strategy. The SETAs were also allocated the responsibility for ensuring the implementation of this sector skills plan through a number of mechanisms including by encouraging partnerships between the public and private sectors of the economy to provide learning in and for the workplace; and enabled in part by a skills development levy-financing scheme as contemplated in the Skills Development Levies Act.

3.1.2 Emerging institutional landscape for skills planning: 2009 and beyond

In 2009 the Department of Higher Education and Training was constituted, and the possibilities associated with a Department that integrated skills development, FET and HET created the space to review the policies associated with post-schooling, including skills planning. The White Paper for Post-school Education and Training signals the emerging policy direction for skills planning (as referred to previously in this paper) and indicated the roles that key institutions would play in this regard.

The White Paper re-instituted the Skills Planning Unit suggesting that it would take responsibility for many of the functions that were part of the Skills Development Planning Unit. It indicated that, "DHET will establish a Skills Planning Unit which will work with key public institutions, such as universities and other research institutions, to develop an institutional mechanism for skills planning. Once established, this

¹³ Skills Development Act, no. 97 of 1998, [assented to 20 October, 1998].

¹⁴ Skills Development Amendment Act 37 of 2008.

institutional mechanism will conduct its work within the broad framework of the Human Resources Development Plan and the National Development Plan and will become the location for engagement with the key economic departments of government. The planned institutional mechanism will become a repository of labour market information, will develop skills demand forecasting models, and will promote and build labour market research and analysis skills for the country.¹⁵

The White Paper also confirmed the continued need for SETAs, albeit emphasizing the need for greater focus and improved performance. It indicated that, “the SETAs as currently established will work with the Department’s Skills Planning Unit to develop the central planning mechanism. SETAs provide important workplace data, and will continue to conduct sector research and ensure that the sectoral implications of this economy- wide analysis are explored. They will engage stakeholders, test emerging research findings, and determine whether these are consistent with their understanding of where their sector is heading¹⁶.

Further, the White Paper also confirmed the importance of the NSA, but stated that its role would change, and that a, ‘restructured and refocused National Skills Authority will concentrate specifically on monitoring and evaluating the SETAs. This implies that it will become an expert body with high- level monitoring and evaluation skills’. The White Paper also confirmed the importance of SETAs, though it signaled the need to focus on the improved performance of SETAs through focusing its roles and responsibilities. It indicated that it envisaged that the SETAs will play a continued role in skills planning.

In addition to the above mentioned institutions there are a number of other institutions that play a role in skills planning. This includes the National Planning Commission, which sets out the vision for 2030 and in particular highlights quantifiable targets for skills development based on an analysis of what is required. In addition, Cabinet established the Presidential Infrastructure Coordinating Committee (PICC), to coordinate, integrate and accelerate implementation of a National Infrastructure Plan. The Plan includes 18 strategic integrated projects and DHET is responsible for determining the skills requirements of these projects at a national level as well as at a local level. DHET has established Occupational Teams to map the skills demand and supply requirements. Further the Department of Higher Education and Training is a member of the economic cluster and as such this cluster plays a role in the coordination and planning of skills planning. The Human Resource Development Council (HRDC) is a multi-stakeholder body that has a number of responsibilities including the translation of the HRDSA into a plan which sets out the areas which will be investigated by Technical Task Teams consisting of key role players. The plan also sets out the indicators that will be utilised to determine the success of the interventions agreed upon through this Technical Task Team process. It is envisaged that the HRDC will take responsibility for the monitoring and evaluation of the plan and its contribution to the achievement of the HRDSA. In addition the quality assurance bodies (South African Qualifications Authority, Quality Council for Trades and Occupations, Council on Higher Education and Umalusi) all have responsibility for establishing which qualifications are most in demand so that these can be prioritised for development, and for monitoring the extent to which there is take up of these qualifications. Finally at a Provincial level there is a skills plan against the Provincial Growth and Development Strategy and at local level local government takes responsibility for an Integrated Development Plan and many local authorities then develop skills plans against these Integrated Development Plans. More recently the Department of Trade and Industry is also proactively working with the Special Economic Zones, many of whom are also actively developing skills plans.

There are also a range of structures that are specifically responsible for public sector skills planning as well as a number of employer associations that take responsibility for skills planning. These associations work with employers in their industry in order to understand their skills requirements and to consider ways that they can collectively address shared priorities.

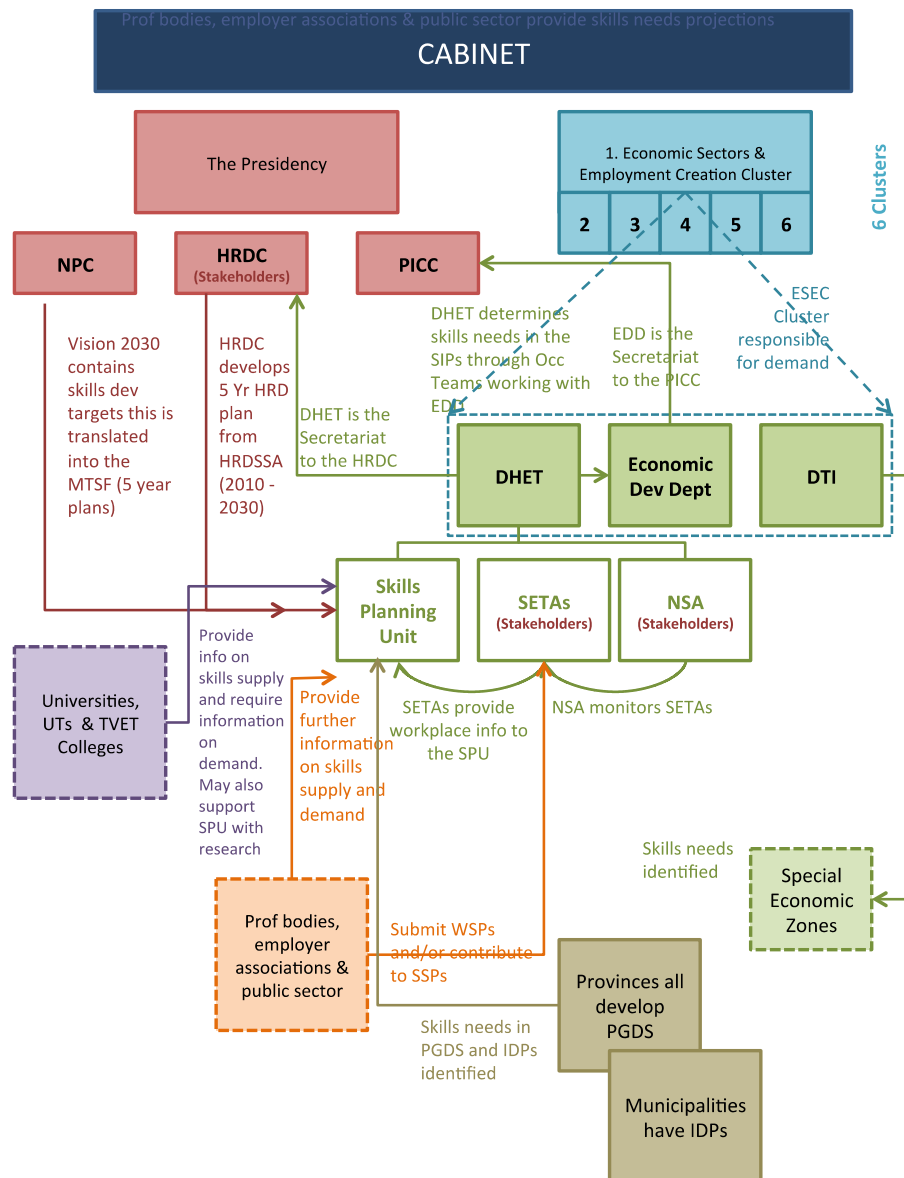
These arrangements are given expression in the following diagramme¹⁷. This attempts to capture the plethora of institutions, the multiplicity of planning processes and the complexity of reporting lines.

¹⁵ White Paper for Post-school Education and Training, Building an expanded, effective and integrated post-school system, As approved by Cabinet on 20 November 2013, Higher Education and Training pages 58 – 59.

¹⁶ White Paper for Post-school Education and Training, Building an expanded, effective and integrated post-school system, As approved by Cabinet on 20 November 2013, Higher Education and Training page 59.

¹⁷ Note that the diagramme includes existing structures and relationships though the inter-relationship between the Skills Planning Unit, SETAs and the NSA are outlined as per the description in the White Paper though this has not been given practical expression yet.

Further, it shows the number of structures that have stakeholder involvement which emphasises the demands on constituencies (discussed more below) and the possibilities for confusion as to where targets are determined:



3.1.3 Complexity of the skills planning environment

The formation of the Department of Higher Education and Training has created the space for a greater level of integration across skills development, FET and HET institutions. However, the myriad of structures and strategies that are in place continue to create an environment that is complex to navigate. Research undertaken suggests that as a result of these institutional arrangements the strategies and plans of national, provincial, and local government, as well as those of civil society, business and organised labour, are typically not aligned. A number of reports also talk to the problems relating to a lack of clarity about roles, responsibilities and functions of different role-players and agencies at different levels. Related to this there is still considerable confusion as to which players are responsible for driving the different elements of the various strategies. Finally it is suggested that insufficient attention is placed on the

measurement of progress in relation to intended impact¹⁸. That is, there is little understanding of the employment outcomes of education and training (a key aspect of skills planning referred to previously). There is even less understanding of whether the analysis of skills demand is informing educational planning in a manner that is enabling a greater level of alignment between demand and supply.

Role players all argue that to effectively undertake skills planning there is a need to simplify the coordinating mechanisms. This also recognises that if a credible institutional mechanism is to be effectively put in place there is a need to address issues of technical capability, management and leadership and political commitment. In a 2004 report (Wilson, Woolard and Lee, 2004, co-authored by the HSRC) suggest that, 'although the capacity to undertake multi-sectoral forecasting was considered to be high, there were very real concerns about the quality of the available data'. However since then there has been considerable debate about whether such capacity is in place with numerous articles raising concerns about the continued emphasis placed on 'manpower planning' despite policy statements that recognise the limitations of this approach. There is also considerable debate about whether skills planning should be national, sectoral and local or a combination of these levels.

The kind of capacity that will be required is being explored within the Department and, as indicated, the White Paper sets out proposals pertaining to possible roles that the unit will need to play and the kind of research activities that the unit would need to support to enable it to fulfil its functions. It also outlines the different role players that are critical to the ability of the unit to achieve its intended purpose. This includes, as outlined above, the Sector Education and Training Authorities (SETAs) and National Skills Authority. Into this picture is the need to determine how the National Skills Fund will support the implementation of these plans. There is also a need to understand how processes unfolding under the auspices of the PICC (and specifically the Occupational Teams set up to ensure that the requisite skills are in place for each of the SIPS), the Human Resource Development Council (HRDC), the planning processes that are taking place within the Special Economic Zones all relate to the work of the Skills Planning Unit. Further, there is a need to determine how the information that is collected and analysed in SAQA, the CHE, QCTO and Umalusi all feed into the work of the Skill Planning Unit.

3.2 KEY INITIATIVES TO SUPPORT SKILLS PLANNING IN SOUTH AFRICA

The previous section emphasises the extent to which skills planning has received attention since the first democratic elections in 1994. It also highlights the institutional arrangements that are in place to support skills planning. Key initiatives to establish and support systems for skills planning and/or that articulate skills demand in South Africa are briefly outlined below.

The key initiatives at a national level¹⁹:

- a) The first Human Resource Development Strategy (2001-2005/2006 and the Human Resource Development Strategy for South Africa 2010-2030 frame the HRD requirements of the country. Both indicate the priorities for human resource development with particular emphasis being placed in the second strategy on the types of skills required to support economic development and innovation. More recently the HRD Plan has been developed under the auspices of the HRDC, which provides an indication of the areas of focus for the first four years of the HRDSA;
- b) The National Skills Development Strategy, which is a subcomponent of the broader HRDS and focuses on the skills priorities. It focuses on Professional, vocational, technical and academic learning (PIVOTAL) priorities as well as sector-based programmes;
- c) The National Development Plan, Vision for 2030, outlines a set of quantifiable targets for 2030 including those related to the number of graduates from further education and training colleges, the number of artisans, increased university science and mathematics entrants and etcetera
- d) The Skills Accord, which is a social compact, agreed upon by government, labour and employers sets out targets for skills development and identifies the actions that the players will undertake to meet these targets.

¹⁸ Drawn from a number of reports including those cited previously (Kraak, Allais) as well as Marock, C., Soobrayan, B. Draft Report: Study to Ascertain How Best to Plan, Coordinate, Integrate, Manage, Monitor, Evaluate and Report on the National Human Resource Development Strategy for South Africa. 2007. This study was commissioned by the Department of Education, under the auspices of a human resource development team which reported to a cluster of Ministers involved in economic development.

¹⁹ Note that these initiatives are framed by different pieces of legislation (notably the Skills Development Act and the Skills Development Levies Act and related).

- e) Developing a List of Occupations in High Demand: 2014, 38174, Government Notice, Department of Higher Education and Training, November 2014. This provides a list of the top occupations in the country that are considered to be in short supply. The Gazette notes that the purpose of the list is to inform, inter alia: human resource planning and development; resource allocation and prioritisation; the development of relevant qualifications, programmes and curricula; and international recruitment strategies. It also highlights the need for this list to enable the Minister of Home Affairs to compile a “critical skills list” to facilitate the issuing of work visas (as per the *Immigration Amendment Act of 2011 (RSA, 2011)*, which compels the Minister of Home Affairs to compile this list);
- f) Addressing the skills requirements of the SIPs: The National Infrastructure Plan is made up of eighteen Strategic Integrated Projects (SIPs) each of which consists of a large number of projects drawn from a wide range of economic sectors and stretching across all nine provinces of the country. A plan has been developed with the purpose of ensuring that the skills demands of these projects are realised both in advance of (for), and on the site of (through), the Strategic Integrated Projects (SIPs). This with the intention of informing education and training planners of the occupations in demand for the SIPs and to direct the attention of education and training planners as to the specific interventions that will be required to attend to projected scarcities in the future, so that they can consider how best to begin to address these. To leverage resources in support of these priorities (Skills for and through SIPs, What has been done and still needs to be done to skill South Africans for SIPs and through SIPs, Pretoria, September 2014, Department of Higher Education and Training (DHET), 2014);
- g) Further, the Department of Economic Development has, together with the DHET and Training, launched an initiative to understand the skills implications of key economic policies. This initiative is still in an embryonic phase although DHET is committed to working with these departments and taking the process forward;
- h) The creation of an information database for supply-side information managed by the DHET. This has been built on a well-established Higher Education and Training Management Information System and a slightly more embryonic Further Education and Training Management Information System. It also integrates data provided by the SETAs;
- i) The design and construction of a career advice information system; Support for the ‘Labour Market Intelligence Project’ (LMIP): This is a partnership that formally exists between the Department of Higher Education and Training and the Human Sciences Research Council (HSRC). HSRC is working with the University of Witwatersrand (through REAL) and DPRU. There is also research being conducted by the Education Policy Consortium (which is a consortium of research bodies whose main interest has been in the area of policy related research in education and training; this work is managed through the Centre for Education Policy Development (CEPD). This work is also intended to make a contribution to the growing understanding of skills development including, though not limited to, skills planning;
- j) The South African Qualification Authority (SAQA) as well as the Department of Labour and the provincial administrations have also established ad hoc initiatives aimed at estimating the demand for various categories of skilled labour.

At a sector level:

- a) SETAs have responsibility for sector skills planning: the Sector Skills Plans integrate the data from national databases such as the Quarterly Labour Force Survey as well as other relevant databases (for example in the public sector extensive use is made of PERSAL which is an electronic personnel system for the public service in South Africa). In addition the Sector Skills Plans (SSPs) includes data from the Workplace Skills Plans, and in some Sector Skills Plans, the views of key role players in the sector are also captured.

At a Provincial level:

- a) There are Provincial HRD and Skills Plans, which articulate the anticipated demand in the Province and the implications for skills requirements. These take into account the Growth and Development Strategies of the Province.

At regional/local levels:

- a) There are also initiatives at a local level – these are not systemic but many local authorities develop skills plans that align with their local economic development plans. In addition, there are

also initiatives within the Special Economic Zones to explore the skills required and the relationship between supply and demand in these areas;

- b) In addition public education and training institutions (both higher education and training and further education and training) are required to undertake an analysis of demand in order to inform the plans that they submit to the Department of Higher Education and Training.

There are a number of initiatives within the private sector to understand skills needs and to plan accordingly.

These initiatives were preceded by a number of other initiatives to address skills planning. Notably this includes the Joint Initiative on Priority Skills Acquisition (JIPSA). JIPSA was widely seen as very successful at bringing together high-level stakeholders to focus on solving urgent and specific problems in the skills development 'pipeline.' This included a particular focus on identifying the demand for engineers, artisans and planners and then determining the implications of this for supply. For example, for the goal of increasing the supply of engineers, business allocated additional bursaries, and made workplaces available for both technicians and engineers to get work experience. The Department of Education increased funding for engineers, and gave universities funds to improve their facilities.

3.3 THE CHALLENGE OF, AND POSSIBILITIES FOR, ALIGNING DEMAND AND SUPPLY

Yes despite the considerable focus that has been placed on skills planning in South Africa, as evidenced by the number of initiatives listed above, there has been a consistent voice that has bemoaned the absence of relevant skills. The perceived need for the Joint Initiative on Priority Skills Acquisition (JIPSA), established in March 2006, was the belief was that "while the economy had started to grow, education was seen to be experiencing problems"²⁰ The then Deputy President argued, "In a period of growth it is evident that we lack sufficient skilled professionals, managers and artisans, and that the uneven quality of education remains a contributory factor."²¹ Similarly, the Business Trust²² argued that it was "the shortage of priority skills which was holding up economic growth and employment creation". Recent research suggests there continues to be a strong voice of concern that there is an inadequate understanding of demand and there is not the capacity to translate the insights that have been developed in a manner that informs supply. A review undertaken under the auspices of the HRDC (Alignment of Sector Skills planning to the NDP, 2012, page 3²³) observes that 'despite high levels of investment in skills development over the last decade, there continues to be a strong argument that South Africa suffers certain challenges with respect to the supply of skills as well as an absence of an alignment between national growth imperatives and skills development activities.

The explanation for the misalignment of supply and demand is often related to the challenges relating to the quality, relevance of, and access to, provision. These risks, associated with a poor supply of skills, are a common theme in the range of planning frameworks that govern strategies for economic growth including 'The New Growth Path' and IPAP2. The weakness of the schooling system, combined with limited opportunities for quality post-school education and training, places increasing risk on the country's ability to generate a sustainable skills base and threatens to contribute to low levels of job creation and high unemployment. As a result, the economic growth strategies indicated above are, by implication, under threat'.

On the other side there are a number of concerns raised by those individuals that are responsible for the education and training provision about the absence of signals that enable them to effectively steer education and training. Individuals responsible for these areas highlight the absence of consistent information about what the priorities will be for the next 5 years (particularly for TVET programmes) and 10 years (for higher education programmes).

²⁰ Kraak A, Press K (Eds), 2008, cited in Planning, Plumbing or Posturing, "Human Resource Development and the South African case" Stephanie Allais, Carmel Marock, and Siphelo Ngcwangu, Centre for Researching Education and Labour, University of the Witwatersrand, Paper to be presented at the World Congress of the International Labour and Employment Relations Association Cape Town 7-11 September 2015.

²¹ Media Briefing by Deputy President Phumzile Mlambo-Ngcuka, 6 February 2006, Background Document: A Catalyst for Accelerated and Shared Growth-South Africa (ASGISA).

²² Business Trust, Completion Report on the Joint Initiative for Priority Skills Acquisition (JIPSA), 31 March 2010, page 4

²³ Marock, C., Yeowart, S., & Gewer, A, Singizi (2012), Alignment of Sector Skills Planning to NGP.

3.3.1 Challenges in translating demand to inform supply

An interviewee from higher education explains that they have a clearly defined process for reviewing plans for Higher Education, which includes an initial meeting with all Higher Education institutions to indicate national priorities. This is meant to inform the institutional planning processes that follow. However the interviewee indicates that they do not have sufficient information to provide to these institutions beyond the broad areas of priority identified in the Ministerial Statement on student enrolment planning (2014/15 – 2019-20) for Universities. An interviewee from further education states that planning for TVET is in a more embryonic stage, as compared to higher education, and indicated that at this stage they review the institutional plans at a national level for coherence. The interviewee explained that the Department is not yet able to evaluate the extent to which these plans are aligned to demand within the Province. The interviewee indicates that they would like to be in a position to inform TVET colleges about the skills priorities but explain that the absence of reliable data also makes it difficult for them to provide this guidance or to steer planning and allocate funding such that they meet identified demand. Similarly those involved in career guidance highlight the absence of information to enable them to guide individuals effectively and this concern is echoed loudly by individuals in the Department of Home Affairs responsible for issuing visas relating to scarce skills.

An example of the above-mentioned challenges can be seen in the ways in which SETAs engage. A review of the SETAs (Minister Task Team on SETA Performance) suggests that there is insufficient translation of this analysis of skills demand into the supply sector: in many cases, SETAs are working with individual education and training providers in an ad-hoc manner on specific projects, and whilst a system has been put in place to formalize the relationship between SETAs and the public FET Colleges (including a person based in the colleges and a mechanism for SETAs to fund programmes in the FET colleges as well as lecturer development) there is still no system for articulating demand in a manner that enables FET and HET providers to understand the demand that is emerging and the implications for supply. Nor is there a clear distinction made between the skills that could be developed in the short term and those that require a 5-7-year time horizon.

3.3.2 Challenges relating to determining demand in the first place

These challenges relating to the misalignment between demand and supply relate in part to the inability of institutions of learning to respond to the demand in relevant ways. However many of these challenges also relate to (i) the approaches to skills planning that are utilized in South Africa and (ii) the absence of focus and a failure to prioritise; and, (iii) emphasis on ensuring that skills meet demand without a concomitant focus on the imperative to create demand for skills.

One aspect of the challenges relating to the approach to skills planning that are utilized in South Africa²⁴ pertains to the extent to which the data and methodologies for planning that are employed enable medium to long term planning. Wilson et al.²⁵ list as the main approaches to skills forecasting: formal, national level, quantitative model based projects; sectoral studies; employer surveys; and focus groups or round tables and documents highlight the need for a clearer alignment of methodological choices and purpose of planning process, that is there is a need to refine the methodologies used to understand short term demand versus medium to long term. However in South Africa there is a notable absence of a process to align methodological choices with planning processes.

A key source of LMI is the routine data collected by StatsSA. There is also routine data collected by private organisations and by various associations. In addition there is data that is sourced from the Department of Labour that provides information about vacancies. There is also ad-hoc research undertaken. Further, one of the key sources of LMI in South Africa is that collected by the SETAs through the annual Workplace Skills Plan (WSP) and Annual Training Report (ATR) submission process.

With respect to determining national demand there are a number of challenges pertaining to the above-mentioned data sources. The Stats SA data does not include certain critical answers to key questions

²⁴ Drawn from several papers developed by Singizi for HRDC as well as for DPRU.

²⁵ Wilson, R. (2004). *Developing a National Skills Forecasting Tool for South Africa, Annex B: Labour Market Projections: A Review of International Best Practice*. Institute for Employment Research University of Warwick.

required to understand the details of the occupational profiles within the workplace or the training that has enabled individuals to access the workplace. Further, WSP and ATRs, which are also a key source of data, are currently collected on a sectorial basis and although there is a national template there is considerable variance in the manner in which these processes are implemented. For this reason it is difficult to effectively utilise this data in the national planning process. In addition much of this data shows historical patterns and current trends *but does not provide a basis for future planning*.

Arguably the level of planning that is the most developed is at a sectoral level as the SETAs have developed considerable experience in this regard. Daniels (2007)²⁶ makes the point that the plans undertaken by SETAs provides essential information on the relationship between 'micro (firm) level data, sectoral aggregation via the Sector Skills Plans, and the national aggregation' and by so doing 'represents a highly coherent framework for (firm-level) data collection that facilitates both the analysis and implementation of policy' (Daniels, 2007: p.5). Powell provides an example of the value of the SSP data and points to the learnership study undertaken in 1997, which utilised the SSPs to provide an assessment of the training needs of early childhood development practitioners²⁷.

However the paper developed under the auspices of the HRDC (Singizi, 2012) notes that there are a number of challenges in this regard. SETAs are expected to develop 5-year Sector Skills Plans, which are reviewed and updated annually. While some SETAs undertake detailed labour market surveys and analyses, the capacity of most SETAs to adequately profile the skills demands (both current and future) in their respective sectors is limited. This is in part because the national data does not lend itself to a sector analysis as the classification systems used by StatsAS are not consistent with the sector boundaries of the SETAs. The absence of data collected at a national level that can be used to support a sector analysis results in an over-reliance on employer-level data much of which is derived from the workplace skills plan and Annual Training Reports. As indicated previously, these limitations have adverse consequences as the available data only supports an analysis of immediate skills demand rather than skills demands for the future, a problem which is compounded in some sectors by the questionable accuracy and scope of this employer-level data. The data collected from these processes is aggregated and drives target-setting for occupational groupings within the sector and this informs the 5 year SSP. As a result, skills-planning is concerned primarily with meeting immediate scarce and critical skills shortages rather than future demand.²⁸

There are similar challenges at other levels of the system and an absence of data and a methodology to understand supply and demand at provincial and local levels. This is a particular challenge at a local level as the data typically cannot be drilled down to this level in a manner that allows for a clear picture of stock and flows in the geographic area. Further, across each of the levels there is the frequent concern raised that the data does not talk to the informal economy and that a methodology to address planning in the informal sector has not yet been conceptualised.

Wilson et al.²⁹ list as the main approaches to skills forecasting: formal, national level, quantitative model based projects; sectoral studies; employer surveys; and focus groups or round tables and documents highlight the need for a clearer alignment of methodological choices and purpose of planning process, that is there is a need to refine the methodologies used to understand short term demand versus medium to long term.

3.3.3 The absence of focus and failure to prioritise

²⁶ Daniels, R. (2007). Skills shortages in South Africa: A literature review, DPRU Working Paper 07/121. Cape Town: Development Policy Research Unit, University of Cape Town.

²⁷ Research on Technical and Vocational skills facilitating integration into the labour market from reconstruction to deconstruction – the role of research in South African skills Development, Lesley Powell, School of Education, The University of Nottingham, UK, Peliwe Lolwana, Director, Education Policy Unit, Witwatersrand Uni., RSA, February 2012, Norrag/ Rocare/ERNWACA.

²⁸ This is reflected in the following definition: 'scarce' skills [refers to] those occupations for which employers cannot find or retain appropriately qualified and experienced people, i.e. with appropriate occupational competence and 'critical' skills [refers to] those occupations for which employers can find and retain qualified and experienced people who require some additional training or up-skilling to attain appropriate occupational competence (Guide for Identifying & Addressing Scarce & Critical Skills in the Mining & Minerals Sector, MQA, p. 11).

²⁹ Wilson, R. (2004). *Developing a National Skills Forecasting Tool for South Africa, Annex B: Labour Market Projections: A Review of International Best Practice*. Institute for Employment Research University of Warwick.

The **absence of focus and a failure to prioritise** is a challenge that emerges in relation to many of the initiatives outlined in the previous section. These national strategies provide an indication of the types of qualifications and/or skills that will be required in the longer term. However, this section raises questions about the extent to which these strategies provide a response to the on-going conundrum of supply and demand.

The first Human Resource Development Strategy aimed to ensure that the various components of the state work together in a coordinated way to deliver opportunities for *human development*³⁰ and the second states that it has adopted a short- as well as medium-term perspective. It observes that, 'there are certain areas of priority economic growth that require us to overcome the skills shortages which are constraining growth and investment over the short term. But effective and credible HRD cannot depend entirely on short-term measures. The focus of this strategy is therefore equally on medium and long-term perspectives. The HRD-SA is therefore explicitly designed to respond to the imperatives of urgency and sustainability' (HRDSA, page 8). The National Skills Development Strategy III,³⁰ which is described as a sub-component of the HRDSA, states that, 'the NSDS is the overarching strategic guide for skills development and provides direction to sector skills planning and implementation in the SETAs. It provides a framework for the skills development levy resource utilisation of these institutions as well the NSF, and sets out the linkages with, and responsibilities of, other education and training stakeholders' (page 8). It indicates that the strategy is informed by the requirements of the New Growth Path, the Industrial Policy Action Plan, the outcomes of the Medium-Term Strategic Framework, the rural development strategy as well as the new environment strategy, amongst other priorities of government.

Yes despite these national strategies that articulate the imperatives for skills development those involved in planning the provision of education and training state that these strategies do not provide an adequate signal of what is required by the labour market. Individuals responsible for economic planning and strategies suggest that the lens continues to be one of supply. Other concerns that have been raised pertain to a focus is too broad and does not allow for a prioritisation and that it is on numbers to be reached rather than quality, that the institutions that are meant to drive the plans are not clearly articulated and that there was no basis for measuring progress against the intended impact of the strategies – that is, little sense of how one would monitoring and evaluate whether supply and demand were increasingly aligned (or not) . The first HRDSA Strategy was strongly criticized by role players as part of the review that was undertaken prior to the development of the Second HRDSA³¹. This is captured well by Kraak³² who describes the first strategy as a disaster: 'At best it remained a policy text with ambitious goals. At worst it was a non-event, having failed to become an effective instrument for improved coordination in the arena of education and training'. Similar concerns have been raised about the second strategy and in particular it is critiqued for its lack of focus and a view that it represents an aggregation of plans rather than provides an analysis of demand and it is therefore once again unable to indicate the priorities for supply. An article raising the question about why JIPSA was needed at all, given that there was already a National Skills Development Strategy (NSDS) under the Minister of Labour, which purported to address the identical issues observes that, 'the short answer is that the NSDS was a closed system, whose implementation reach was circumscribed by the scale of levy funds collected and the inability of these funds to reach those public providers principally responsible for training in many of the critically scarce skill areas, such as engineers.³³ A further criticism of the NSDS that was raised relates to 'the failure of the new regime to transcend its historical genesis as a 'supply-side' training system³⁴'. The article continues and states that, 'the NSDS set several nationally-defined performance indicators which had to be met by each SETA. This obsession with meeting targets has produced certain unforeseen effects. Firstly, there is a definite performance indicator 'fatigue' as practitioners within the SETA system have had to chase these items at the expense of others areas of work. Secondly, Grawitzky (2006, 29) argues that the current mechanisms to measure SETA performance – which are all national targets – could inadvertently have led to a neglect of sectoral needs and activities. SETAs are required to deliver against the requirements of a national agenda – the NSDS – and are not measured as strictly with regard to

³⁰ National Skills Development Strategy III, Higher Education and Training.

³¹ Marock, C., Soobrayan, B. Draft Report: Study to Ascertain How Best to Plan, Coordinate, Integrate, Manage, Monitor, Evaluate and Report on the National Human Resource Development Strategy for South Africa. 2007.

³² Kraak, A, 2010, A critique of South Africa's National Human Resource Development Strategies, SA, Rev. Education, 16, 59-

³³ Policy transfer or policy learning: interactions between international and national skills development approaches to policy making in South Africa, Adrienne Bird and Werner Heitmann (GTZ), Paper prepared for the NORRAG Conference, Geneva 25 - 26 June 2009.

³⁴ A critical review of the National Skills Development Strategy in South Africa, Andre Kraak, Human Sciences Research Council, Cape Town, South Africa Published online: 14 Feb 2008, Journal of Vocational Education & Training.

delivery against their own Sector Skills Plan³⁵.

Interestingly, these findings can be contrasted with those of JIPSA, which was set up to address a number of key priorities. These had been identified through a number of research processes and extensive engagement of role players at a very senior level – CEOs of companies and Ministers within government. The approach adopted in JIPSA was to focus on ‘unblocking’ particular areas that were seen to be hindering the development of the required skills within these priority areas. JIPSA was generally considered to be a successful set of decisive interventions in a limited range of clear and focused priority areas. It further illustrated the value of bringing senior role players together to collectively determine the demand priorities where there were specific problems that affected them and develop a clear plan against which implementation could take place.³⁶ This highlights an experience of planning, which albeit limited and short-term in nature, highlights an approach to addressing demand and supply at a national level.

These challenges are also exacerbated by the concern raised previously, **which is that ‘governments have done little to change employer demand for skill**, by creating demand in the economy, or through creating mechanisms to increase employers’ utilization and development of workforce skills’.³⁷ Whilst there is an industrial strategy (multiple versions of IPAP) there is little evidence that government has the capacity to drive this strategy and it is instead reliant on the market to respond to incentives that are made available

3.3.4 *Emerging possibilities: chimera or real?*

Despite these challenges, there are though - as highlighted previously – **a number of initiatives past and present point to the possibilities relating to skills planning and the approaches that could be built upon to develop the ability of the system to forecast demand in the medium to long term.** This includes the learning from JIPSA as well as a number of possibilities emanating from current initiatives and research underway.

This paper has noted the initiation of the forum for Economic Departments coordinated by DHET that was established in terms of processes undertaken by the HRDC. Interviewees state that there have been real challenges in establishing traction with regards to this forum and highlight the difficulties encountered in generating a methodological approach to understanding the skills implication of economic policies and strategies. However the establishment of the forum is still considered an important step and could offer a space in which priorities for skills planning could be determined, and scenarios constructed that suggest the magnitude of the demand within these priorities and the possible implications for the skills required.

In addition the Presidential National Infrastructure Plan consisting of the eighteen Strategic Integrated Projects (SIPs) has been coupled with a process to understand the skills required for each of these projects. This analysis is undertaken in terms of occupations and reports produced from this process articulate the implications of this process for the occupational qualifications that will be required in the short, medium and long term. On the basis of this analysis of scarce skills SETAs have committed to fund training in these areas and colleges are now being approached to ascertain what role they can play. In addition interviewees explain that, linked to this, there has been work done to develop models of provincial and regional skills planning. This attempts to consider the growth areas within a province and in a particular region and to then plan supply to support these developments. This includes a pilot in Limpopo centred around SIPs (in Waterberg) and Medupi power station, as well as initiatives in the Western Cape that concentrate on the requirements of one of the SEZs. These processes also offer possibilities for the way in which skills planning could be approached.

³⁵ A critical review of the National Skills Development Strategy in South Africa, Andre Kraak, Human Sciences Research Council, Cape Town, South Africa Published online: 14 Feb 2008, Journal of Vocational Education & Training, page 15.

³⁶ Kraak, 2010 and Business Trust 2010 cited in Planning, Plumbing or Posturing, “Human Resource Development and the South African case” Stephanie Allais, Carmel Marock, and Siphelo Ngcwangu, Centre for Researching Education and Labour, University of the Witwatersrand, Paper to be presented at the World Congress of the International Labour and Employment Relations Association Cape Town 7-11 September 2015.

³⁷ Rainbird, 2010, cited in the Development of Occupational Standards in English-speaking countries, A report prepared for the International Labour Organization, Moscow Office, 8th November 2012, Stephanie Allais, Carmel Marock, and Palesa Molebatsi, Centre for Researching Education and Labour, University of the Witwatersrand.

These initiatives all relate to areas where the state is directly responsible for the expenditure (in the case of the SIPS) or is attempting to drive development (as with the economic departments). This reinforces the point made previously that the ability to consider long term demand requires a centralised mechanism that is driving demand. The ability to develop longer term forecasts is, for the same reason, easier in the public sector than in the private.

- The LMIP, which is supported by DHET (and referred to previously), is undertaking extensive research to understand the possibilities associated with a skills planning mechanism for understanding current and medium to future term demand and the relationship between demand and supply. This research has focused on addressing a number of key questions, which provides a basis for considering approaches to skills planning and for developing options³⁸.

Further, the work being undertaken by DHET to revise the Workplace Skills Plan and Annual Training Report, which aims to improve the quality and credibility of firm level survey, could also allow for a greater understanding of current firm demand.

All of the above points to the vast amount of work that is being done to enhance skills planning at different levels of the system. It also demonstrates that the individuals responsible for planning the supply side and ensuring the effective implementation of provision are receptive to the concept of ensuring that supply aligns with demand. The description provided in this section suggests that the system has not yet managed to ensure that it embraces different methodologies in determining demand such that short term, medium term and long term demand can be understood in accordance with the multiplicity of purpose(s) associated with skills planning. Further, there has been a failure to focus on planning for priorities – the possibilities associated with focus is evidenced by the progress made with respect to the SIPS however beyond that the emphasis continues to be on planning across the system at all levels. The experience though suggests that this is very complex and costly.

3.4 STRATEGIC BUSINESS/EMPLOYER ENGAGEMENT

Employers feed into the process of understanding demand in multiple ways. At a national level they are involved in the Human Resource Development Council of South Africa and the National Skills Authority, which amongst other responsibilities agrees upon the National Skills Development Strategy. They are also part of SETA Boards, which finalise the Sector Skills Plans. In a few of the SETAs employers are interviewed to ascertain their current and projected demand. In particular, the Workplace Skills Plan (WSP) and the Annual Training Report (ATR) collects information from employers about skills priorities, current stock, vacancies, and training plans. The WSP seeks to understand how an individual employer intends to address the training and development needs of the workplace in the forthcoming year. The Annual Training Report then provides information on what training was conducted in the previous year. In terms of the Skills Development legislation, employers with more than 50 employees are required to submit a WSP/ATR by 30th June each year (until 2013 and changed to 1st April from 2014) if they wish to claim their mandatory grant, a portion of the Skills Development Levy (SDL) paid by all employers with more than 50 employees. Over and above these mechanisms, employers are also involved in shaping qualifications through the QCTO and in this way, where they actively participate; they have the space to indicate the kinds of occupations they envisage.

There are also concerted efforts to create partnerships between employers and institutions of learning, which would enable employers to articulate their needs to these institutions and institutions to adapt their programmes to meet these needs. However, whilst multiple partnerships have been developed employers continue to state that these learning programmes do not address their needs. Research has highlighted that one aspect of this challenge, which is one that persists and is global, is that employers' complaints about school-leavers and youth-as-labour points towards the reality that the 'needs of industry' in relation to youth labour have always been problematic *'for employers - in perpetual disharmony with the qualities and capabilities of actually existing young people. Such an endemic dysfunctionality puts the onus on employers to offer clear statements of their 'needs' regarding young*

³⁸ Questions addressed through the LMIP include but are not limited to the following: *What data and information needs to be collected for a Labour Market Intelligence system? What decision-making processes should be in place to prioritise skills development programmes? How do we deal with skills shortages? Who should be responsible for skills planning? What do we know about the quality and integrity of data needed for skills planning collected by government departments and other agencies?*

*workers in order that schools and training institutions can attempt to produce young people with the personal qualities, skills and competencies that employers require. Yet it is at this point that the house of cards collapses. Various studies and analyses - examined later - have indicated that employers' statements regarding their needs in relation to youth labour are either ambiguous, or confused or downright contradictory'*³⁹.

On the other side of this equation, interviewees highlight the challenges that institutions experience in adapting curricula to meet the needs of employers – where they are articulated. This is particularly a challenge for FET institutions with respect to making adaptations to the NCV as the programme is already very full. Further, interviewees express a concern about the extent to which these colleges have the capacity to make these changes observing that it is in fact possible if such a capacity was in place.

he above highlights that there are multiple points at which employer involvement is secured. However despite this there continue to be concerns raised about the nature of this engagement and the extent to which this is enabling the system to understand demand (short, medium and long term) and respond to this demand through ensuring quality and relevant provision. Reports have highlighted the concern about the level of employer involvement as one concern in this regard, suggesting that given the extent of the requirements for stakeholder engagement employers are spread too thin and cannot effectively participate in all of these forums. Further, the challenges pointed to previously about the absence of a methodology for skills planning that is aligned with purpose may also feed into this challenge. For example WSPs/ATRs – even if improved – may be able to provide an analysis of current demand, but are unlikely to provide data that can support an analysis of medium to long-term demand. This requires alternative methodologies of engaging employers be sought, which allow for high level participation of employers at relevant points in the system. The extent to which this can be achieved across the economy or in sectors that are key to the economy still needs to be considered.

3.5 STEERING SUPPLY

This paper has highlighted the multiplicity of challenges relating to developing an understanding of medium to long-term demand. As a result education institutions are not able to consider how to meet these varied needs in a comprehensive manner and in terms of what is possible in the short, medium and long term. Consequently government is unable to build and support appropriate capacity development in providers and this fragmented, reactive approach to planning is not conducive to enabling providers (the suppliers of skills) to plan enrolment or develop strategies to meet the medium or longer-term skills supply demands necessitated by the various economic growth strategies.

Related to this concern, there is little understanding of the ways in which the different steering mechanisms relate to each other and how they enable provision to be supported and guided taking into account the different priorities and related time frames. A 2004 report (Wilson, Woolard and Lee, 2004, co-authored by the HSRC) suggests that, 'there are a number of mechanisms to fund and thereby steer skills provision in South Africa. This includes funding from the fiscus which are applied to higher education, and are being phased in to further education, to guide the Programme and Qualification Mix (PQM) of these institutions'. They further emphasise the levy-grant system as a key mechanism to steer the system and in particular the role of the discretionary grant which is seen as a key way of encouraging employers to focus on training in priority areas. In interviews with DHET staff they agree that these are important steering mechanisms and indicate the processes that are in place to allow for this.

The levy-grant scheme is central to the steering of skills development. The National Skills Authority utilises the National Skills Development Strategy to determine the allocation of funds from the National Skills Fund. Further, the SETAs utilise the levy-grant scheme to steer supply through the discretionary grants.

In Higher Education specifically they have the, *Ministerial statement on student enrolment planning 2014/15 – 2019/20 for universities*, which provides the cycle for planning, which flags when demand data

³⁹Why Employers Can't Ever Get What They Want. In fact, they can't even get what they Need, A paper presented at the School of PCET Staff/Student Seminar, University of Greenwich, Queen Anne's Palace, 30 Park Row, Greenwich, London, on 27th March 2000, Glenn Rikowski, Faculty of Education, University of Central England, Birmingham, UK.

is required. The document states that, 'Planning, funding and quality assurance are still the three key steering mechanisms necessary to transform the higher education sector and to contribute towards the establishment of an integrated and effective post school system' (June 2014, page 2). The statement emphasizes that, '... attention needs to be paid to those skills areas where there is a clear demand in the labour market. In addition to the general priority areas identified in the Minister's Performance, Monitoring and Evaluation (PME) targets, namely engineering sciences; human and animal health; natural and physical sciences; and initial teacher education, there is also a need to take account of specific market trends and priority state interventions' (June 2014, page 5). It highlights the importance of the work that has been done under the auspices of the Presidential National Infrastructure Plan (referred to previously), and indicates that this has led to key decisions to be made. This includes the building of two new universities and twelve new Technical and Vocational Education and Training (TVET) college campuses, as well as various dams, roads, railway lines, energy generation, transmission and distribution facilities, and broadband. The student enrolment planning statement notes that the research that has been done within this process has assisted to identify the priority managerial and professional occupations that are needed to direct design and construct these major infrastructure projects. They indicate that the focus has now shifted to understanding the precise nature of the demand so that institutions of learning can consider how best this demand might be addressed. Occupational teams have therefore been established for each of the identified occupations, consisting of representatives drawn from relevant employers, professional bodies and university faculties and it is anticipated that this will enable universities to 'gain a better insight into the demands of the eighteen SIPs and the contribution that can be made to enhance successful implementation – both through targeted enrolment planning, improving throughput and enhancing the subsequent placement of learners or graduates in relevant workplaces for the attainment of full qualification and professional registration with professional bodies in key occupational areas' (June 2014, p. 6).

The enrolment planning document states that with respect to the other strategic economic areas there is not yet a mechanism in place to support the alignment between supply and demand and it therefore encourages universities to explore the possibilities related to these economic sectors (such as maritime). It further proposes that 'universities are also encouraged to explore regional imperatives in terms of the national skills needs and develop niche programmes to support the training of graduates in relevant and scarce skills areas' (June 2014, p. 6).

Discussions with members of the FET Branch indicate that they wait for plans from the colleges and then review these against national priorities. They indicate though, as discussed previously, that they would ideally require this demand data so that they can use this to inform the colleges about priorities. They explain that this data would also be important to guide the allocation of funds, both in terms of new infrastructure – alluded to previously – but also critically in terms of additional NSF funds to gear colleges up to meet key demand areas.

They also highlight the need to support planning at a provincial and regional level and observe that, 'there is a disconnect between provincial needs and what the colleges provide'. The interviewee states that what they need is a process whereby they review what the colleges are delivering in a Province and then compare this with the economic areas in that Province. This should also take into account what SIPs projects are planned for this region. This would allow for DHET to work with the colleges to consider which programmes should be reduced and which should be increased. DHET interviewees suggest that with this increased understanding of skills demand it would be possible to utilise the NSFAS to provide bursaries to students enrolling in priority programmes. However they indicate that this needs to be agreed to with the TVET colleges who have been responsible for much of this decision-making (a point also made by an interviewee from higher education).

However, when reviewing the mechanisms for steering the system interviewees emphasise that the demands in the economy cannot be the only arbiter for what is offered. There is also a need to take into account the knowledge related to particular disciplines that go beyond specific outcomes related to workplace requirements. Further there is a need to consider other needs in terms a well-balanced society.

4. INTERNATIONAL RESEARCH: FORECASTING SKILLS NEEDS AND SHORTAGES, THE MACRO PERSPECTIVE

This section presents labour market monitoring and skills planning models and methods developed by multinational organisations like the EU (Cedefop), OECD, ILO, World Bank and UNESCO. Also the African Union has developed guidelines on labour market monitoring; however, these are considered of less relevance for the South African discussion, as they mainly focus on basic mechanisms and rules for data collection. Especially Cedefop and the OECD have developed rather sophisticated methods for data collection, forecasting and data analysis. The section therefore mainly focuses on these.

4.1 CEDEFOP

EU consider assessment and anticipation of skills and labour market needs a key instrument for the efficient functioning of labour markets and the mobility of labour within the EU, for a better match between labour supply and demand to reduce bottlenecks, and for a better definition of the content and structure of education and training systems as they seek to develop human resources, skills levels, creativity and entrepreneurship. Most EU member states carry out such activities⁴⁰, but until recently little has been done at the pan-European level. Given the increasing interdependency of European labour markets and the growth in cross-border mobility, the case for a pan-European assessment has strengthened. Therefore, the EU has launched a number of initiatives to harmonise skills forecasting and sharing of labour market intelligence. These include the Skills Panorama: Achieving National and Regional Impact (ARLI) project, the EU Skills Panorama and the European Network for Labour Market and Monitoring (ENRLMM), all coordinated by Cedefop.

Cedefop⁴¹, a semi-autonomous EU agency based in Greece, supports development of European VET policies and contributes to their implementation. Cedefop undertakes various European level research activities in order to identify and anticipate future skill needs and potential skill mismatches. Among other things, Cedefop produces regular skill supply and demand forecasts for Europe and analyses the potential labour market imbalances. Cedefop also investigates skill and competence needs in selected sectors and explores a common European approach to enterprise surveys on changing skill needs. Cedefop also animates Skillsnet, a network of experts in the field of early identification of skills needs. However, Cedefop is relatively silent on how to translate the information on skill forecasts and labour market imbalances into specific action as these are considered political issues to be dealt with by the individual EU member states. Instead the agency focuses on dissemination of information on lessons learned and best practices among the countries.

Examples of useful Cedefop publications include research papers on 'Quantifying skill needs in Europe. Occupational skills profiles: methodology and application' (Research Paper No. 30, 2013), on 'Skills supply and demand in Europe. Methodological framework' (Research Paper No. 25, 2012) and on 'Future skills supply and demand in Europe' (Research Paper No. 26, 2012). All three publications draw on a combination of national statistical data, data from Eurostat, the EU labour force survey (EU-LFS), as well as additional data on flows of qualifications. Compilation and harmonisation of the best possible data available for measuring employment was one of the purposes the project. The strength of the reports is their contribution to development of methods for measuring skills and employment trends at sector level and the level of individual occupations and clusters of occupation. However, the publications do not deal with the complex issue of how to translate this information into specific skills planning actions and how to address issues of skills imbalances.

⁴⁰ The EU statistical service, Eurostat, is the body which provided guidance on collection of labour market data.

⁴¹ <http://www.cedefop.europa.eu/en/>

Another illustrative example of Cedefop's research and experience-sharing activities is the ARLI project⁴². The main objective of the project is to support the implementation of the EU Skills Panorama (EUSP) – the EU portal providing information about recent and future trends in labour market and skill needs – by utilising the expertise of both project partners and members of the ENRLMM, interrelating the EUSP with existing skills forecasting provision, achieving greatly enhanced impact and added value for the EUSP. The second objective is to use a good practice approach to explore how existing regional and local provision of skills forecasting can be enhanced for stakeholders through interrelation with the EUSP. As part of the ARLI project, Cedefop has published a series of country reports dealing with 'demand side (users of LMI) analysis' to facilitate experience-sharing⁴³. For each of the participating countries, regional stakeholders were interviewed by national project partners to identify examples of practice that they perceived as 'good' or 'successful' and that may be worth repeating in other contexts. In the project compendium 38 examples of good practice – innovative and/or well-implemented labour market intelligence (LMI) tools (or policy/action which is based on the LMI) that help establish balance between demand and supply of skills within particular region were presented. Through projects like ARLI, Cedefop helps to identify good national (regional) practices and facilitate experience-sharing among member states.

Cedefop's strength is its theoretical and empirical research on TVET intended to provide policy makers with evidence and information on possible policy implications. It also produces regular skills supply and demand forecasts for Europe and analyses potential labour market imbalances.

4.2 OECD

In 2012 OECD published a comprehensive report advocating a 'strategy that helps countries transform skills into better jobs and better lives'⁴⁴. The key message is that all countries should develop national skills strategies. The report also acknowledges that the key challenge is putting such strategies into practice and adopting a holistic approach that includes all relevant actors at the national and local levels. In short, the key elements of the strategy are:

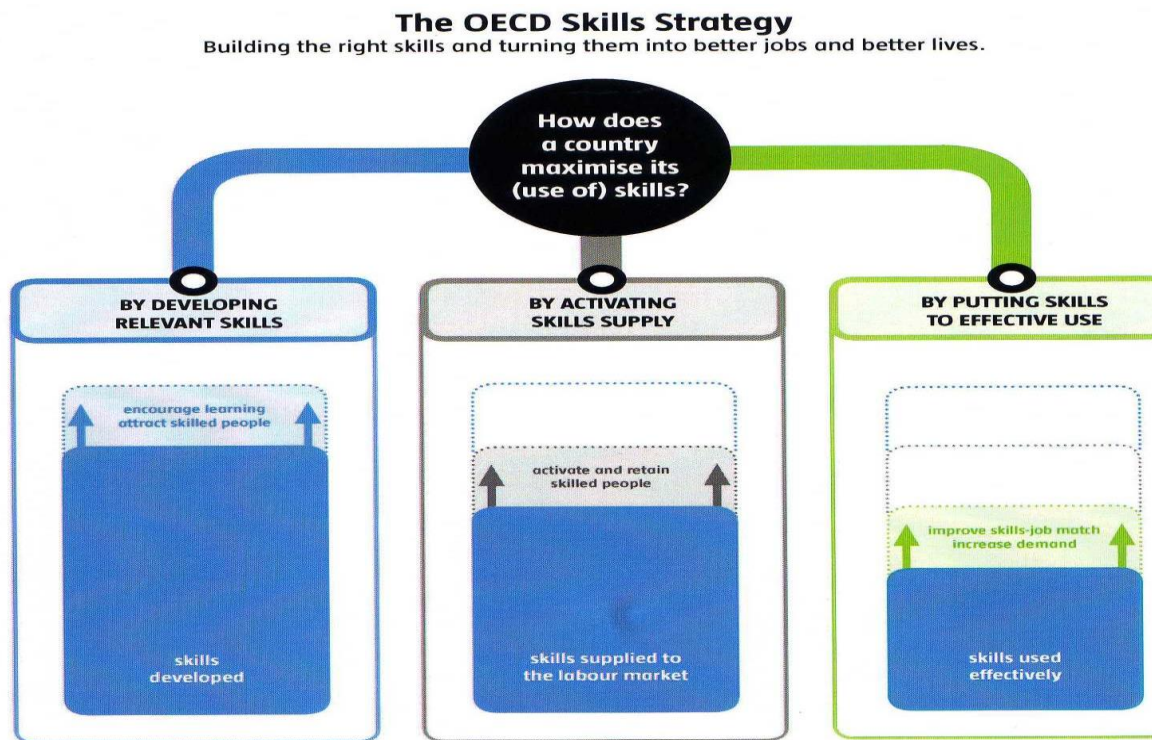
- **Prioritise investment of scarce resources:** It is costly to develop a population's skills; therefore skills policies need to be designed so that these investments reap the greatest social and economic benefits. An approach to skills policies that considers how demand for, activation of and the effective use of skills influence each other can improve efficiency in spending;
- **Strengthen the case for lifelong learning:** The Skills Strategy advises countries on how to assess the relative impact of different institutional and informal settings for skills development – from early childhood education through formal schooling to formal and informal learning throughout a lifetime – with the aim of balancing the allocation of resources to maximise outcomes;
- **Foster a whole-of-government approach:** If skills are to be developed over a lifetime, then a broad range of policy fields are implicated, including education, science and technology, family, employment, industrial and economic development, migration and integration, social welfare, and public finance. Creating linkages between different policy fields is essential for ensuring efficiency and avoiding duplication of effort;
- **Combine short- and long-term considerations:** Skills policies cover both ad hoc policy responses to emerging or cyclical challenges, such as rapidly rising numbers of unemployed people when economies contract, or acute skills shortages when sectors boom, and longer-term strategic planning for how an economy and society should evolve and the structural changes that might be required;
- **Align different levels of government:** Considering significant local variations in the demand for and supply of skills within a country, it is important to integrate national, regional and local dimensions of skills policies;
- **Include all relevant stakeholders:** Designing effective skills policies requires that a broad range of non-governmental actors, including employers, professional and industry associations and chambers of commerce, sector councils, trade unions, education and training institutions and individuals are involved;
- **Provide a global perspective:** Given the growing interdependence among countries' economies, a global perspective on how the talent pool of skills is developing and deployed is essential;

⁴² http://www.regionallabourmarketmonitoring.net/arli_public.htm

⁴³ The country experience to be discussed in the next section draws, among other sources, on this information.

⁴⁴ OECD: Better Skills, Better jobs. Better Lives. A Strategic Approach to skills Policies. OECD 2012.

- **Developing relevant skills:** Ensuring that the supply of skills is sufficient in both quantity and quality to meet current and emerging needs is a central goal of skills policies. Supply can be ensured by developing the right mix of skills through education and training, and influencing the flow of skills by attracting and retaining talent. Supply is not only responsive to demand, it can also have an important influence on demand.



Based on this approach, the OECD has published a series of country reports reviewing the performance of the national TVET system and dealing with topics such as Adult Skills⁴⁵, i.e. literacy, numeracy and problem solving skills of the adult population, which is, among other things, seen as an indication of the effectiveness of the vocational education system. The results have been published in the OECD Skills Outlook from 2013⁴⁶, which evaluates the skills of adults in 24 countries. Among other things the report discusses how the demand for skills has been changing over the past decades and the ability of the labour force to meet this situation. Recently, OECD has published a number of Skills Strategy Diagnostic Reports, which identify skills challenges faced by selected member countries. The findings of the country studies have been synthesized in the report 'Skills beyond School'⁴⁷ looking at how OECD countries are responding to this growing demand for skills, and the further steps they need to succeed. The report found that 'the investigated countries face many challenges: while some countries have thriving post-secondary vocational sectors, others have found it difficult to find a place for shorter (one-or two-year) programmes in competition with better known academic qualifications. The engagement of the social partners – employers and trade unions – is as vital as it is sometimes elusive. Vocational training qualifications are sometimes outdated or lack currency in the labour market'.

Another topic that has attracted attention by OECD is employment and job creation⁴⁸. Also in this case the dominating way of guidance has been best practice studies and topical papers. Topics covered include 'local job creation', 'green skills', 'skills for entrepreneurship' and 'youth employment'. Through the LEED (Local Economic and Employment Development) programme OECD offers cross-country comparative

⁴⁵ <http://www.oecd.org/site/piaac/#d.en.221854>

⁴⁶ OECD: OECD Skills Outlook 2013. First results of the Survey of Adult Skills. OECD 2013.

⁴⁷ OECD Reviews of Vocational Education and Training. Skills beyond School. Synthesis Report. OECD 2014.

⁴⁸ <http://www.oecd.org/employment/>

projects and peer reviews drawing on the expertise of experienced practitioners and senior policy analysts.

4.3 ILO

The International Labour Organisation is particularly strong when it comes to issues such as the decent work agenda, social protection, labour standards, gender equality and youth employment. The ILO arranges an annual 'Academy on Skills Development: Skills and TVET for improved productivity, employment growth and development' at its training centre in Turin. The objective of the Academy is 'to strengthen participants' capacities to improve the relevance, effectiveness and efficiency of their skills development systems, policies and related programmes to respond to the needs of the individual, the society and the economy' (<http://apskills.ilo.org/events/academy-on-skills-development-skills-and-tvet-for-improved-productivity-employment-growth-and-development>). Among other things, the training course is dealing with the issue of how to ensure that the skills acquired match the skills valued in the workplace. 'The purpose of the Academy is to stimulate learning and knowledge exchange on policies, challenges and options for building effective, responsive and inclusive skills development systems and to analyze some of the latest trends in Skills Development and TVET. The programme reflects the principles and recommendations of the ILO-G20 Training Strategy 'A Skilled Workforce for Strong, Sustainable and Balanced Growth'⁴⁹ (another ILO initiative)'.

4.4 WORLD BANK STEP

The Skills Towards Employability and Productivity program (STEP) is a recent World Bank initiative intended to build comparable country databases on skills that can be used for country-level policy analysis⁵⁰. STEP consists of two survey instruments that collect information on the supply and demand for skills. They were developed, piloted and fine-tuned over a period of one year before being implemented in a first wave of seven countries in 2012 and a second wave of six countries in 2013. An important aspect of the STEP surveys is the use of a multi-dimensional concept of skills that goes beyond educational attainment to capture human capital more comprehensively. STEP uses three broad types of skills for measuring skills efficiency: cognitive skills, socio-emotional skills and job-relevant skills.

'STEP's goal is to measure human capital stocks, that is, skill supply. All adults, whether they work or not, are therefore asked a similar set of questions to measure labour force potential as well as skills used. The STEP household survey therefore collects background information on a participating household as well as detailed information on a randomly selected individual within the household (ages 15 to 64) regarding his or her skills acquisition history, educational attainment, work status and history, family background, and health. The household survey includes three unique modules to measure different types of skills: (i) an assessment of reading literacy designed to identify levels of competence at accessing, identifying, integrating, interpreting, and evaluating information; (ii) a battery of self-reported information on personality traits and behaviour (conscientiousness, extraversion, self-control, decision making, and aggressive behaviour) as well as risk and time preferences; and (iii) a series of questions on task-specific skills that the respondent possesses or uses in his or her job. On the employer's side, STEP measures both work requirements and reported skill difficulties as indicators of the demand for skills, potential skill shortages, and work performance for sampled sectors of activity. National economic well-being is the outcome of the relative quality of the levels and match between the population and employment opportunities. The employer survey gathers information from a random sample of employers on hiring, compensation, and termination and training practices, as well as enterprise productivity. The survey includes questions to identify (i) employers' skill needs and utilization; (ii) the types of skills employers consider most valuable and the hiring mechanisms; and (iii) the tools used to screen prospective job applicants. The survey uses the same skills concepts and definition as those used in the household survey, a feature intentionally designed to facilitate analysis of skills gaps and mismatches. The simultaneous measurement of skill stocks and job demands on both household and employer surveys is designed to give some indication of the levels of skill utilization and mismatch using comparisons of parallel measures

⁴⁹ <http://www.oecd.org/g20/meetings/toronto/G20-Skills-Strategy.pdf>

⁵⁰ <http://microdata.worldbank.org/index.php/catalog/step/about>; http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2014/07/28/000470435_20140728092431/Rendered/PDF/897290NWP0P132085290B00PUBLIC001421.pdf

relating to persons and jobs. Thus, both the household and employer surveys contain detailed measures of required education and experience and of the required skills in reading, writing, math, problem solving, interpersonal/socio-emotional traits, technology use, and manual work required by jobs. Comparing the worker- and job-side results will give some indication of the extent of any mismatch between the skills workers possess and those demanded by employers⁵¹.

4.5 UNESCO

In recent years, UNESCO has given a lower priority to issues related skills planning and TVET. Except for a recent regional workshop on 'Equipping Youth with Skills to Meet Future Demands in Labour Market' dealing with skills forecasting in the Mediterranean region, UNESCO has not lately been involved in any significant skills planning initiatives. However, the organisation maintains a useful database on the features of the member countries' national TVET system. In connection with the ongoing post-2015 Development Goals, UNESCO has prepared a paper titled 'Towards indicators for a post-2015 education framework. Post-2015 Education Indicators Technical Advisory Group of the EFA Steering Committee'.

4.6 SUMMARY

Especially the experience of Cedefop, OECD and the World Bank STEP initiative may be of the interest for the South African discussion. Drawing on European experience Cedefop has developed a number of methods and instruments for measuring especially demand side trends and occupational profiles. Cedefop has less to offer in terms of how to translate the labour market information into specific skills planning, as this is an issue for national consideration. OECD is primarily engaged with measuring the competencies of the labour force of different member countries, in order to assess their preparedness for the globalisation of economy, and strategies for improvement of the competencies of the labour force. STEP has developed two survey instruments that collect information on the supply and demand for skills. Rather than focusing on educational attainment, STEP measures three broad types of skills, cognitive skills, socio-emotional skills and job-relevant skills.

5. approaches to AND TOOLS FOR LMI

Marcus Powell & Vijay Reddy have in their excellent paper 'Information Systems for Skills Planning: Lessons and Options for Reform in South Africa'⁵² identified four distinct approaches to skills planning:

The education or 'market based' model: 'This approach uses the formal education system as the main mechanism for skills development and is reactive in that it tends to respond to what the market requires (as opposed to anticipating what the market might need in the future). The countries that have adopted this approach include the: United Kingdom, Hong Kong and former Anglo-Saxon colonies. One of the characteristics of this approach is the key role played by the formal education systems in producing skills, and the high value placed on the collection of labour market data. However, this resource is often not translated into labour market intelligence or used by those involved in planning'. The US and Australia also fall in this category.

As mentioned by Mike Campbell, the market based model puts emphasis 'on competition to improve quality and choice. Mismatches tend to be viewed as supply-side (rather than demand-side) weaknesses, with providers not fully adapting to labour market/employer requirements. Information, advice and guidance are key to choices and matching and there is limited 'shaping' of employer demand, with a focus on meeting existing skill needs as articulated by employers'⁵³.

⁵¹ Ibid.

⁵² Marcus Powell & Vijay Reddy have in their excellent paper 'Information Systems for Skills Planning: Lessons and Options for Reform in South Africa', LMIP 2014

⁵³ Mike Campbell: Skills for Prosperity? A review of OECD and Partner Country Skills Strategies. LLAKES Research Paper 39, Centre for Learning and Life Chances in Knowledge Economies and Societies, 2012, p. 17.

The 'social partnership' or 'employment approach' 'which emphasises workforce development... Social partners are assumed to play an important role in managing the supply and demand for skills. This approach has been applied in the Netherlands, Scandinavian countries and the Republic of Ireland'.

Mike Campbell further distinguishes between *Social partner-led co-ordination systems*, as for example in Germany, Austria and Switzerland, which tend to exhibit more active co-ordination of supply and demand, especially through initiatives managed by social partners – employers and unions/workforce representatives, and *State-led social partnership systems*, as for example in Scandinavian countries, where the state also plays an important role in funding and regulation, using social partnership approaches to achieve wider governance objectives⁵⁴.

The 'integrated economic' approach or 'developmental state model'. This model gives emphasis 'to demand side policies and their role in the generation of higher level skills. The best example of the developmental state model can be found in Singapore which has successfully generated synergies between trade and investment strategies, and those for skills development.. The developmental state model is also much more interventionist and anticipates change, as opposed to responding to change'. South Africa also falls in this category.

The 'catch up countries': It refers to those developing or middle income countries attempting to leap-frog stages of development using skills. These countries normally adopt a more holistic approach to skills and human resource development. Emerging examples include Sri Lanka and Botswana. One of the key lessons from this approach is the importance of ensuring synergies between national macro policy frameworks and those for skills development, as well as linking skills to employment and wider human resource development issues'.

The different approaches are discussed in more detail in Section 8 below.

Tools applied by the EU member states for labour market monitoring can be divided into three broad categories: comprehensive tools, occupation-based tools and sector-based tools⁵⁵.

- Comprehensive tools usually use a wider range of methodologies concerning how to gather, analyse and publish labour market information. They often combine qualitative and quantitative techniques, sectoral and occupational view on the labour market, forecasting with recent trends analysis and are also strongly linked to policy actions. Although these tools provide some level of regional information, they are mostly focusing on the national level;
- Occupation-based tools are often developed with (or by) the Public Employment Service and drawn on administrative data such as information on job vacancies and job seekers. Forecasting is not always available and where it is present, it is usually of a short-term nature. Occupation based tools following ISCO classification (or its national equivalent). The statistical office is usually also involved in providing relevant labour market data (from Labour Force Survey – the LFS). They can cover up to several hundred of occupations. The occupation-based tools serve primarily for career guidance and for individuals;
- Sector-based tools: The focus on one sector allows deeper analysis of the labour market balance and skills needs; and there is also an even stronger connection between labour market intelligence and actions aimed at matching jobs and skills within the sector. Sector approaches to LMI combine various methodologies in order to provide a reliable basis for labour market actions by stakeholders. However, the impact and use of sector based tools is not so different from occupational based tools. There is still a strong link to the education and training sector and to policies trying to improve balance between supply and demand of skills. What is different is the role of employers - in some cases they are leaders of LMI activities and even finance them.

There are relative few differences among the countries in terms of the specific tools used for forecasting and measuring skills imbalances. The dissimilarity is mainly with regard to the data available, the quality (reliability) of these data and the level of disaggregation, which in turn is a reflection of the capacity of various institutions to deal with data collection, the responsibility assigned to different levels of the government system and the target audience.

⁵⁴ Ibid.

⁵⁵ Branka, J. Good Practice Synthesis Report. Achieving Regional and Local Impact through Labour Market Intelligence. ARLI. EU Progress Project. 2014

In their paper 'International comparative analysis of skills planning indicator systems across national contexts'⁵⁶ (2013) Cuen Sharrock and Sybil Chabane have identified 8 types of information generated by the various monitoring systems (p. 23):

1. Industry/Sector Reports. Essentially all LMI systems include detailed sector or industry reports. The content of the reports vary but they are usually related to employment, vacancies and other key trends specific to the skills landscape within the sector. In countries such as Australia where the training environment includes Sector Skills Councils (SSC), the level of detail available at sector level is notably higher. SSCs conduct research relating to the context and industry specific drivers of change which augments the quantitative data supplied by the LMIS;
2. Regional Reports and Small Area Reports. All investigated LMIS systems enabled the data to be broken down to specific geographic regions. How small a region that can be drilled down to is dependent on the nature of the data collection methodology. Australia and California can go down to small municipal level whereas the EU data on the Skills Panorama can only be viewed at national level of member states;
3. Labour Exchange Portal. A labour exchange portal is an online service where job seekers are able to register their CVs and apply for positions that are advertised by various employers. LMI Systems may be built around this as a central purpose;
4. Occupational data. Usually derived from dedicated employer surveys, LMI systems are able to provide very detailed information about trends relating to specific occupations. This has two significant implications for skills mismatches: a. Individuals are able to make better decisions about their career path and the associated education/training and therefore are, in theory, more effective in generating skills that the future labour market will need; b. Regular employer listing of specific skills and competencies associated with an occupation over time will reveal if the requirements for that occupation are evolving. This can be used by training providers to better match the contents of programmes to the requirements of the market making future graduates more effective;
5. Vacancy reporting and scarce skills. Vacancy reports are greatly enhanced by an effective labour exchange portal but it is not a prerequisite. In Europe for example, the European Vacancy Monitor (which feeds into the EU Skills Panorama) is based primarily on Labour Force Surveys;
6. Migration/Immigration of labour. The vacancy and skills mismatch reports assist in identifying areas where there are specific skills shortages. Ideally this will lead to a list of occupations where distinct shortages are being experienced and therefore a country can augment its labour supply with highly skilled workers from abroad without disrupting the balance of domestic labour and training markets;
7. Skills demanded, skills supplied and skills mismatch. This is a key element of skills planning, according to the authors. Ideally the nature of the skills supplied and demand needs to be understood for both the current and future environments. The supply and demand of skills is a strong area of focus for the EU Skills Panorama;
8. There are many other examples of reports that can be and are derived from the data collated in a LMIS on a regular basis. Such examples include workforce ageing and access to the labour market for people with disabilities. Another use of the output of skills related labour market information mentioned in the literature relates to the state funding of education programmes.

There is significantly more difference between the countries when it comes to the information generated and the way this is presented to the public. Especially countries applying the 'market-based' approach and the 'social partnership' approach pay a lot attention to the ease of access to labour market information and educational statistic as this is seen as an important tool for decision-makers at different levels of the TVET and job-creation system.

6. SELECTED EU LMI AND SKILLS PLANNING PRACTICES

This section summarizes the skills forecasting and planning practice of a selected number of EU and non-EU countries. Consistent with the ToR, the summary focuses on the institutional aspects with special attention to experience considered relevant for the South African discussion.

⁵⁶ Cuen Sharrock & Sybil Chabane: International comparative analysis of skills planning indicator systems across national contexts. Final draft. Human Sciences Research Council, 2013

6.1 FOCAL POINT FOR LMI

United Kingdom

The UK has a complex and robust system for collecting and making available a variety of labour market data, with both general and field specific labour market information, at national, regional and local levels. Much of the labour market information available in the UK is produced at national level. This type of information is expensive to collect and so is more likely to be updated every two or three years.

One of the focal point for analysis of labour market data is the UK Commission for Employment and Skills (UKCES). Being an industry-led organisation the principal role of the UKCES is to provide strategic leadership and evidence-based advice on skills and employment issues. One of the roles of UKCES is to provide pertinent LMI to both businesses and individuals. As part of its mission to drive vocational training provision UKCES has facilitated the establishment of 22 business-led Sector Skills Councils (SSC) to represent the learning needs of employers in their industry sectors. SSCs' the key role of LMI is to provide the evidence that informs decision-making and action planning. To the SSCs there are three major components of LMI: economic and labour force information (e.g. numbers in employment/unemployment across industries/sectors, salary information), occupational information (e.g. descriptions of occupations and job roles), demographics (e.g. age, gender, ethnicity, location of general population in relation to employment).

Besides the UKCES, LMI-related information is gathered from a wide variety of sources. For example, the Office of National Statistics (ONS) provides comprehensive national, regional and local snapshot statistics for the economy, environment, education, health, crime, labour market, population, society, and travel. Furthermore the ONS compiles the most detailed and up-to-date official UK labour market statistics and trends on a service called the National Online Manpower Information System (NOMIS).

Although the UK government is responsible for overall employment policy and employment rights, the Scottish Government is active in regional economic development initiatives and setting job creation goals, as well as heavily involved in training and skills development. A key Scottish regional agency is Skills Development Scotland (SDS). The Evaluation and Research Team of the SDS produces Labour Market Information and Intelligence (LMII) reports that brings together relevant information from a variety of sources at Scottish regional and sub-regional levels. The SDS LMII includes both labour market information (descriptive data such as statistics or survey results) and labour market intelligence (analysis, interpretation, conclusions and policy recommendations). To ensure that the LMI-based data products remain current, they are reviewed on a regular basis via consultation with Career Information Advice and Guidance (CIAG) practitioners.

Ireland

At the national level in Ireland, the Department of Jobs, Enterprise and Innovation (DJEI), a department of the Government, is responsible for implementing and developing government policies in the areas of enterprise, innovation, regulation of businesses and the protection of workers. The DJEI oversees a large number of crucial bodies and agencies that deal with employment issues such as the National Employment Rights Authority (NERA) and Foscás. Forfás is the most important of these agencies as a focal point for gathering and disseminating LMI, and for the use of skills forecasting is policy decisions at the government level.

The Netherlands

The most important source for LMI in the Netherlands is the Central Bureau for Statistics (CBS). This organisation processes a large amount of data on several social themes such as the labour market, education and inhabitants. A second important source of LMI is the 'UWV WERKbedrijf', the national employment service. The task of this organisation is to develop and publish labour market statistics, both at national and regional level. The Labour Force Survey of the CBS provides information on the number of working people, analysed by economic sector, occupation, training, age, sex and working hours. It also collects information on students in various types of education. Statistics Netherlands does not deal with forecasting.

Netherlands Bureau for Economic Policy Analysis (CPB) conducts on economic and social issues either on its own initiative, or at the request of the government, parliament, and individual members of Parliament, national trade unions or employers' federations. CPB works at the crossroads of the economic sciences

and public policy. CPB is not dealing with planning issues but analyses the effects of current and future government policies.

The Research Centre for Education and the Labour Market (ROA) is a research institute of the Maastricht University School of Business and Economics. The institute aims to improve the understanding of the relationship between education and the labour market. The overarching research theme of ROA is the acquisition and depreciation of human capital over the life course in relation to the dynamics of the labour market.

Czech Republic

LMI is based on surveys carried out in the business sector as well as among individuals. The second key source is represented by the Public Employment Services that collect and publish data on vacancies and job seekers. It is a national system but it offers detailed outcomes on regional and even local levels, which fall within the purview of relevant regional branches of the Labour Office. The Information System on Average Income is a complementary source. Surveys on salaries and wages are carried out on a large sample of employers allowing analysing the labour market situation in particular regions of the country. These sources are based on primary data analysis. Part of this LMI is formed by analyses that are carried out on regular basis, the rest are ad-hoc analyses carried out for a specific purpose.

Analyses carried out on a regular basis include primarily surveys on employability of new graduates. These analyses are carried out by the National Institute of Education and used as an important basis mainly for setting up support for secondary schools, which, in the CR, falls within the purview of the regional administration. Analyses focusing on employability of new graduates are published on a specialized portal. Specific ad-hoc analyses are within the region processed primarily by the regional administration.

Sweden

Statistics Sweden has the main responsibility for monitoring labour market performance; there are different sources that are used for that purpose. Like all European countries the Labour Force Survey (LFS) plays a large role for international comparability. However, the LFS is seldom used in evaluations of labour market policy. Normally data from the Public Employment Service (PES) is used for this purpose. The objective of the Labour Force Survey is to describe the current employment conditions for the entire population aged 15-74 and to give information on the development of the labour market. The survey is conducted regularly every month during the whole year. The results are presented as monthly, quarterly and annually statistics, with focus on both the number and the percentage of employed and unemployed persons.

Labour statistics from administrative sources aim to offer annual information on employment, commuters, employees and industrial structures and also to illustrate occurrences and flows on the labour market. The statistics are based on total population surveys and can be broken into smaller regional areas.

The main responsibility of labour market policy evaluations is concentrated in one Swedish governmental agency, IFAU (the Institute for Labour Market Policy Evaluation under the Ministry of Employment). The advantage with this is capacity building. From external evaluations of IFAU it is clear that the research and the evaluations conducted by the institute reach a very high standard. A disadvantage is mainstreaming e.g. that almost all evaluations are focusing on ex-post impacts.

Denmark

Statistics Denmark compiles data on essentially all important aspects of the labour market, including number of job seekers (unemployed) by education, occupation, age and gender, vacant positions, income, sick leave, up skilling, and number of new entrants to the labour market.

At the level of the Ministry of Employment, one section (the 'analytical unit') is responsible for general labour market monitoring and forecasts and for economic impact assessments of different policy proposals. However, the most important actor with respect to conducting systematic evaluation activities is the National Labour Market Authority, where two sections cooperate in designing and implementing evaluations of the various programmes (counselling, wage subsidies, labour market training, etc.). In addition evaluation activities take place at the regional and local level.

6.2 FORECASTING DEMAND SIDE TRENDS

United Kingdom

Many UK examples of skills development focus on a more sectoral view of the labour market. For sector specific information there is the National Guidance Research Forum (NGRF), which provides labour market trends for 30 different sectors, and interprets and summarises future labour market and skills changes for sectors. It is also a portal to national, regional and local data for the sectors from government departments, SSCs and professional bodies. There is also past information from the Learning and Skills Councils, who produced information on levels and types of training in demand and skills shortages in the various regions. Together, SDS (28 sectors) and UKCES (which involves Working Futures in 22 sectors) offer a wide range of sectoral analysis with detailed qualitative skills focus and rich additional cross-sectoral, occupational and regional information.

In Scotland, SDS works closely with industry groups, SSCs and other employer representative bodies to develop Skills Investment and Action Plans that aim to maximize skills opportunities in local sectors offering the most growth potential (as a part of Sectoral Platform for Growth reports). The Skills Investment Actions Plans are by sector and provide a very clear framework for action to address skills development at all levels – from school, through modern apprenticeships and college to university and beyond.

Ireland

The SLMRU in SOLAS produces the frequent Vacancy Overview on behalf of the EGFSN, drawing upon data from newly advertised job vacancies. The analysis focuses on the occupations and job titles of vacancies advertised with the objective of identifying skills for which there is currently a demand in the Irish labour market. The report gives insights for job seekers, graduates, career guidance professionals and those who are looking at education and training choices for career progression. Furthermore it is a valuable input to inform the training and education provision especially in the context of matching provision to employer needs.

Box 1. Ireland - very strong and clear link between labour market research and LMI, and policy/decision making and skills planning

The comprehensive labour market data provides analytical information about labour market development which is used for a wide variety of purposes in Ireland:

- Imbalances between the demand and the supply of skills. These imbalances are often used by the Expert Group on Future Skills Needs (EGFSN) as the basis for recommendations for increased VET provision in certain key areas, such as software engineering.
- Employment prospects for various occupations. The analysis from the model is used to inform school-leavers and job seekers about the relative employment prospects associated with different occupations and qualifications.
- Regional skills imbalances. Data on the supply of skills is often used as an indication of the availability of skills in certain local areas. This information is very valuable to industrialists who are deciding on where to locate a particular plant.
- Monitoring of targets set in the National Skills Strategy regarding the qualifications of the workforce in 2020.
- For immigration from outside the European Economic Area (EEA). Ireland's immigration policy is primarily based on the skills needs in the economy. One of the key functions of Skills and Labour Market Research Unit research outputs is to identify which skill sets cannot be sourced within the EEA, and provide this information to those who advise the Government on immigration policy.
- Evidence for active employment policy measures. The analysis provides a major input into the design of active labour market measures, especially the portfolio of training courses offered to the unemployed. The analysis identifies which training interventions are most likely to achieve good employment outcomes for the participants.

Source: *The Skills Panorama: Achieving National and Regional Impact, 2014*

The data from which the SLMRU produces their skills monitoring reports comes from the NSD. The NSD has been developed in order to collate all available data about the Irish labour market, which is relevant to the issue of the demand and supply of skills. All of the Public Authorities who gather relevant data supply

that data to the SLMRU in a format that allows for its inclusion in the database. Such data includes data on the salient characteristics of the employed population, the student population, immigrants and jobseekers. The SLMRU also collect data on vacancies from the Public Employment Services (PES).

The Netherlands

All provinces have labour market monitoring systems of some sort. They differ in set-up, contents, and availability. They are usually the result of an evolving process in which information created within the organisation are combined with information that is incidentally or structurally generated outside of the organisation. All provinces and municipalities share the responsibility to contribute to the so called 'LISA database' in which the number of employed workers is counted per establishment. In addition information of the gender, full-time or part-time status of the employee, and the sector is recorded. Many municipalities and all provinces use the current and historical LISA counts for their labour market monitoring.

The regional accounts give a quantitative description of the process of economic regions in the Netherlands. The basis for regionalisation is the national accounts. Commonly used sources are the regional accounts by Statistics Netherlands and Netherlands Business Survey (COEN). COEN is a partnership between the Chamber of Commerce, the Economic Institute for the Building Industry, SME Netherlands and VNO-NCW and maps four times a year the main developments and expectations in the Dutch business, via cyclical relevant variables such as production, occupancy, orders, inventory, pricing, profitability and economic environment.

For determining the size of regional employability several businesses establishment registers are important. 'LISA' is the collection of regional employment records which per company also presents data on the number of employees including flexible workers. The employment by industry and region in terms of occupied jobs (specified by jobs, years of employment, amount of workers, etc.) is available in a detailed manner. For the determination of the numbers of jobs, there are several sources, LISA and CBS being the most important ones. The composition of employment by personal characteristics is regionally available. The main sources of insight herein are derived from Statistics Netherlands. An important source to map the ongoing dynamics at business level is the Chambers of Commerce. All business and, since 2008 also all institutions, are required to register their activity in the Commercial Register of the Chamber of Commerce. Business has to indicate their scope of employment. These registrations make it possible to regionally map the amount of start-ups, new offices, closures, bankruptcies and movements.

An important source for predicting future developments is the 'social statistical database' (S-SB), that is combined with other data from Statistics Netherlands, such as the employment survey, data about education and also the general business register (ABR) for business characters. With the use of this information, prognoses are set up for sectoral and sometimes regional employment.

Expansionary demand is estimated using the regional sector forecast. They are based on changes of employment over time. These forecasts are combined with the occupational composition of sectors. It is mostly done using a national matrix, again for a lack of sufficient observations on a regional level. Additionally, we correct for shifts in the occupational (or educational) structure of the workforce and the substitution across occupations. This correction is based on the national correction and estimates. Both replacement and expansionary demand constitute the labour demand. The demand is confronted with the predicted supply: the unemployed and the predicted school leavers by education.

Germany

The German Federal Employment Agency (Bundesagentur für Arbeit (BA)) is mandated to observe and analyse the situation and development of employment and the labour market in general as well as by occupations, sectors and regions. The required data has traditionally been generated from the notifications of employers (employment, vacancies) and the unemployed by the Statistical Department of the BA. In 2009 the labour market monitoring system was further refined and a 'Labour Market Monitor' under the BA established. The LLM focuses on the regional labour market situation. The purpose of the LLM is to enable experts to discuss and analyse regional issues. The core data part of the LLM is the 'estimation of employment chance and risk' (chance refers to increase of jobs, risk to contraction of jobs). After specialist shortage has become increasingly important issue in Germany, the LLM was augmented with a 'Specialist Radar' in 2011. It supports the analysis of the shortage status of skilled labour (700

occupations with up to three different levels of skill requirements at the most disaggregated level) in 96 regions.

In addition, each Federal State has its own LMI system, as indicated by the Federal State of Hessen. Here, the main sources of LMI are: the Arbeitsmarkt-monitor by the Federal Employment Service, the IAB Enterprise Survey by the Institute for Employment Research, a department of the Federal Employment Agency, the Integrated Reporting on Vocational Education and Training by the Statistical Office of Hessen, Regional Demographic Accounts by the Federal Statistical Office and the Statistical Offices of the Federal States, and 'region pro' and Hessen Care Monitor, both by Institute for Economics, Labour and Culture (IWAK) of the Goethe-University. Apart from this, there are other surveys placing a stronger focus on regional units cross-cutting the borders of administrative units. Administrative bodies collect additional data in their area of responsibility at various geographical levels. In some instances, it is actively fed into the official statistics of the Statistical Office of Hessen and finds its way into the monitoring systems (e.g. the data on participation in (vocational) education and training collected by regional administrative authorities. However, most of the data is analysed internally and used for planning purposes only.

Czech Republic

Skills forecasting is implemented primarily at national level in the Czech Republic. The forecasts are based on medium-term, macro-level quantitative forecasting which incorporates some qualitative elements of sectoral projections. In parallel, qualitative sectoral surveys covering several selected sectors are now planned to be linked to a more permanent system of sector councils. Time horizon of skills forecasting represents five years in case of professional groups and ten years in case of industries (however, projections are updated on an irregular basis due to lack of consistent source of funding).

The National Training Fund plays an important role in terms of skills needs forecasting. The main instrument is the National Observatory. The observatory applies two methodological approaches for forecasting of skill needs. The quantitative one is represented by the mathematical forecasting model. The model measures, at the national level, the friction on the labour market between demand for, and supply of, skilled labour for defined education groups in the next five years. The model forecasts the demand and supply side of the labour market separately for 27 educational and 30 occupational clusters, matches them and indicates future shortages and surpluses at the labour market. The main outcomes of the model are: expansion demand, replacement demand, substitution demand, shift-share analysis, labour market indicators and Coefficient of Attractiveness of Fields of Study. All the projections are at the moment for national level only but extensions to regional level are planned in the near future.

Sectoral studies are another method of forecasting developed by the National Observatory. These studies are qualitative and thus allow drawing conclusions and making adjustments in education programmes to adapt them to future demands of the labour market. They make it possible to capture the development of new occupations and principal changes in the existing ones. This type of study is at the initial stage. There were only three studies elaborated. These studies are carried out by the National Observatory in cooperation with experts in the relevant field. The results of sectoral studies are interconnected with the outputs of the ROA-Cerge quantitative model in order to get a quantitative/qualitative view of the development of occupations and qualification requirements. There are plans to conduct at least two sectoral studies per year and gradually to feed them in the information databank. The resulting information is presented to the general public in a coherent and comprehensible manner at www.czechfutureskills.eu.

Pilot information products are currently being developed within the project Koncept. In 2010 so-called *Qualification Cards for Occupations* (Kvalifikační karty profesí) and *Educational Field Analyses* (Analýzy vzdělávacích oborů) were proposed. They are designed, above all, to serve the needs of experts involved in the development of the National Register of Vocational Qualifications.

Sweden

The Forecast Institute at Statistics Sweden works with analysis and forecasts in the areas of demography, education and employment. The main task of the Forecast Institute is to produce long-term forecasts of the supply of and demand for persons with a particular educational background. The Ministry of Education uses the forecasts as one of many inputs in deciding whether to recommend an increase or decrease in the number of educational places funded. Other inputs include the opinions of professional organisations, data from the Agency for Higher Education, opinions from private employers and employer

organisations, and other economic forecasts. The Forecast by Statistics Sweden is published as a report entitled *Trends and Forecasts*. *Trends and Forecasts* has been published approximately every third year since 1972. The report describes the development in the areas of population, education and employment, and long-term prospects. Forecasts of supply and demand for labour are related to the whole labour market and all forms of regular education. Some 50 educational groups are studied in more detail. The purpose of the calculations is to show in what education groups there may in the future be imbalances between supply and demand for skilled labour, if the development continues along the current lines. This is not about trying to predict the future, but rather to highlight areas that may need policy changes in order to influence the future. The calculations can be characterised as a mix of *consequence and needs analyses*. The total number of employed persons in the calculation is a consequence of assumptions about participation in employment by different groups of the population (by age, sex and born in Sweden or abroad). Employed persons are broken down into different industry sectors in such a way that the requirement of a balanced economic development is met by using certain assumptions about world trade and product development. Finally, assumptions are made about occupational development by industry sector and about the development of educational requirements for each occupation. The actual calculations thus do not take into account the effects of imbalances arising from the educational choices people make, central governmental and municipal steering of educational resources and the demand of the labour market for different categories of education.

Short-term demand side trends are identified by the Job Vacancy Survey, which is an enterprise-based survey covering both the public and the private sector. The purpose of the survey is to contribute information about the labour demand. The results are published quarterly. The number of job openings follows Eurostat's definition of vacancies. Unmet demand is measured by vacancies, defined as unoccupied job openings to be filled immediately.

Denmark

The anticipation and the qualitative forecasting of the demand and supply for labour, divided by skills has a long tradition in Denmark. One reason for this is probably the introduction in the 1970s of macro-econometric models as tools for producing economic forecasts and policy assessments. The forecasts of employment are combined with information about the demand for labour by educational level and composition in the different sectors, allowing assessment of the future demand for persons with different educational background. This information is merged with forecasts on the future outflow from the educational system hereby providing information on potential imbalances on the labour market. In addition to the quantitative forecasts, there are also examples of more qualitative assessments of the kinds of skills that will be needed in the labour market in the future. The Ministry of Finance and the Ministry for Economic Affairs and the Interior are the national bodies responsible for economic prognoses.

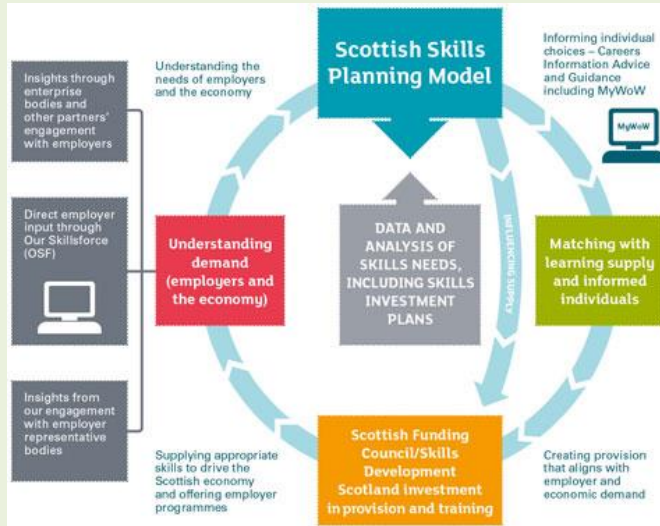
6.3 IDENTIFYING SUPPLY TRENDS

United Kingdom

As is the case for most of the investigated countries, the national statistical office, the Office for National Statistics, collects data related to graduates from the various streams of the education system as well as those entering the labour market without any formal qualification. Furthermore, UKCES, based on forecasting models developed in collaboration with Cedefop and Warwick University, publishes frequent supply side scenarios.

Box 2. Scotland – A Regional Model

Skills Development Scotland (SDS) supports people and businesses in Scotland to develop and apply their skills. SDS was formed in 2008 as an executive non-departmental public body of the Scottish Government that combine careers, skills, training and funding services. SDS also plays a critical role in economic development in the region, by working with partners to drive the Scottish Skills Planning Model focused



on improving skills and learning systems so that they respond to the needs of the local industry, as well as support individual workers to reach their potential. A primary driver of SDS is government policy that links skills with economic growth strategies in Scotland.

At the 'national' level in Scotland, since SDS jointly manages the Skills Committee with the Scottish Funding Council, and is part of the Strategic Forum of the Scottish Government, it has opportunities to both inform and shape the skills and learning system in Scotland. The SDS Chair is also a part of the Scottish Employability Forum, which supports the developments in employability of youth in Scotland. SDS also

works with local townships and Community Planning Partnerships (CPPs) to develop CPP Single Outcome Agreements (priorities to be addressed and outcomes achieved in each local area), and Youth Employment Activity Plans.

SDS works with their partners 'nationally' and locally to deliver key services to Scottish workers:

1. Building Career Management Skills (CMS) through all-age career information, advice and guidance
2. My World of Work, (<http://www.myworldofwork.co.uk/>) a SDS web service offering a unique mix of tools, features and job information to help workers discover more about themselves and the future world of work
3. Modern Apprenticeships provide a way for businesses to train new entrants and existing employees to industry-recognised standards
4. The Skillsforce (<https://www.ourskillsforce.co.uk/>) facility offers support for employers to recruit, develop and plan a skilled workforce through a dedicated employer team and a skills web service
5. Leading delivery of PACE (Partnership Action for Continuing Employment) support for those dealing with redundancy
6. Supporting individuals to secure and sustain employment through the development of employability and vocational skills through a local delivery model - the Employability Fund
7. Individual Learning Accounts - providing financial support for individual learning.

Source: <http://www.skillsdevelopmentscotland.co.uk/>

Ireland

Monitoring Ireland's Skills Supply: Trends in Education and Training Outputs is a series of annual publications produced by SLMRU in SOLAS on behalf of the Expert Group on Future Skills Needs (EGFSN). Its companion publication is the National Skills Bulletin, an annual series of reports also produced by the SLMRU. The aim of Monitoring Ireland's Skills Supply is to provide a comprehensive overview of the inflows and outflows from Ireland's education and training system according to qualification level and field of learning, while the National Skills Bulletin analyses information gathered and maintained in the NSD, to provide an overview of the Irish labour market at occupational level. The overview of trends in education and training statistics provided in these two reports, contributes to the EGFSN's role in advising the Government on the current and future skills needs of the economy. It also serves as a tool to decision makers, policy makers and other stakeholders in aligning skills supply with labour market demand and with the needs of society.

The Netherlands

School leaver forecasts are based on the counts of students by the Ministry of Education, Culture & Science on the basis of data received from various categories of institutions of education. The data are consolidated by Statistics Netherlands.

ROA provides biannual forecasts for more than a hundred different occupation and educational degrees. For several years these forecasts have also been used to develop a regional model of occupational and education labour market forecasts. The model is built to provide medium term, 5 year, forecasts on a detailed occupation and educational level. It allows for changes in the occupational structure over time (e.g. skill upgrading), as well as substitution processes. The regional forecasting model is based on the national methodology. The same components as in the national model are used for demand, expansion and replacement demand, and for supply, the short term unemployed and school leavers. Whenever possible, data and estimates are done on the regional level. The model is developed to make efficient use of the regional information available, and by using national input whenever necessary. The current labour force's educational composition is used to predict the precise composition of the inflow of new graduates on the regional labour markets. The replacement demand represents the outflow or turnover of workers within an occupation or education that needs to be replaced. While not all outflows will be replaced, because the composition of the occupational or educational structure on the labour market is changing, an estimate of the replacement demand is conducted. The estimation procedure is based on the age-gender structure of an occupation or educational group.

Germany

The Federal Ministry of Education & Research collects and publishes data on all aspects of education enrolment and outputs, including TVET and higher education. Furthermore, the Federal Statistics Office published information and data on various labour market aspects, including earnings, labour costs, employment and enterprises. In addition all federal states have their own statistical offices collecting data used, among other things, for labour market forecasting. In addition, each federal state has its own labour market intelligence structure.

Czech Republic

LMI focusing on future availability of graduates are available at the national level but at the moment just for a limited number of fields of education, which cannot satisfy current demand. On the other hand, it has been reported that employers are rather sceptical about the benefits of forecasting the trends in employment; according to them, such information is determined by a large number of hardly predictable factors and reliability of projections of employment for more than 1 year in advance is therefore rather low. The representatives of institutions providing adult education appear to be of the same opinion. These institutions, in most cases, plan and implement their business activities on the basis of assessment of the existing situation and the feedback from their clients. Only the absolute minimum of these institutions have long-term development strategies where the use of LMI would be of certain importance. In addition, available LMI on future development is not regarded by them as particularly beneficial.

Sweden

Estimates of the future supply of different education groups are based on data from Statistics Sweden's register of the education level of the population. To these data a forecast of study completion and immigration are added. Total supply is reduced by emigration and death. The availability of labour is calculated by multiplying the total supply by so-called participation rates of each education group (by sex and age). The estimated supply of labour is then compared with estimated demand for different educational groups. Demand forecasts are based on a population and employment forecast, together with future economic outlook. This provides data on the demand for labour in different industries. Assumptions are made about occupational structure change by economic activity, and how skills requirements will be developed in various occupations.

The long-term forecasts are one of several tools used to make adjustments to the educational system in Sweden. Hence, the results of '*Trends and Forecasts*' are used by the Swedish government in the budget process. The forecasts are used as background information in discussions on increasing or decreasing the number of educational places that the government finances.

Box 3. Sweden – Translating Forecasts into Budget Allocations

The Forecast Institute at Statistics Sweden works with analysis and forecasts in the areas of demography,

education and employment. The main task of the Institute is to produce long-term forecasts of the supply of and demand for persons with a particular educational background. The Ministry of Education uses the forecasts as one of many inputs in deciding whether to recommend an increase or decrease in the number of educational places funded. Other inputs include the opinions of professional organisations, data from the Agency for Higher Education, opinions from private employers and employer organisations, and other economic forecasts.

The Forecast by Statistics Sweden is published as a report entitled *Trends and Forecasts*. *Trends and Forecasts* has been published approximately every third year since 1972. The report describes the development in the areas of population, education and employment, and long-term prospects. Forecasts of supply and demand for labour are related to the whole labour market and all forms of regular education. Some 50 educational groups are studied in more detail. The purpose of the calculations is to show in what education groups there may in the future be imbalances between supply and demand for skilled labour, if the development continues along the current lines. The calculations can be characterised as a mix of *consequence and needs analyses*. The total number of employed persons in the calculation is a consequence of assumptions about participation in employment by different groups of the population (by age, sex and born in Sweden or abroad). Employed persons are broken down into different industry sectors in such a way that the requirement of a balanced economic development is met by using certain assumptions about world trade and product development. Finally, assumptions are made about occupational development by industry sector and about the development of educational requirements for each occupation. The actual calculations thus do not take into account the effects of imbalances arising from the educational choices people make, central governmental and municipal steering of educational resources and the demand of the labour market for different categories of education.

Estimates of the future supply of different education groups are based on data from Statistics Sweden's register of the education level of the population. To these data a forecast of study completion and immigration are added. Total supply is reduced by emigration and death. The availability of labour is calculated by multiplying the total supply by so-called participation rates of each education group (by sex and age). The estimated supply of labour is then compared with estimated demand for different educational groups. Demand forecasts are based on a population and employment forecast, together with future economic outlook. This provides data on the demand for labour in different industries. Assumptions are made about occupational structure change by economic activity, and how skills requirements will be developed in various occupations. There is of course, considerable uncertainty in all long-term forecasts of demand.

The Swedish Ministry of Education uses the results of the '*Trends and Forecasts*' as background information in its recommendations for changing the dimensioning of the higher education system. These recommendations go to the Department of Finance, where if approved, get incorporated into the annual budget which is approved by parliament. With some exceptions (namely medical and dental school and psychology education), the recommendations are presented in the form of 'maximum number of spaces' financed. It is important to note that Sweden does not 'dimension' the higher education system in the sense of mandating the exact number of students that will attend. The dimensioning that is done is rather a decision regarding the 'financed maximum'. Educational institutions are free to accept more or fewer students than the financed maximum. The parliament makes decisions on the maximum number of educational places it will fund, but the actual number of places (and number of students) is decided by the educational institutions themselves. These institutions have access to important information necessary to make the decision, including the number of applicants, the parliamentary decisions regarding the 'maximum' number of places that are financed, knowledge about the interests of current faculty, potential availability of new faculty, and information about the local and national labour markets. The results of '*Trends and Forecasts*' are also used by the Swedish government in the budget process. The forecasts are used as background information in discussions on increasing or decreasing the number of educational places that the government finances. In particular, the forecasts are used in this process by the Ministries of Education, the Ministry of Finance, the Agency for Higher Education, the Parliament, and universities, and higher education institutions themselves. Additionally, the forecasts are used by the Swedish Public Employment Agency. Finally, the Ministry of Education use '*Trends and Forecasts*' on a regular basis to inform and update Sweden's political leadership on the current and future state of the educational system and its connection to the labour market. For example, the Ministry of Education recently used '*Trends and Forecasts*' as background support for a recommendation to increase the financing of adult education.

Source: Russell Schmieder: *Trends and Forecasts from Sweden: How does Sweden do its forecasts for the*

educational system and the labour market? What are the limits of these forecasts, and what can be done to close the coming labour gap in healthcare and social services?; Paper submitted for the conference on Peer Review on 'The Ageing Population and Educational Choices', Finland June 2010. May 2010

6.4 MATCHING DEMAND AND SUPPLY

United Kingdom

TVET in the UK is centrally governed by the Department for Education (DfE), responsible for schools and university technical colleges, and the Department of BIS, which is responsible for training, further and higher education. These departments are responsive to economic pressures and driven by - and closely monitored against - statistical performance targets.

At regional/local level, there are two agencies address regional variations in needs for skills training and business support: the Skills Funding Agency (SFA) and the Education Funding Agency. The SFA is an executive agency under the Department of BIS, and funds skills training for further education by supporting over 1,000 colleges, private training organizations and employers. The SFA operates regionally in six regions with corresponding Local Enterprise Partnerships (LEP). The agency also operates National Apprenticeship Service and National Careers Service. The National Apprenticeship Service supports, funds and co-ordinates the delivery of apprenticeships and traineeships throughout England and provides a dedicated, responsive service for both employers and learners. National Careers Service (NCS) provides professional advice on careers, skills and training.

Box 4. UK – the Role of Sector Skills Councils

At the business-sector level there is the Federation for Industry Sector Skills and Standards, which covers the Sector Skills Councils (SSC), employer-led organizations that cover specific industries in the UK.

There are 18 SSCs and 5 Sector Skills Bodies who work with over 550,000 employers to define skills needs and skills standards in their industry. The federation also covers:

- *Certification of Apprenticeships* - Working with over 7,500 training providers and c. 500,000 Apprentices in England, Scotland and Wales to provide them with their final Apprenticeship Certificate
- *Quality Assurance of the Apprenticeship process* with and on behalf of the SFA, the National Apprenticeship Service and Employers
- *Professional Standards development* through sharing best practice and developing a code of practice
- *Driving growth through skills* by ensuring through the SSCs that skills development supports productivity and profitability growth and that the views of employers are articulated and heard by those making skills policies.

Ireland

The social partners have always played a role in VET in Ireland. The setting up of the National Training Fund (NTF) in 2000 gave the social partners, and in particular employers, a policy consultation forum regarding the allocation of funding for skills training for the employed. Employers and unions are represented on the Board and sub-Boards of the main vocational training providers and both employers and unions are also represented on the EGFSN to assist in the identification of specific skill and qualification needs.

An advisory group under Forfás, the EGFSN, advises the government on current and future skills needs of the economy and on other labour market issues that impact Ireland's enterprise and employment growth. Established in 1997, the EGFSN reports to both the Minister for Jobs, Enterprise and Innovation and the Minister for Education and Skills and has the central role in ensuring that labour market needs for skilled workers are both anticipated and met.

The DJEI in conjunction with SOLAS (the Further Education Agency) provides the EGFSN with research and secretariat support. The SOLAS Skills and Labour Market Research Unit (SLMRU) provides the EGFSN with data, analysis and research and manages the National Skills Database (NSD). The NSD has been designed to collate all available information about the supply and demand of skills in Ireland. It provides a platform for the timely analysis and forecasting of the labour market at occupational level. The EGFSN's

work programme is managed by the Head of Secretariat based in the DJEI, and their budget comes from the National Training Fund (NTF), which is operated by the Department of Education and Skills. The fund provides for expenditure on training for those seeking employment, training for persons in employment, literacy and numeracy, training for those in the community and voluntary sector and also provides funding for the identification of existing and future skills needs for the economy.

The Netherlands

The TVET sector in the Netherlands is characterized by strong partnerships which include educational institutions and the social partners. Both the institutions and social partners can take the initiative to introduce, within a dialogue between parties, new occupations or qualifications or renew existing qualifications. The Ministry of Education Culture and Science only determines the basic rules whereas vocational schools and Centres of Expertise (Sector Skills Councils) operate autonomously. Since 2012 VET and the labour market are organised in one organisation called the Foundation for Cooperation on Vocational Education, Training and the Labour Market (S-BB). Their main task is to set up a new revised, flexible qualifications structure for VET with significantly less qualifications than the existing one. The S-BB brings together senior secondary vocational education ('VMBO'- technical colleges) and the organised labour market. S-BB is responsible for cross-regional and cross-sector management and harmonisation of themes relating to the compatibility between vocational education and industry. This foundation unites 17 sectoral Centres of Expertise. These centres of expertise are organised according to the different branches of industry and function as sector councils for TVET. The centres support over 220,000 accredited work placement firms in their responsibility for the supply of training places over 500,000 students on the level of senior secondary vocational education and training. More specifically, the centres are carrying out the following legal tasks for the Ministry of Education: a) Accreditation and assistance of work placement companies; b) Development and maintenance of the qualifications structure; c) Labour market research.

Germany

State ministries are responsible for guidance of public TVET institutions and supervision through public administration bodies. Their leverage is mainly through their funding, and approval of personnel based on the policies in force and forecasts about social and labour market demand. For all TVET public institutes and their financing (facilities, personnel) the state Ministers of Education and Culture (name may change from state to state) are responsible, coordination on post-secondary TVET level; as such they create capacity; their utilization depend on the demand.

At the regional (state) level, the forecasts of 'regio pro' are used to start negotiations on labour market development strategies in the administrative districts. At the round table, the relevant labour market stakeholders are gathered with the aim to interpret and analyse the data and develop a common strategy on the basis of the deliberations. The experience has shown that if the stakeholders are involved at an early stage of data interpretation and strategy development, it is easier to commit them to further participation in the process where their concrete contributions to the regional labour market developing strategy in their specific field can be negotiated.

Czech Republic

The skills agenda at the national level is divided into the individual agendas of different ministries (the Ministry of Education, the Ministry of Labour, the Ministry of Interior, and the Ministry of Trade & Industry) as is usually embedded in the human resource development aspects of different sectoral policies, often emphasising the need for better skills matching with the labour market. At the national level, there is no representative advisory body concerned with human resource development that could serve as platform for information-sharing, and the coordination of all relevant actors.

Sweden

The Swedish National Agency for Higher Vocational Education (NAE) has responsibility for all matters concerning Higher Vocational Education (HVE) in Sweden. NAE analyses labour market needs for qualified workforce, decide which programmes are to be provided as HVE and allocate public funding to education providers. The HVE programmes are tailored to respond to a real labour market need and be in concert with employers and industry. Education providers may be universities, local authorities or private training companies. HVE is tailored to suit an evolving market place situation. Contents and specialisations will change over time. It is a characteristic of HVE that the companies and organisations tied to the programmes take an active part in the planning as well as the implementation of the programmes. Employers and industry representatives take part as members of the programmes' steering

committees. They may also take part through giving lectures, joining in projects or by offering work placements. Programme length varies, although most are between one and three years in duration. They span over a number of different fields. All programmes are at a post-secondary level, free of charge and qualify for student financial aid from the Swedish National Board for Student Aid.

The National Programme Councils are advisory bodies and a permanent forum for dialogue between the NAE and stakeholders concerning the quality, content and organisation of TVET. Each vocational programme offered at upper secondary schools has a National Programme Council to advise and support the NAE in its tasks. The councils also perform other duties such as collecting data on students' entry into the labour market, and enhancing cooperation between school and the business sector. The Councils have representatives from the industry sector and employee organisations and authorities.

Denmark

The Ministry of Higher Education & Science deals with all post-secondary education (short cycle, medium cycle and long cycle) and research. It sets the annual maximum intake for all university-based education. For this purpose the education programmes are clustered into related professions targeting the same labour market segment. At present there are 58 education clusters. The clusters are sub-divided into short, medium and long cycle tertiary educations. For education programmes and clusters of education programmes with above average unemployment rates, the intake is reduced in order to address the imbalance. Data providing the basis this decision are the number of graduates reported to Stats Denmark by the higher education institutions and the number of unemployed over the last 2 years for each profession reported to Stats Denmark (both data set are pretty accurate and up to date). The ceiling for the maximum intake is based on the average intake over the last 5 years. The model is evaluated and adjusted every 3 years.

In Denmark (as in the rest of Scandinavia), skills planning and employment policies are closely interrelated. A central employment council has been established to advise the Minister of Employment (and the National Labour Market Authority). The employment council comprises representatives from the social partners, the municipalities and the Danish Council of Organisations of Disabled People. The council advises the Minister about major employment policy initiatives as well as the Minister's annual goals for employment policy. The council also advises on following up regional employment measures, pilot projects and proposals for new legislation. At regional level, four central employment regions play a central role in ensuring accountability as well as supporting flexibility in employment policy in Denmark. Employment regions fall under the National Labour Market Authority. Each region has set up an advisory regional employment council consisting of the social partners, the municipalities, and the Regional Council.

Box 5. Denmark – Tripartite Skills Planning

The social partners play an institutionalised role at all levels of VET, from the national advisory council on vocational upper secondary education and training (Rådet for de Grundlæggende Erhvervsrettede Uddannelser) advising the Ministry of Children and Education on principal matters concerning VET to playing an advisory role at local level through local training committees, comprised of representatives from the social partners who advise colleges on local adaptation of VET. Their most important role is to ensure that provision of VET is in line with the needs of the labour market. The above advisory council consists of 31 representatives from the social partners. In its advisory capacity, the council monitors developments in society and highlights trends relevant to VET. The council makes recommendations to the ministry regarding establishment of new VET programmes and adaptation, amalgamation or discontinuation of others. National trade committees (faglige udvalg) constitute the backbone of the VET system. Approximately 50 trade committees are responsible for 109 main courses. The committees normally have 10 to 14 members and are formed by labour market organisations (with parity of membership between employer and employee organisations).

Among their core responsibilities, the national trade committees (a) perform a central role in creation and renewal of VET courses by closely monitoring developments in their particular trade and have a dominant position in formulating learning objectives and final examination standards, based around the key competences deemed as required in the labour market; (b) conduct relevant analyses, development projects, etc., and maintain close contact with relevant stakeholders; (c) decide the regulatory framework for individual courses within boundaries set by the legislative framework – they decide which trade is to provide the core of the training, the duration of the programme, and the ratio between college-based

teaching and practical work in an enterprise; (d) approve enterprises as qualified training establishments and rule on conflicts which may develop between apprentices and the enterprise providing practical training; (e) function as gatekeepers to the trade as they are responsible for issuing journeyman's certificates, both in terms of the content, assessment and actual holding of examinations. Trade committees and their secretariats are financed by participating organisations.

Local training committees, meanwhile, are affiliated with each vocational college and ensure close contact between vocational colleges and the local community, improving responsiveness to particular local labour market needs. They consist of representatives from local employers and employees, appointed by national trade committees, as well as representatives of staff, management and students appointed by colleges. Training committees work closely alongside colleges in determining the specific curriculum at colleges, including which optional subjects are available. They assist and advise national trade committees in approving local enterprises as qualified training establishments and in mediating conflicts between apprentices and enterprises.

Source: *Cedefop: Vocational education and training in Denmark, Luxembourg 2012*; <http://eng.uvm.dk/> (Ministry of Education)

6.5 SHORTAGE LISTS

Essentially all the researched EU member states publish official skills shortage or 'positive' lists. The lists typically summarise professions experiencing a shortage of qualified professionals and for which it is less difficult to obtain a work permit. Usually only limited numbers of occupations are open to foreigners and in many instances these are in the engineering and health sectors. Mostly the lists are generated by the immigration service based on information received from the employment service.

In Australia the Department of Employment carries out research to identify skill shortages in the Australian labour market. The research results provide information about skill shortages at the state, territory and/or national level. The methodology is applied consistently across occupations and locations to provide information about employers' ability to recruit the skilled workers they need. The research does not identify skill gaps in an employer's existing workforce. The research aims to identify shortages in the Australian labour market in skilled occupations where long lead times for training mean that shortages cannot be quickly addressed. Results are considered in a range of education, training, employment and migration policies and programmes, and are publicly available at <http://deewr.gov.au/skill-shortages>.

The main feature of the skill shortage research is the Survey of Employers who have Recently Advertised (SERA). The SERA provides useful, relevant information about employers' experiences recruiting skilled workers, collecting two different kinds of intelligence (discussions with employers and recruitment professionals which provide qualitative information, enabling the identification of key labour market issues for each occupation; and quantifiable data about employers' recruitment experiences, including the proportion of vacancies filled, number of applicants, number of qualified applicants and suitable applicants). The methodology is considered cost effective and targeted and, although it is not based on a statistically valid sample and does not enable the compilation of quantitative estimates of skill shortages, the sample is sufficient to provide appropriate information for its purpose. The Skill Shortage research is undertaken for selected occupations defined in the Australian and New Zealand Standard Classification of Occupations (ANZSCO). The research is generally conducted at the six digit level of ANZSCO, although for some labour markets, six digit codes are combined. The research focuses on relatively large occupations (usually those with national employment of at least 1,500 as at the 2011 Census) which are skilled (that is, they generally require at least three years of post-school education and training). Most are professions and technicians and trades, although a small number of other occupations are also included. In 2013-14 the research program includes around 120 occupations. While occupational coverage varies from year to year, there is a core of around 80 occupations which have been assessed annually in recent years.

In the UK, the Migration Advisory Committee (MAC) is the body dealing identification of skills areas and occupations that are eligible for visa and employment permit in the country. MAC is a non-departmental public body comprised of economists and migration experts that provides evidence-based advice to the Government on migration issues. The questions of the committee are determined by the Government. The MAC publishes an annual occupation shortage list with focus on Tier 2 occupations (professionals,

technicians, skilled workers). Most of these are in the health and engineering fields. The purpose of the list is primarily to guide issuance of UK work permits.

6.6 SUMMARY

First and foremost it is important to understand that there is nothing like one international best practice model for skills planning. Different countries have developed different practices suitable for their specific needs and priorities, and the resources available. Hence, what is a well-functioning model in one country may not work in another. Especially in the north European countries (e.g. Denmark, Sweden, the Netherlands) LMI is used not only for forecasting of future demand for various occupations, but plays an equally important role when it comes to prioritisation of employment measures, for instance re-skilling of job-seekers. Finally, the skills planning practices are influenced by the balance between public and private provision of education and training. For instance in Germany where basic vocational training is widely under the auspices of the private sector, little coordinated skills planning is practiced. Sweden is an example of the opposite extreme, as mentioned above.

LMI production

There is significant similarity in terms of data collection instruments and methods. However, differences exist especially in terms of the disaggregation and quality of data. Detailed forecasting is most suited to countries with comprehensive individual registers, which is the case for most EU member states. The LMI data sets typically include (regular) labour force surveys, vacancy registration, educational statistics, demographic statistics, enterprise registrations, employment/unemployment statistics and sector statistics (e.g. volume of production and export). Hence, demand side forecasting based on a general equilibrium model of the economy can be applied to any country with reliable data on the national accounts. Most countries already use such a model in their analysis and policy making. The supply side of the model, based on registers, is most applicable to countries with adequate individual data. Most countries have individual-based data on the education system; however, not all have adequate individual data on the labour force. Labour force data for most countries comes from labour force surveys. Since it is based on samples, statistical uncertainty will limit the accuracy of the model and the detail of the forecasts that can be made.

LMI use

Although most EU member states have developed rather sophisticated LMI systems these are in most instances used with considerable caution when it comes to long-term national skills forecasting. The main reason is the uncertainty of the forecasts due to factors such as external economic factors, technological innovations, aspiration of new entrants to the labour market and the resources involved in fast-tracking of changes of the education system. Another factor is the fact that it has thus far proved quite difficult to make exact estimates not only for the private labour market; also the public labour market has experienced serious mismatches despite considerable effort to balance supply and demand. For instance, many European countries are experiencing a shortage of engineers and specialised medical technicians, while unemployment is marked among graduates within social science and the humanities. However, the main challenge faced by most European countries is the relatively low standing associated with vocational training and the corresponding preference for tertiary education. Notwithstanding considerable endeavour by governments to modify the youth's preferences, this is only changing very slowly.

Moreover, there are considerable differences as regards the way the information is being translated into specific skills planning and employment initiatives, reflecting the level of decision-making and the relatively autonomy of each educational institution. The relative weight of private and public education and training provision also matters. Obviously large countries like the US, Germany and the UK leave more leeway to regional or provincial authorities (in the case of US and Germany the federal states) to set educational priorities, but also the Czech Republic, the Netherlands and Denmark all have decentralised skills planning practices for TVET.

Especially in Denmark and the Netherlands, employment policy and skills planning are closely interrelated. Short-term skills training is a key ingredient of effort to keep people active in the labour market and to reskill people who do not meet contemporary skills requirement. Employment measures intended to secure reintegration of job-seekers to the labour market are usually dealt with by regional/provincial authorities.

Institutional arrangements

All examined EU member states have a prolonged tradition for involving stakeholders in the different steps of the skills planning process. This is typically done in the form of Advisory Committees or Sector Skills Councils. They are in many cases industry-specific or regional. Often the advisory bodies have a tripartite nature involving representatives for government, private sector and labour.

Table 1. EU member state LMI and skills planning focal points

EU Member State	Focal point for LMI/forecasting	Focal point for TVET	Focal point for Higher Education
Sweden	Forecast Institute of Statistics Sweden	-National Agency for Education (under MoE) -National Agency for Higher Vocational Education (under MoE) <i>based on stakeholder consultations</i>	Ministry of Education (MoE) in consultation with HE institutions
Denmark	Statistics Denmark/ Ministry of Employment	Ministry of Children and Education <i>advised by the National Advisory Council on Vocational Upper Secondary Education and Training</i>	Ministry of Higher Education & Science <i>based on forecasting model and stakeholder consultations</i>
The Netherlands	-Central Bureau for Statistics -The Research Centre for Education and the Labour Market (ROA)	-Foundation for Cooperation on Vocational Education, Training and the Labour Market (S-BB) -Centres of Expertise/ Sector Skills Councils	Ministry of Education, Culture and Science <i>with considerable autonomy to the individual higher education institutions</i>
Czech Republic	-National Training Fund -Sector bodies -Employment Service Regional authorities	-Ministry of Education, Youth and Sports -The National Institute for Education (NÚV) under MoEYS	Ministry of Education, Youth and Sports
Germany	-German Federal Employment Agency -Federal states	-Federal Ministry of Economic Affairs -Chambers of Commerce & Industry (for the apprentice system) -Federal state Ministries of Education -Federal Institute for Vocational Education and Training (BIBB)	-Federal Ministry of Education & Research -Federal state Ministries of Education
England (UK)	UK Commission for Employment and Skills	Department for Business, Innovation and Skills the Skills Funding Agency <i>in consultation with Sector Skills Councils</i>	Department for Education
Scotland (UK)	Skills Development Scotland	Skills Development Scotland <i>in consultation with Sector Skills Councils</i>	Department for Education and Lifelong Learning
Ireland	Department (Ministry) of Jobs, Enterprise and Innovation	Training and Employment Authority)accountable to the Minister for Education and Skills) <i>in consultation with among others the Expert Group on Future Skills Needs</i>	Higher Education Authority (accountable to the Minister for Education & Skills)

Skills planning challenges

One of the challenges in the regional/provincial context is the availability of sufficiently detailed data allowing disaggregation to the regional/province level. While general employment trends seem easy to

extrapolate, given sufficient information on both the historical development in a region and the national economic development as a whole, there are several challenges in terms of a consistent and regular update of regional forecasts. A sophisticated forecasting model that incorporates the general employment trends, demographics of the workforce, and the changing structure and composition of occupation and the education within the workforce is important in the context of early identification of skills needs, but also requires availability of sufficiently accurate data and capacity to analyse these. Some countries such as Sweden have the advantage of comprehensive registers capturing input and output data even at the regional/district level. Countries with similar registers are able to produce regional/provincial forecasts at a similar level of detail. Those who base their forecasts on survey data generally have larger statistical uncertainty in the results.

Another challenge concerns the freshness of the data. Long-term forecasts are usually based on past data and therefore notoriously inaccurate. Economic change happens quickly, countries are more interdependent than they were in the past, and the future is hard to predict. In general, the shorter-term forecasts (2-3 years) provide more valuable data for job seekers than the long-term forecasts. However, long-term forecasts can capture long-term demographic trends better than short-term forecasts. The current and coming shortage of personnel in the healthcare and services sectors is a good example.

7. EXPERIENCE FROM NON-EU COUNTRIES

This section presents the labour market monitoring and skills planning practice of a number of non-EU countries considered of potential relevance for the South African discussion. The countries can either be classified as applying the 'market economy' (USA, Canada and Australia) model or the 'developmental state' model (Singapore, India and Malaysia).

7.1 USA

A distinct difference between Europe and the US is that forecasting and anticipation of skills needs in order to inform the content and the dimensioning of skills or education programmes at a post-secondary level is not perceived a government responsibility in the US. A core value in the US is institutional autonomy. In fact, the institutional culture in the US is such that it is not the role of public policy to intervene in the planning of the educational programmes from post-secondary institutions. In fact, it is a common public belief that a dynamic and responsive post-secondary education system is first and foremost developed through strong market forces, and consequently public policy plays a minor role in post-secondary education compared to the situation in the EU. Hence, even though numerous forecasting studies and labour market projections are undertaken as part of labour market policies at the federal level in the US, federal and state role in developing or regulating tertiary education is quite minimal compared to Europe.

At the national level, the US Department of Labour (DOL) is a cabinet-level department of the federal government that deals with employment and skills, and has the overall responsibility of administering and enforcing labour law among other tasks (e.g. wage and hours standards, unemployment benefits, and occupational safety). The US Secretary of Labour oversees US labour policies and has also the overall responsibility for the collection of pertinent labour market information. The DOL and other agencies at the federal, state, and local level have made impressive strides in consolidating, organising, and reporting comprehensive LMI in a way that is easily accessible to the public on the DOL or corresponding agencies websites.

Box 6. Planning curriculum content – an EU/US perspective

Experts and project managers from both sides of the Atlantic have some words of warning about how and to what extent skills forecasting studies are used when planning curriculum content. The main argument is that by nature it is impossible to predict the future and that past studies have more than once contained forecasts that turned out to be wrong. Another point raised by project managers and some experts as well is that the nature of many anticipation and forecasting studies tends to contain information at a highly aggregate level with little information specific to subsectors, occupations, and geographical locations.

Another explanation regarding demand orientation is the perceived rigidity in accreditation systems and the processes through which new programmes and courses are approved. Some European and USA interviewees suggest that government authorities or committees who set up to approve new courses or programmes often have little or no specialized knowledge of the specific content which is proposed for a new course or programme. This, according to some respondents, has led to a 'play-it-safe' mentality on the part of the approving authorities and the institutions seeking approval, which has substantial negative impact on innovation in content and methods: *'The best way to get a programme approved is to do it exactly the way it was done last time. I have been through new programme approval processes where, step-by-step, innovations were crossed off because they were 'risky'... because they might prevent the programme from getting approved'*. – American guest-professor in the EU73

Source: Hanne Shapiro, John René Keller Lauritzen, Pat Irving; EU © DG EAC 2011

It should be noted that compilation, analysis and projections of labour market data in the US are primarily undertaken to help inform individual labour market participants and in turn contribute to making labour markets function more efficiently (i.e. not to conduct centralised, top down planning). At their root is the idea that there is a very strong public good argument for providing detailed labour market information, explicitly, transparently, systematically and centrally. Thus, despite the primacy given to unforeseeable market forces, projections are seen as a valuable, and indeed essential, element in making markets work better. Additionally the thought is that a very detailed analysis of changing occupational employment structure is both valuable and necessary in order to provide labour market participants with the information they need to operate efficiently and effectively in a market economy. So for the most part labour market data is aimed at supporting informed 'decision-making' for individual users (general public), and to inform policy and investment decisions leading to creation of jobs and economic growth for institutional (congress, federal agencies, state and local governments) and private sector users (businesses and labour unions).

At the federal level, the US DOL has developed a very comprehensive searchable database on labour market projections, and it also manages O*NET, the nation's primary source for occupational information. O*NET is dynamically updated and contains information on hundreds of standardised and occupation-specific descriptors as well as career exploration tools. For example, several organisations and regional authorities use O*NET to project changes in occupational profiles. One project involving the US DOL and several other organisations has linked O*NET data with BLS occupational projections in order to project future skill demands and potential skill gaps in different states. Likewise many studies have also been published within the O*NET framework, thus providing a knowledge-sharing platform. State or city authorities have often used these published studies as the basis for local economic development initiatives where workforce development is one of the components.

Central to the project is the O*NET database, containing information on hundreds of standardised and occupation-specific 'descriptors'. The database, which is available to the public at no cost, is continually updated by surveying a broad range of workers from each occupation. Information from this database forms the heart of O*NET OnLine, an interactive application for exploring and searching occupations. The database also provides the basis for Career Exploration Tools, a set of valuable assessment instruments for workers and students looking to find or change careers. The Occupational Information Network (O*NET) is being developed under the sponsorship of the US Department of Labour and Training Administration (USDOL/ETA) through a grant to the North Carolina Employment Security Commission. Every occupation requires a different mix of knowledge, skills, and abilities comprising a variety of activities and tasks. These distinguishing characteristics of an occupation are described by the O*NET Content Model, which defines the key features of an occupation as a standardised, measurable set of variables called 'descriptors'. This hierarchical model starts with six domains, describing the day-to-day aspects of the job and the qualifications and interests of the typical worker. The model expands to 277 descriptors collected by the O*NET programme, with more collected by other federal agencies such as the Bureau of Labour Statistics. Across industries it is also possible to access online relatively detailed information about occupations within an industry.

Box 7. O*NET Use

O*NET is used by a wide range of different individuals and organisations, including:

- Students

- Young people and other labour market entrants
- Job seekers
- Employers in general
- Business analysts
- Workforce and economic development specialists
- Organisational consultants
- HR professionals
- Training specialists
- Careers counsellors
- Government officials and policy makers
- The military
- Education and training providers
- Teachers and lecturers
- Researchers.

Amongst employers, O*NET is used for:

- Job matching, recruitment and training activities (including writing job descriptions, identifying competencies skills gaps and training needs)
- Developing training programmes and curriculum
- Other human resources planning and related activities
- Business forecasting and analysis.

It is widely used in large organisations and corporations, in both private and public sectors, but its availability via the net also makes it accessible to small and medium size enterprises and individuals.

Individuals use O*NET for career exploration and development, job search and employment transitions. O*NET enables people to learn what jobs might fit their personal interests, skills and experience as well as highlighting the different skills required for different jobs and which occupations and industries are in demand based on the latest workforce information. The system identifies success factors associated with different occupations, including the types of qualifications and competences need to enter and advance in that particular job.

Source: Rob Wilson: *Lessons from America: A research and Policy Briefing*, UKCES Nov. 2010.

In addition, at the state and the regional level there are many examples of anticipation of skills embedded in broader economic development initiatives. The Michigan Works Association and the Michigan Skills Alliance are just two examples of how public policy makers, employers, educators, and other types of organisations at the state level join forces to ensure the availability of a qualified workforce matches emerging demands.

The US Department of Education in recent years engaged in a public private partnership to improve the relevance of the K-12 (primary, elementary, and secondary) education system, including teachers' education in the context of emerging 21st century skills. The term 21st century skills are defined as the skills needed in the 21st century workplace, and the reforms that are required to enable education systems to support the development of those skills. The skills were identified through a process involving educationalists, business leaders, and employer organisations in the US.

7.2 CANADA

Employment and Social Development Canada (ESDC), known as Human Resource and Skills Development Canada (HRSDC) until 2014, is the fourth-largest department of the Government of Canada, and responsible for developing, managing and delivering social programmes and services. ESDC is the major supplier of LMI at the federal level. Most of Canada's LMI, including both analysis of current labour market conditions and labour market forecasts by industry and occupation, is currently produced and generated by the federal government, provincial governments, and sector councils. In addition to ESDC, government agencies such as Service Canada, Statistics Canada, Citizenship and Immigration Canada, and Industry Canada are primary sources of Labour Market Information.

Statistics Canada is the major source of information on the general labour market (as opposed to information on actual job vacancies and persons seeking work) in Canada. The agency provides high

quality, unbiased information on a wide range of labour market indicators. But in recent years, LMI data have emerged from other sources, many in the private sector.

The quality of the labour market information currently available in Canada is very high, largely due to the efforts of Statistics Canada. In addition to high quality, the extent of this information has been considerably expanded in recent years, with much more information now available, for example, incorporating immigration and Aboriginal Canadians.

Canadian LMI can be divided into two basic types of information. The first is data on actual job vacancies offered by employers and data on the characteristics of individuals seeking jobs. The second is aggregate data on the number and characteristics of jobs and job vacancies and the number and labour market characteristics of the employed and unemployed. The first type of data is used by both persons looking for work and employers in their decisions related to the labour market. The second type of information, while also used directly by individuals and employers in their labour market decision-making, is more widely used by policy analysts and educators for labour market policy development and research as well as educational planning purposes. The private sector has done a very good job in the development of information for matching actual job vacancies and persons looking for work through the internet. The private sector has largely ignored the second type of data because of the greater cost of collecting these data and the limited market for such data. The main supplier (and user) of this second type of data is the public sector.

An important LMI product produced by ESDC at the national level is the publication *Looking Ahead: A 10-Year Outlook for the Canadian Labour Market*, prepared by the Strategic Policy Research Directorate. The Canadian Occupational Projection System (COPS) is used to generate these forecasts. The document uses forecasting models to identify likely trends over the medium-term in the level, composition and sources of labour demand and labour supply, and in the industrial and occupational distribution of employment. A key objective is to identify occupations where the current and projected states of supply and demand suggest that imbalances could develop or persist over time. The second key LMI product produced by HRSDC, jointly with Service Canada, is *Job Futures*, touted as 'Canada's national career and education planning tool'. *Job Futures* provides a one-word summary descriptor of employment prospects (limited, fair, good) for the 'current' labour market and for the perspective of the jobseeker for 265 occupational groups. It also provides forecasts of employment opportunities for 155 areas of study and information on the nature of work in the occupation as well as educational requirements.

LMI is both developed and used by many different governmental agencies, and the responsibilities are decentralized among national, province, and local areas. To provide useful information and convenient access to citizens, business, education, and policymakers, many different public and proprietary parties often handle the dissemination of LMI. Traditional users of detailed labour market forecasts by industry and occupation include: government policy makers for decisions related to the allocation of resources for education and training, and decisions related to immigration; post-secondary educators for decisions related to program allocation; employers for the development of in-house training programs for occupations expected to be in short supply as well as for compensation decisions; and of course individual Canadians for decisions related to career paths and relocation.

7.3 AUSTRALIA

In Australia, the traditional labour market indicators and analysis of the supply of and demand for skills is collected by different bodies. The Labour Market Information Portal (LMIP) is owned by the Department of Education, Employment and Workplace Relations (DEEWR). Its purpose is to provide information for the labour market, schooling, higher education, skills development, international education and workplace relations. Indicators include unemployment, job seekers, indigenous workers, indigenous unemployment, etc.

The collection of information that is focused on the supply and demand of skills in Australia is conducted by the Australian Workforce and Productivity Agency⁵⁷ (AWPA) formerly known as Skills Australia. The agency provides the Australian Government with recommendations on skills needs, to assist in the

⁵⁷ AWPA's functions were transferred to Department of Industry in July 2014.

development of effective policy and better outcomes for the community in terms of participation, productivity and the efficient use of resources. Of particular relevance to this study is AWP's approach to measuring skills imbalances. The approach is based on the basic tenet of economic analysis that observing disaggregated changes at the margin provide a stronger signal of underlying forces than observing the stock. The series of indicators included in the methodology were selected to take advantage of this insight. In practice, this means that instead of trying to identify changes in the whole stock of qualifications and skills in the labour market, focus is placed on those parts of the market where the change happens more sharply⁵⁸.

Each year, the Department of Employment produces employment projections by industry, occupation and region for the following five-year period. These employment projections are designed to provide a guide to the future direction of the labour market, however, like all such exercises, they are subject to an inherent degree of uncertainty. These projections are based on ABS employment data for November 2014 and the Government's forecasts and projections in the December 2014 Mid-Year Economic and Fiscal Outlook (MYEFO).

Annual Regional Education, Skills and Jobs Plans are developed by Regional Education, Skills and Jobs (RESJ) Coordinators through close engagement with local communities. The Plans incorporate views from young people; parents; employers (e.g. Industry Skills Councils and Training Boards); educators; service providers; peak bodies; community leaders; government organisations and agencies; and other interested individuals and organisations. The Plans draw strongly upon existing strategic plans in each region, including the local Regional Development Australia regional plans. Each RESJ Plan reflects community priorities and goals and includes local strategies to achieve those goals for the four key themes expressed in each RESJ Plan; namely:

- early childhood education and care
- school education
- tertiary education and training
- jobs, skills and workforce development.

The Plans build on the range of services and programmes already offered by the Department of Employment (the department) and the strategies also draw on the programmes of other government agencies as well as the opportunities arising from major local projects.

Box 8. Australian Workforce Development Strategy

The strategy outlines how Australia can develop its knowledge economy and workforce to meet current and future needs. Key ingredients include:

- Increasing the pool of tertiary qualifications by 3% per annum to 2025 with higher qualifications needing to grow faster
- Driving improved productivity in workplaces by providing greater access for industry to government funding for workforce development and by gaining a better understanding of the capabilities of Australia's managers
- Adopting a range of measures to lift the participation rate, including focusing on marginal and older workers and men and women in non-traditional occupations
- Stepping up to the challenge of raising language, literacy and numeracy levels as a critical national priority, through five-yearly sampling of performance, better marketing of existing programmes and targeted funding
- Ensuring the tertiary sector is adequately funded by lifting investment by at least 3% per year with contributions from individuals, organisations and governments
- Continuing to lift the quality of the tertiary sector, by introducing external assessment of selected VET courses.

Source: *Australian Workforce and Productivity Agency: Future Focus. 2013 National Workforce Development Strategy*

⁵⁸ Cuen Sharrock & Sybil Chabane: Op. cit.

7.4 SINGAPORE

The Manpower Research and Statistics Department of the Ministry of Manpower conducts surveys to collect national statistics on the labour market. The statistics help the Government in shaping manpower policies and programmes, and facilitates employers, workers and job seekers in making informed decisions on HR and career matters. The Department conducts two surveys:

Labour Force Survey: The survey seeks to collect data on unemployment, which is one of the most closely monitored indicators of the Singapore labour market and economy. The survey covers a sample of 10,200 households every month. Respondents are encouraged to complete the survey online via the internet. Alternatively, they can provide the information through a phone interview or a face-to-face interview.

Labour Market Survey: The survey seeks to gather manpower-related information such as job vacancy, labour turnover and redundancy. The survey covers about 16,500 private sector establishments with at least 25 employees and the public sector. Respondents can complete the survey online via the internet. Alternatively, respondents can return the completed questionnaires by post, email or fax. Data clarifications are made through phone. The survey is conducted annually.

The Workforce Development Agency⁵⁹ is mandated to enhance the competitiveness of the workforce by encouraging workers to learn for life and advance with skills. WDA collaborates with employers, industry associations, the Union and training organisations, to develop and strengthen the Continuing Education and Training (CET) system that is skills-based, open and accessible, as a mainstream pathway for all workers - young and older, from rank and file to professionals and executives - to upgrade and advance in their careers and lives. Furthermore, WDA aims to help workers advance in their careers and lives by developing and strengthening skills-based training for adults. WDA works with various partners - including employers, industry associations, the Union and training organisations--to develop relevant skills-based training that is accessible to all in the Workforce, whether young or old, from rank-and-file to professionals and executives. WDA also manages Singapore Workforce Skills Qualifications (WSQ), the national credentialing system.

7.5 INDIA

In February 2009, the Government announced the new Skill Policy. As an integral part of the policy, the National Skills Development Corporation was mandated to set up Sector Skill Councils. The Councils were to have the following functions: setting up Labour Market Information Systems to assist planning and delivery of training; identifying skill development needs and preparing a catalogue of skill types; developing a sector skill development plan and maintaining a skill inventory; developing skill competency standards and qualifications; standardising affiliation and accreditation processes; participating in affiliation, accreditation, and standardisation; planning and executing training of trainers; and promoting academies of excellence. This was a significant departure from the past and will mark a new era of skill development in India.

Given that India followed an elaborate planning system, and as part of the process of development of the five-year plan, inputs were sought from various organisations as to the need for different levels of manpower in the country over the five years that the plan sought to address. These were diverse, dispersed and perhaps un-coordinated efforts. While it is clear that these efforts were useful when they were conceived – in the current scenario, and given the fact that the needs of the country were now different, it was felt that there was both a need to review/revamp the existing systems as well as attempt something new. Hence, in the National Skills Policy of 2009, there was a specific focus on LMIS and Sector Skill Councils.

The first multi-sectoral Human Resources and Skills requirements study in multiple sectors was carried for the NSDC in 2009/10. These studies were carried out in 20 high growth sectors and the unorganised sector in India. The sectors covered included: Textiles & Clothing; Building & Construction; Auto & Auto Components; Transportation, Logistics; Real Estate Services; Food Processing; Organised Retail; Health

⁵⁹ <http://www.wda.gov.sg/content/wdawebbsite/>

care services; Education and skill development; Banking, Financial Services & Insurance; Gems and Jewellery; IT & ITES; Tourism & Hospitality Service, Travel Trade; Leather & Leather goods; Furniture and furnishings; Electronics & IT Hardware; Media & Entertainment; Chemicals & Pharmaceuticals; and Construction Material, Building Hardware. A study for the unorganised sector was also carried out. The study of the unorganised sector was important, because over 93% of employment in India is in the unorganised sector, with the balance in the organised sector. An important aspect of all these skill gap reports, or LMIS, was that in almost all cases this research was funded by state governments directly or through an industry association. The impact of these studies released in 2009-10 was multifold. First, many job seekers realised that there were opportunities in various sectors and for many, this resulted in a new resolve to train themselves to be able to participate in the growth story. Industry and employers also realised that the gap was so large that this could not be resolved by individual CSR efforts.

Government used these as indicators of where intervention was required, and also to focus on the top five sectors to review curriculum. For training providers, it was a clear indication of the opportunities available and encouraged them to set up large-scale training ventures. In fact, the demand supply gaps identified have led to an understanding and belief that skill development could be carried out in a sustainable manner and need not be dependent on aid, charity, or subsidy. Many training organisations have used this information to set up large-scale ventures that could generate a surplus to enable them to sustain this over a period of time.⁶⁰

Box 9. India towards a new skills development policy

The Modi government is set to launch a new skill development policy by March 2015 that would bridge the gap between educational institutions and the labour market. The new scheme is expected to move beyond the target of skilling 500 million youth by 2020 that was set by the previous government. The purpose is to promote the revival of the country's manufacturing sector 'as a cornerstone of the economy'. However, India faces serious challenges in order to achieve this noble goal.

First, according to the 11th five-year plan, only 10% of the Indian workforce has formal training in the form of higher education, technical education or vocational training. India currently has an annual training capacity of 4.3 million, which is less than 20% of the industry requirement of 22 million skilled workers a year. Second, the existing institutional structure consists of a plethora of agencies with overlapping and conflicting priorities. The government estimates that currently skill development efforts are spread across approximately 20 separate ministries and 35 state governments and union territories. A National Skill Development Agency was created in 2013 to consolidate efforts in this sphere, but it mainly has a coordination role and lacks any effective powers and remains significantly under-resourced. Third, the training infrastructure for imparting technical and vocational skills is inadequate. In terms of current capacity, it is estimated that various publicly funded organisations produce 3.5 million trained personnel per annum against the 12.8 million new entrants into the workforce each year. In addition, the infrastructure in the skill development sector today is largely government-owned while private sector investment hasn't been incentivized. Fourth, the focus of vocational training offered in India is badly mismatched with the needs of casual workers who constitute 90% of the labour force, resulting in a shortage of skilled workers at the national level. Casual workers, such as construction workers, often comprise workers from rural areas with little or no education and need support and training. The Central government's findings estimate that the construction sector is likely to create over six times more jobs than the information technology and related services sectors by 2022. Yet the policy focus —particularly at the state level—has generally prioritized ICT.

It is clear that the domestic skill development policy needs to be urgently overhauled. The institutional structure needs simplification with greater investment in training infrastructure and an emphasis on supporting a casual labour force. That needs to be accompanied with incentives for private sector participation too.

Source: Rishabh Bhandari: *Need to reboot the skill development policy in India*; in: *LiveMint* Nov. 18, 2014.

⁶⁰ International Network of Sector Skills Organisations: *International Perspectives on Labour Market Intelligence*. Toronto (no year).

7.6 MALAYSIA

Labour market monitoring is in the hands of the Institute of Labour Market Information and Analysis (ILMIA). ILMIA is an independent, national centre of excellence under the direct purview of the Ministry of Human Resources for the analysis of labour market trends and emerging human capital issues which will contribute to better human capital planning and effective labour market policies formulation. The mandate of ILMIA includes development of key LMI and benchmarking with other countries, analyses of labour market supply demand gaps, analyses of the trend on labour productivity and its implication, analyses of the job requirement of different occupation consistent with the needs of the industry, analyses of future training and skill requirements to meet demand and potential high-growth sectors, analyses of the impact of foreign workers on the labour market and analyses of wage trends and benchmarking with other countries.

In the formal education sector, the Ministry of Education (MOE) is the agency responsible for establishing and setting in place a comprehensive schooling system from pre-school to secondary education, including technical education. TVET programmes at the secondary school level have taken a broad-based and non-terminal approach. The delivery system allows the opportunity for students to progress to tertiary education level and acquire a Certificate, Diploma or a Bachelor's degree qualification.

The ministry has been strengthening the TVET within the schooling system by introducing TVET skills stream at all national secondary schools under the 10th Malaysia Plan. The purpose is to equip the students with the Sijil Kemahiran Malaysia (SKM)-level skills to make it easy for them to obtain employment even if they do not do well in the Sijil Pelajaran Malaysia (SPM) examination. At the same time, technical secondary schools have been turned into vocational secondary schools which focus on the vocational and skills stream. It is expected the number of Form Four students undergoing the skills training programme at technical secondary schools nationwide will rise dramatically. Earlier, the ministry had introduced 22 vocational subjects to national secondary schools to allow students to obtain SKM. Other strategies include boosting enrolment in the vocational and skills stream at technical secondary schools, strengthening the technical and vocational education curriculum and enhancing ties with the industry, professional bodies and higher education institutes both local and overseas. The government has also reviewed the curriculum to introduce vocational subjects that can be studied as early as the upper-primary and lower secondary levels.

Outside the formal sector, the Ministry of Human Resources is spearheading the training sector with fourteen industrial training institutes (ITIs). It has been the target of the ministry to have a pool of knowledge workers, building to more than 35,000. Knowledge workers are expected to have three key sets of competences – technical, social and learning. The ministry believes that one of the best ways of workers and potential workers obtaining these competencies is through apprenticeships which, by definition, should combine all three skill sets. These ITIs offer industrial skills training programmes at basic, intermediate and advanced levels for pre-employment or job entry level. These include apprenticeship programmes in the mechanical, electrical, building and printing trades as well as programmes to upgrade skills and train instructors. The Ministry also operates the Centre for Instructors and Advanced Skills Training (CIAST), the Japan-Malaysia Technical Institute (JMTI) and four Advanced Technology Centres (ADTECs).

The Ministry of Higher Education, supervises polytechnics and community colleges to prepare skilled manpower for industries. At the post-secondary level, the formal training conducted in polytechnics and community colleges aims to produce trained manpower at the semi-professional level in engineering, commerce and services sectors. More polytechnics and community colleges are being planned.

The Ministry of Education runs 90 technical schools offering technical and vocational courses. School leavers from the technical schools can either seek employment at entry level or pursue their post-secondary education at certificate or diploma level in Polytechnics or Community Colleges under the purview of Ministry of Higher Education or other training institutions under the supervision of other ministries. Ministry of Youth and Sports provides basic, intermediate and advanced levels of industrial skills training through its seven youth skills training centres and the Youth Advanced Skills Training Centre. Short-term courses and skills upgrading programmes are also being conducted.

Majlis Amanah Rakyat (MARA), or the Council of Trust for the Indigenous People under the purview of the Ministry of Entrepreneur and Cooperative Development, operates twelve skills training institutes in different parts of the country which offer programmes at basic, intermediate and advanced levels. MARA also coordinates the operations of three advanced skills training institutions, i.e. the German-Malaysian Institute (GMI), British Malaysian Institute (BMI) and Malaysia France Institute (MFI). Since the year 2004, two reforms to the training sector has been introduced, namely, 1) a new curricula that will integrate academic studies and vocational training, and 2) directly involving industry or the private sector in the development and implementation of the new national curricula for the training sector.

The National Dual Training System (NDTS) was introduced in 2005 with an initial batch of 500 trainees, in response to recommendations made by German consultants. The NDTS is based on the German method of training in both training institutions and the workplace. The system stresses the combination and interrelation of hands-on training at the industry workplace with classroom training in specialised training institutions established by the Government. Training is two years in duration, with trainees spending 70-80% of their time in workplaces and the remaining 20-30% in selected training institutions. A very important aspect is the need for close cooperation between the Government and private industry in which the latter must be encouraged and convinced about the importance of investing in training of the young to ensure continued industrial development of the country.

Besides the dual training scheme, training institutions are encouraged to collaborate with industries to enhance the effectiveness of their training programmes. This approach is a combination of work-based training and attendance of part-time vocational training. For this purpose many vocational and technical training institutes are offering part-time programmes for technical employees with relevant working experiences. The focus of this system is hands-on training at the workplace whereas the training institution provides the theoretical foundations. By acquiring work-related experiences, a school leaver with Sijil Pelajaran Malaysia can be trained to be a certified skilled worker to meet the needs of industries.

National Occupational Skills Standards (NOSS)' was introduced in 1992 as the basis for the accreditation standard of the national skills certification system in Malaysia. Later, NOSS became the legislative framework of the vocational training system in the country with the enactment of the National Skills Development Act in 2006. The act contains special provision for the establishment of NOSS, its review and variation as well as the use of NOSS for curriculum development, assessment and certification. Today, all skills training curricula is based on NOSS and is offered by a wide variety of public and private training institutions.

7.7 SUMMARY

The selected examples of non-EU LMI and skills planning practice are highly diverse. While the collection of LMI in the US is primarily considered a service provided to citizens and people dealing with planning of educational and skills training activities, the Canadian and Australian authorities similar to most European countries perceive labour market intelligence an important planning tool used for setting educational and training priorities and thus decision-making on resource allocations. Singapore and Malaysia are the classical examples of a 'developmental state' approach'. Addressing specific skills gaps, the WDA in Singapore manages a number of skills development and training schemes, all funded through a combination of government grants and a mandatory skills levy. Malaysia has focused on early vocationalisation of the education system as a strategy for increasing the employability of new entrants to the labour market, while leaving relative much space for the market forces to set the direction of skills training. Finally, India is an example of a country which, despite substantial investments in skills training, is still suffering from serious labour market imbalances and skills shortages.

Country	Focal point for LMI/forecasting	Focal point for TVET	Focal point for Higher Education
USA	Department of Labour	The individual federal states	Doesn't really apply to the US
Canada	Employment and Social Development	The individual province or federal territory	The individual province or federal territory
Australia	Department of Education, Employment and Training Australian/Workforce and	Standing Council for Tertiary Education, Skills and Employment	Department of Education & Training

	Productivity Agency and Workplace Relations	(SCOTese)/Australian Skills Quality Authority (ASQA)	
Singapore	Manpower Research and Statistics Department	Workforce Development Agency	Ministry of Education
India	National Skills Development Corporation	Federal states	Federal states
Malaysia	Institute of Labour Market Information and Analysis	Ministry of Education	Ministry of Higher Education

8. study tour recommendations

Based on a consideration of different approaches and practices in relation to labour market monitoring and skills planning, the following EU member states are considered of particular interest for the SA-EU Dialogue on skills planning:

Sweden, Denmark or the Netherlands: All are practicing sub-national labour market monitoring and skills planning, and combine these with elements of employment measures. Tripartite consultations are a key element of skills planning. The government (state) is the principal provider of TVET in all three countries. Denmark and the Netherlands both have well-developed dual training systems.

United Kingdom (including Scotland) and Ireland: Have developed very sophisticated mechanisms for labour market intelligence and information combined with strong national bodies for skills planning. Both subscribe to a market-led skills planning approach, based on strong private sector involvement through Sector Skills Councils. Scotland should however be treated as a special case due to the relatively strong state regulation of TVET.

Germany: Has developed a comprehensive skills planning system combining federal and state level forecasting mechanisms. While labour market monitoring and forecasting is widely a federal level task, provision of TVET is primarily dealt with by the federal states or sector-based chambers (the dual system).

Czech Republic: EU member state which has more recently started to apply the EU LMI and skills planning guidelines. LMI in the Czech Republic tends to focus on regional (sub-national) trends.

See attached matrix for further information.

It is assumed that key issues for further investigation in connection with the study tour would mostly relate to the practical dimensions of skills planning in these countries, including tasks and responsibilities of different levels of decision-making, the resource implications of different practices and specific skills planning measures and incentives.

9. what can SA learn from the international experiences?

This document has reflected on the experiences in South Africa, the challenges that have been encountered in implementing skills planning and the policy and research processes that have been put in place to address these challenges. A summary of the key issues highlighted by the South African component of this document includes:

- The term 'skills planning' has a very particular meaning in the South African context. Few other countries use the term the way it is understood in South Africa. The main reason for this is a widespread scepticism, elsewhere in the world, regarding the extent to which forecasts can be translated into specific skills development plans. As will be discussed below experience shows that even the most sophisticated forecasting models have not been able to foresee the effect of external factors beyond the control of the individual governments and the educational preferences of young people. Furthermore, in many countries, especially higher education is only partially under the government's control. Instead, the tendency is towards constant and

extensive stakeholder consultations combined with continuous adjustments of the supply of training and education offers based on the known demand for various professions and skills;

- South Africa has undertaken a number of initiatives to support skills planning at a national as well as sectoral levels;
- There are credible routine national data sets available to support planning. These are the responsibility of StatsSA and provide valuable insights into the labour market. However the occupational and sector classifications utilised by StatsSA are not consistent with those utilised in the skills development system and there are gaps in the data. There is also firm level data collected through the WSP/ATR though the credibility and quality of this data is very variable;
- There has been extensive research undertaken to conceptualise a skills planning mechanism: this includes work that was undertaken by the HRDC, the Department of Higher Education and Training, SIPS and the LMIP;
- There is agreement among decision-makers in South Africa about the importance of a skills planning mechanism that focuses 'the collection and analysis of labour market intelligence and information on the supply of and demand for skills, and to the use of such data and analysis for the purposes of planning, resource allocation, and interventions to address both current and anticipated skills requirements';
- The kinds of labour market information that is required to support such a system and the nature of the data that is available against these requirements;
- The ways in which key players in South Africa wish to utilise this data to inform education planning (in terms of enrolment, institutional infrastructure and capacity requirements) as well as to inform other processes such as those related to career guidance and the allocation of scarce skills visas;
- That this has implications for the planning horizons that are required and emphasises the importance of understanding current demand as well as medium and long-term demand. Thus there is a need to understand current demand to inform immigration processes (and some short skills development priorities as well as curriculum change in institutions of learning), and to understand possible future demand (5 – 10 years) to inform education planning (including steering the Programme Qualifications Mix in public institutions and the priorities for the development and funding of programmes against occupational qualifications, allocating funds to support infrastructure development in institutions of learning (such as workshops, etc.), allocation of bursaries). Further an understanding of both short and long-term demand is required to ensure that there is information available to support career guidance;
- There is a need to consider planning from an economy-wide perspective – using an occupational lens - at a national level as well as provincial and regional levels;
- There is an increasing understanding of the capacity requirements to operate an effective skills planning system. Efforts have started to tease out the roles and responsibilities of different players.

The international learning highlights the need to: utilise different methodologies to determine current shortages and medium to long-term demand. It emphasises the importance of identifying key sectors – rather than trying to focus on all sectors - that are considered important for the economy and determining what the demand is in these sectors and then developing intervention strategies to address these and establishing steering mechanisms to support the implementation of these strategies.

There is also a need to understand how this national picture takes into account supply and demand at a local level, which both requires plans to be made at a local level (matching supply and demand and addressing imbalances) and also takes into account more organic relationships that are formed between employers and institutions of learning. These local initiatives are critical for creating the space for a local skills ecology to develop that can support growth in an area.

International experience also suggests that the accuracy and freshness of data is critical for the reliability of the prognoses and the possibility for disaggregation to the regional/provincial level. In most EU member states one agency has the overall responsibility for the compilation of the different source of data into a comprehensive national prognosis, while regional authorities prepare decentralised prognoses matching their specific information needs. At both levels, labour market forecasts are used with considerable caution, particularly in relation to planning of vocational training and lower level tertiary education, due to the uncertainty associated with estimation of future economic and social development.

Instead, most countries have developed rapid response mechanisms allowing relatively swift adjustments in terms of enrolment and course content, based on consultative processes. This is possible due to the existence of well-function advisory stakeholder bodies such as Sector Skills Council and, not least, the empowerment of the management of the individual training institution to make the necessary adjustments of the teaching staff and to acquire the necessary equipment and learning material. In most instance, the management is accountable to a private sector dominated stakeholder board.

As regards translation of labour market intelligence and prognoses into specific skills development plans, for vocational training and institutions that teach specific capacities of higher learning (nursing schools, colleges etc.) this takes places either at the regional level or at national level through a consultative process involving key stakeholders with private sector (employer) dominance. For higher education, the process varies considerably among the EU member states, depending on the relative weight of public and private tertiary institutions and the autonomy of each institution, but for public owned (and financed) higher education institution the Ministry of Higher Education usually has the final say on the intake.

These findings suggest the following:

1. Skills Planning needs to take place at a national economy wide level, in key sectors and at a local (provincial) level;
2. The current process that has been put in place by DHET and EDD should be strengthened and a methodology developed to analyse the implications of the economic policies with respect to areas of anticipated growth and the kinds of skills that will be required to support these. This should focus on the development of scenarios that consider the anticipated trajectory of the economy based on economic policies and incentives as well as the ways in which industry leaders anticipate their sectors will grow and the skills implications of this;
3. At sector level it is proposed that a number of key sectors be identified and a group of key role players (employers and labour unions) and experts should be convened for each sector and an analysis of the trajectory of the sector and their skills needs should be undertaken. This should be linked to a clear strategy of working with learning institutions to establish how they can support the identified skills needs and what enabling mechanisms are required to allow for these changes to take place. This could include funding for changes to the curricula, infrastructure and bursaries. This would also need to be coupled with a career guidance process that encouraged learners to enter these sectors;
4. At a regional/local level there is a need for planning that takes into account the current stock within the area, the demand for labour, the institutions of learning that can support the requisite supply as well as determine other strategies for addressing any gaps. This should be coupled with strategies to work with employers to consider other labour market strategies to create greater levels of stability of employment and a continuous application of skills;
9. Moving from an analysis of skills requirements to the development of skills to meet those requirements is difficult. This move is easier to make if the forecasting analysis defines the key occupations required at a broad level, so that decisions can be taken as to what should be prioritized for development, or review, as required. This assumes that there is a process to define occupational families and that decisions are taken about the number, title and scope of the occupations per family;
10. Different procedures are required for the translation of forecasts into skills plans for higher education and TVET/higher learning institutions. The time horizon is shorter for the latter and requires more flexible responses. The role of different stakeholders in this process should be clearly defined;
11. Further, there is a need to ensure that feedback about demand is provided to TVET/HE institutions and that this is complimented through mechanisms that enable institutions to revise curricula where required and enrol additional students and for students to access the programmes (through, for example, bursaries that support students to access priority programmes). It also means supporting education institutions, as they need time and resources to conduct research and have up-to-date knowledge of occupational areas. Setting of standards and targets alone does not ensure that the graduates possess the knowledge and skills required by different occupations.

The DHET Planning Unit should enable the above through supporting the economic departments to develop the methodology for participatory skills planning. Further, they should enable this process – both national and sectoral – through undertaking an analysis of national data and utilizing a combination of qualitative and quantitative techniques, which focus on broad areas in which skills will be required. This

could include an analysis of nation-wide data pertaining to the economy, surveys as well as key interviews and focus groups with relevant role players. In addition, it is anticipated that the discussions underway to review the purpose and templates of the WSP and ATR and to standardise these across sectors will support the quality of data. Interviews with individuals from the SETAs also indicate that they support the idea of their data being pulled into a national database to allow this analysis to take place. The White Paper on post-schooling education and training suggests that in order to improve the quality of data in the WSP, there is a need for the mandatory grant to be paid to employers to enable them to develop a system for more effective reporting of data (both plans and reports). It is anticipated that this will require individual unit data, which will ultimately make reporting easier for employers (given the multiple reports that require this data including employment equity plans and reporting against the BBBEE code) and improve the quality of analysis that is possible. These further points aim to the possibility of using WSP data to support an economy wide analysis. Further, DHET officials state that there is a process in place with StatsSA to consider whether there is a need for additional questions (or refining existing questions) to improve the quality and availability of data available against key indicators.

All of these interventions need to consider the ways in which demand is driven and that recognises that skills development the way it is presently practised, will not, in the absence of changes to the economy, enable effective utilisation of the skills within the labour market that many individuals have acquired. Further, there is a need to consider the other labour market factors that impact on demand – and result in shortages – such as wages, security of employment and progression possibilities.

10. Conclusion

The observations and ideas outlined in this report should be seen as an input to the ongoing discourse on how to improve the skills planning practice in South Africa. The ideas are supposed to be refined further during the next phase of the EU-SA Dialogue Programme taking into account the insights obtained from the study tour and the continuation of the dialogue process. In short, the key messages we have tried convey through this study report can be summarized as follows:

- The accuracy, freshness and detailness of the data used for labour market forecasting and skills planning are important for the success of the planning process. This is particularly important under circumstances where there are big local (provincial) differences and the economy is undergoing rapid change, which is the case in South Africa. Strengthening of the provincial labour market monitoring capacity is an element of this;
- The capacity of potential users to analyse the data and translate these into action-oriented prognoses is critical for the ability of the TVET system to respond to the steady changing labour market. Lessons from the EU show it is essential that all levels of the skills planning system and all direct users have access to reliable labour market data, that they are capable of understanding these and, not least, that they are empowered to make the necessary adjustments to their organisations in response to the data;
- The point of departure for forecasts on future trends is usually data reflecting recent developments. Therefore, the ability to estimate the effect of future economic and demographic trends including the effect of external factors into the forecasting models is essential for the usefulness of the prognoses. Cedefop and OECD as well as several EU countries have put considerable resources into the development of macro-economic models aimed at facilitating forecasting of future skills scenarios. This is one of the focus areas of the LMIP and probably an area where South Africa has relatively little to learn from the EU;
- The accuracy with which future demand for different occupations can be estimated varies considerably, depending on the impact of external factors. For instance, the demand for education and health sector staff is easier to forecast than that for workers in the construction and manufacturing industries;
- Not even the most sophisticated forecasting models can substitute for consultative processes involving the social partners, based on mutual trust and respect. Especially for short and medium-term skills planning, consultative bodies as sector skills councils play an important role. All EU countries have such consultative mechanisms at both national and local (regional) level. In most instances the individual TVET/HE institutions also have boards (advisory committees) with private sector – and often trade union – participations. Especially in the TVET sector these consultative process play a key role in all skills planning; While the central government plays an

important role in terms of conducting labour market forecasts and setting the framework conditions for TVET and HE, it is essential that the individual education institutions are empowered to respond to skills needs and opportunities within their domain in order to allow flexible and quick responses to skills imbalances;

- There is nothing like one size fits all. A multitude of skills planning tools and mechanisms are available such as quotas, budget ceilings, bursaries, incentives schemes etc. At the end of the day, the most adequate combination of tools and mechanisms to be applied is a political decision which should reflect the resources available and the institutional capacity of the TVET and HE sub-systems;
- Labour market prognoses are indicative only and should be used with considerable caution. First, skills planning deals with human beings, and their expectations and aspirations may not necessarily coincide with those of the policy-makers and planners; second, skills planning involves a multiplicity of actors the behaviour of which is difficult to predict; third, many TVET and HE provider and outside of the government's control and may therefore not respond to the applied skills planning tools. The youth unemployment challenges and skills shortages experienced by several European countries illustrate the difficulty of skills and education planning;
- It requires more than labour market relevant education and skills training, even when based on solid prognoses and planning process, to overcome structural factors causing a mismatch between demand and supply. Without healthy economic, employment and social policies the structural imbalances tends to remain. For instance most European countries combine employment measures with skills measures as means to regulate labour market imbalances – on top of financial and economic instruments.

In conclusion, European and other international experience suggest that there is no single factor determining whether the skills forecasting and planning leads to the desired result. Rather, it is a combination of several elements including availability of updated reliable data allowing disaggregation by trade and locality, strong analytical capacity of key decision-makers, solid and elaborated consultative mechanisms based on mutual trust, and flexible TVET and HE structures allowing smooth adjustment to changes of the labour market.

EU-South Africa Skills Planning Dialogue International Study Visits: Decision Matrix

Country Issue	UK	Ireland	Denmark	Sweden	Germany	The Netherlands	USA	OECD	EU Institutions	International Institutions	Australia	Singapore	
Enterprise/Firm Survey	National Employer Skills Survey (UKCES)		Stats Denmark conducts frequent enterprise surveys	Job Vacancy Survey	Employer skills surveys at federal and state level	Foundation for Cooperation on Vocational Education, Training and the Labour Market (S-BB)			CEDEFOP, Thessaloniki Greece				
Forecasting/Futures	Working Futures Future of Work (UKCES)	Export Group on Future Skill Needs (EGFSN) Manpower Employment Outlook Survey		Trends and Forecasts by Stats Sweden	'Labour Market 2030' study	Netherlands Bureau for Economic Policy Analysis (CPB) Social Statistical Database (S-SB)	O*NET programme (by DOL)		CEDEFOP			Skills Future	
Overall supply and demand LMI	Skills Audit Frame-work; Ambition 2020 Policy and LMI Frame-work (UKCES)	Forfás (now SOLAS) Economic and Social Research Institute (ESRI)	Regional councils	Stats Sweden (MONA)	The Institute for Employment Research (IAB) Federal Institute for Vocational Education and Training (BIBB) IZA	Central Bureau of Statistics (CBS) Provincial LMIs	O*NET	Skills Strategy Adult Skills Survey (PIAAC) (Paris, France)	CEDEFOP DG Employment Skills Panorama (Brussels, Belgium)	World Bank: STEP; Country Studies Washington USA ILO: G20 Training Strategy; Employability Geneva, Switzerland		Workforce Dev'tment Agency (WDA) LM Statistical Info Portal	
Skills Shortage List	Migration Advisory Committee	Critical Skills Employment	By Immigration Service (for	By Swedish Institute (for work		By Min. of Social Affairs &					157 Visa shortage list		

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Final Report

Country Issue	UK	Ireland	Denmark	Sweden	Germany	The Netherlands	USA	OECD	EU Institutions	International Institutions	Australia	Singapore	
	(MAC) Skills shortage list	List by Dept. of Jobs, Enterprise & Innovation	work permit purposes)	permit purposes)		Employment (work permit related)					(NILS)		
Education Outcome/ Tracking Studies	KIS/DHEL (Destinations of HE Leavers) FE Choices	Economic and Social Research Institute (ESRI)	Destination studies by Stats Denmark and Min. of Education	Stats Sweden	QUBE project (BIBB)	The Research Centre for Education and the Labour Market (ROA)							
Inward investment and college provision		N. Ireland Colleges					BMW/ Boeing and Community Colleges in South Carolina						
Provider responsiveness			Through regional sector councils		Dual system is widely provider responsive		NSC (SWEAP)	Skills Beyond School and Learning for Jobs reviews			VET Reform Task Force	Institute for Adult Learning	
Employer ownership/ Business Leadership	UK Commission for Employment and Skills (UKCES)		National Council for Vocational Training	National Programme Councils Advisory Labour Market Council	Dual system is widely employer driven	Foundation for Cooperation on Vocational Education, Training and the Labour Market (S-BB)							
Capacity building							National Association of Workforce Boards		European Training Foundation (Turin, Italy)				

Country Issue	UK	Ireland	Denmark	Sweden	Germany	The Netherlands	USA	OECD	EU Institutions	International Institutions	Australia	Singapore	
							(NAWB) National Skills Coalition (NSC)		ILO (Skills Academy)				
Sectors/ Partner-ships	Sector Skills Councils (SSCs)		Sector skills councils and trade committees		Skills councils at both federal and state level	Sector Skills Bodies	National Network of Sector Partners (NNSP)				Industry Skills Councils	Sectoral Manpower Strategies	
General							Department of Labor Washington and San Francisco						

Note: 1/Green shading indicates preferred (a) desirable visit *location* and (b) desirable *issue* to examine

2/To develop in the light of Study Interim Report in mid-February e.g. Sweden

