

Technical Vocational
Education
and Training Index

Preamble

The scientific and technological revolution in the current era and the profound transformations in various fields of human life have made it necessary for countries, including the Arab countries, to keep abreast of the changing development needs. To prepare for and address future challenges, the struggle to acquire knowledge will be intense. Building human capital that can be efficient in applying knowledge for development will be a decisive factor for success.

In this regard, educational systems are pressed to review their educational philosophies, aspirations and tools in order to advance the quality of educational services, “to support the empowerment of minds and spirits capable of establishing knowledge societies in the Arab region, while effectively contributing to the global knowledge system and the advancement of human civilisation.”¹

Accordingly, many Arab countries have launched initiatives to review their educational systems, and introduced reforms varying in extent and effectiveness from one country to another. Varying levels of success has been achieved as a result of these initiatives. While some success has been recorded as such for the educational systems in general, Technical and Vocational Education and Training (TVET) systems in the Arab region until recently remained static, if not regressed, for many complex reasons relating to poor policy choices or socio-cultural reasons. The extensive invasion of technology, however, and the subsequent changes in the composition of the labour market in terms of types of vocations and labour requirements generated a new push for this sector.

The new interest therefore concerns mostly on making this sector more responsive to the market needs to better serve development objectives. According to a document produced by the United Nations Educational, Scientific and Cultural Organisation (UNESCO) and the International Labour Organisation (ILO) this sector contributes “to developing the knowledge of science and technology, with respect to a wide range of professions that

require technical and vocational qualifications and special skills in limited professions. It is therefore necessary to organise national education and training in vocational fields that sufficiently develop knowledge and skills to make the workforce more flexible towards the needs of local labour markets, more responsive to them, and capable of competing in a globally economic framework”.²

The Importance of Measuring and Monitoring the Technical Vocational Education and Training Sector

In accordance with the importance of the growing TVET sector, numerous attempts have been made to put in place reference frameworks based on a group of criteria and indicators to assess the effectiveness of its institutions and programmes, the quality of their outputs and to generally evaluate the sector’s performance. These criteria and performance indicators are associated with several dimensions, the most important of which are the labour market and production system, in terms of the harmonisation achieved between TVET system outputs and the demand in economy for quality and quantity.

Thus, in the effort of transitioning to knowledge societies and economies, there is a need to address the issue of unemployment. However, reduced economic output can no longer be limited to expanding TVET processes. More importantly, TVET systems have to be developed to reach a higher degree of effectiveness, flexibility, efficiency, and sustainability in responding to the needs in the economy. This will contribute to the creation of a highly efficient workforce, that is able to quickly adapt to changing circumstances and to the needs of the labour market, able to drive economic growth and promotion, and therefore capable of driving the wheel of growth.

For decades, this is what developing countries have strived to achieve, and today, they account for 80 per cent of the world’s industrial production. Meanwhile the situation in the Arab region is still suffering from ‘declining productivity and rising unemployment rates amongst the educated classes, and the

inability of Arab labour to compete with foreign labour indicates a large gap between educational training and the needs of the labour market. It also indicates the weakness of the TVET programmes, which require work to improve Arab labour capabilities in several ways, including through reforming the TVET system, making it more attractive to young people by involving the private sector to contribute actively to training by creating investment and participating in government training institutions'.³

Associated with the acknowledged need to reform, concerns were raised on how to assess the TVET systems as one of the integration mechanisms between educational policy planning and employment policy. The UNESCO International Centre for Technical and Vocational Education and Training⁴ is regarded as one of the most important international institutions in the technical and vocational fields. It monitors the sector and issues descriptive reports on the structure of the system adopted in every country, along with its main components, and the best approaches for its management and funding. Several of these reports covered Arab countries, namely Egypt, Iraq, Jordan, Lebanon, Oman, Palestine, Qatar, Saudi Arabia, United Arab Emirates and Yemen. Additionally, in 2010, the European Training Foundation (ETF)⁵ launched the Torino Process, a participatory process based on periodic analyses (once every two years) of real, quantitative and qualitative data relating to TVET policies in a particular country, in order to develop a consensus on the possible routes for development of this sector. The Arab countries that participated in this process were Algeria, Egypt, Jordan, Palestine, Lebanon, Libya, Morocco and Tunisia.⁶

The Role of TVET in Achieving Knowledge for Development

The Sector's Importance in Relation to 'Knowledge for Development'

TVET systems aim to facilitate the integration of young people in the labour market. Although important, this function is no longer sufficient

for the economies of the Arab region to introduce knowledge-driven economies. From this perspective, TVET has become a second source of employment represented by the provision of knowledge workers at intermediate levels. These workers contribute to knowledge economy to compete under the challenges of globalisation, neutralising its negative economic and social effects, and exploiting the new opportunities associated with it. By applying vocational knowledge acquired through the various pathways of production, the new workforce improves the chances of harmonisation between supply and demand, particularly in new economic fields, and to improving job satisfaction for workers. It also leads to increasing productivity for labour.

In the changing economic environment, acquiring the most updated vocational and technical skills has become essential in finding decent jobs and remaining in positions, and progressing in careers. By providing these, TVET has a direct relationship with human development in that its outputs allow individuals to be empowered through the jobs they acquire by the knowledge they apply in the production processes. This has socio-economic impact as it contributes to reducing unemployment in changing circumstances and addressing poverty.

In this context, the poverty phenomenon is significantly linked with levels of education and vocational skills, as well as to labour productivity, which is considered one of the principal determinants for improving the average income per capita in society. The gradual transition from 'standard of living' as a quantitative concept, to 'type of life' as a qualitative concept, relates to the quality of life that TVET systems can facilitate to improve, as long as they are able to keep pace with the aspirations of individuals and societies under the new conditions introduced by knowledge economies.

Along these lines, UNESCO's report⁷ identifies three main goals of TVET: contributing to the achievement of social, political, economic and cultural goals, in addition to developing the potential of individuals from various backgrounds and

ages to actively participate in determining these goals; helping assimilate the scientific and technological aspects of contemporary civilisation so that people are aware of their environment and influence it with the ability to take critical positions in respect of the social, political and environmental implications of scientific and technological advancement; and strengthening people's ability to contribute to environmentally sound and sustainable development through their vocational work, and through other areas of their lives.

These aspects constitute critical elements of the Arab Knowledge Index (AKI) as presented in this publication.

The TVET Situation in the Arab Region

References on the Organisation of the TVET System

There are several key references available in the Arab region. These are (listed by their publishing dates): 'The Arab Strategy for Labour and Employment Development';⁸ 'The Arab Standard Classification of Occupations';⁹ 'An Arab Decade of Employment/2010-2020';¹⁰ 'The Arab Strategy for Technical and Vocational Education and Training/TVET';¹¹ and 'The Arab Network for Labour Market Information' which was launched in 2014.

Perhaps the most relevant to the TVET sector is 'The Arab Standard Classification of Occupations'¹², which describes the sector's status at two levels:

- First level: structured career paths in the Arab countries. Four vocational paths are available in the Arab countries and are consistent with regulated conditions for joining them. These are: technical education; vocational education; (applied) vocational training; unregulated vocational training and learning.
- Second level: skill levels. TVET paths in the Arab countries lead to five skill levels defined as follows:
 - The specialist level category which includes labour that requires a

high level of knowledge, technical, administrative and supervisory skills in order to attain this level. Those in this category include people with a level of higher education;

- Technical level category (technician) which includes work that requires the application of principles, approaches and procedural methods related to the work required in order to attain this level. Those in this category must have been provided with scientific, technical, performance and supervisory skills, so that they become a link between the specialist category (first level), the vocational labour category (third level) and the skilled labour category (fourth level);
- Vocational worker level category which includes work that requires information and vocational knowledge in an integrated manner, including the scope of the vocation in order to achieve this level, practical skills;
- Skilled labour level category which includes work that requires practical skills, information and vocational knowledge, included in an aspect of the training in order to achieve this level;
- Limited skills labour level category which includes work that requires practical skills, information, and knowledge including a small component of vocational training in order to achieve this level.

These vocational career paths are generally open to all so that most of the Arab experience involves paths that cross over from one vocational level to another. In spite of Arab countries going to great lengths to develop TVET, and in spite of these technical references which are considered strong points, this sector remains in need of systematic indicators that need to be agreed upon and used as references for measuring the social and economic effect of this system on the Arab region, as will be shown in the next section.

A Sample of the Arab Experience in the TVET Field

The Saudi Arabian experience: The Saudi Arabian experience, dating back to 1980, was the result of high rates of economic growth, leading to the increasing need of rehabilitating the workforce to meet the requirements of labour market needs. What characterises training in Saudi Arabia, in particular, is the adoption of a joint training pattern.¹³ In the framework of the 'National Strategy for Transformation into Knowledge Economy (2014-2030)', the country defines training strategies as part of the broader objectives to foster knowledge economy. There is a focus on 'Education and Human Capital', although there are no dedicated indicators for this.

The Jordanian experience: The Jordanian experience dates back to 1976, through the creation of the Vocational Training Institute that has been restructured and its contents continuously expanded. This experience was scaled up in the framework of the 'Jordan National Employment – Technical and Vocational Education and Training (E-TVET) Strategy' for the period of 2014-2020. The strategy expresses its vision, message, strategic objectives and future orientations. The most important aspect of what distinguishes the Jordanian experience is the adoption of an apprenticeship system.¹⁴

The Egyptian experience: The establishment of TVET in Egypt dates back to the first third of the nineteenth century. Interest in this sector grew with time, as today technical education expanded in response to the increased demand for skilled labour. One of the main characteristics of the Egyptian vocational experience is the adoption of a dual TVET system, between training institutions and production spaces.

The Methodology for Constructing the TVET Index

The index-building process is based on two pillars: The first is theoretical and relates to the adjustment of backgrounds geared towards the construction of the index, and the second is a process represented by a descriptive and

analytical study for the indicators, currently circulating in international and Arab arenas.

Backgrounds Geared Towards the Construction of the TVET Index

Unemployment Background

Unemployment rates in the Arab region are high. They have increased significantly and have worsened in recent years. Unemployment problem also relates to the wide gap between TVET system outputs and labour market needs. This is a common phenomenon in Arab countries, manifested, in particular, by the increasing demand for foreign labour in certain countries. At the time the production system was globalised and largely depended on 'knowledge labour' for their competitiveness, Arab labour markets and their TVET systems in the VET field – despite all efforts – remained slow to modernise and pursue the rapid developments of market needs (and development needs in general), falling behind the international standards. This has contributed to increasing unemployment and the expansion of the informal sector, where fragile and non-standard work prevails.

In covering TVET and related training, this chapter refers to two aspects of unemployment:

- Structural unemployment caused by a mismatch between the skills supplied and economic needs;
- Frictional unemployment measured by the period of unemployment experienced after the graduation from education and/or training. It is related to inadequate information systems in the labour market, as well as the failure to circulate up-to-date and correct information from suppliers of labour and those seeking it.

Background of Entrepreneurship

Entrepreneurship rates have remained very low despite the prevalence of the self-employment concept in current discourse. Interestingly, many entrepreneurs themselves indicate that they are turning to entrepreneurial activities out of necessity because they have been unable to

obtain employment; they also mostly choose entrepreneurship while retaining remunerated work¹⁵ due to their lack of confidence in the success of their projects. Among the most salient obstacles to entrepreneurship in the Arab countries (in addition to many other factors concerning the working environment) is the inadequate education provided through the TVET system for building capabilities. It is also due to the insufficient number of micro, small and medium-sized enterprises (SMEs) and lack of soft skills necessary for running and developing these businesses. The prevalent bias in the society against SMEs also plays a role in their underdevelopment. The culture of dependency and tendency to procrastinate as well as reluctance to take risks also negatively affects creation of new SMEs. This is a missed opportunity, as SMEs in other regions and globally continue to play a key role in socio-economic development and the competitiveness in the economy and labour market and they have been subject to rigorous academic research and constitute part of education services.

For example, micro, small and medium enterprises provide between 56.9 per cent of work opportunities in Italy and 74.7 per cent in the Netherlands. These enterprises also secure around 64 per cent of the gross domestic product in European Union countries.¹⁶ This contribution counts for more than 55 per cent of the GDP in high income countries.¹⁷

It is therefore essential to improve the fundamental conditions for stimulating individual entrepreneurial initiatives and this requires demonstrating benefits to individuals, refining skills and developing an entrepreneurship culture across educational and training systems; providing an appropriate business climate; and providing an institutional environment to assist entrepreneurship.

Background on Indicators

This relates to indicators that were listed and approved by the Shanghai Consensus, which was attended by many international organisations and bodies. Seven fields were approved by consensus for training system indicators:¹⁸

- Enhancing relevance of TVET;
- Expanding access and improving quality and equity;
- Adapting qualifications and developing pathways;
- Improving the evidence base;
- Strengthening governance and expanding partnerships;
- Increasing investment in TVET and diversifying financing;
- Advocating for TVET.

These backgrounds suggest that TVET systems have to be considered in an integrated and comprehensive way in their relation to unemployment and entrepreneurship for fostering economic development in changing conditions and contributing to development. Measuring this part and monitoring progress through indicators as proposed in the AKI could help improve performance provided all stakeholders are involved in the related actions.

A Descriptive Analytical Study of the Indicators Currently Used Internationally and in the Arab Region

Building of this index started with an exploratory phase that was based on research and review of regional and international databases and reports about the TVET field to study the systematic approaches adopted in monitoring its development and assessing its performance. This phase allowed the authors to become acquainted with the available indicators, showcasing their strengths and weaknesses and selecting what the composition of the sub-index for TVET under construction should be. It must be noted, however, that the relevant data and statistics is quite limited.

International Experiences

The EU experience:¹⁹ Since the 2002 Copenhagen Declaration on enhanced European cooperation in VET, the European countries have been paying special attention to TVET. They began using it in 2011 within the context of a common strategy for the contribution made by TVET to the economic and social objectives for Europe

2020, as a solution to the economic crisis and to promote social cohesion. To monitor the development of the TVET sector, the European Centre used a tool in the form of a log to manage the sector. The selected indicators relate to three axes:

- Flexibility of TVET systems, their attractiveness and those who join them;
- The efforts of governments and operators in the development of TVET, and the harmonisation of this sector with labour market needs;
- Problematic situations in which TVET can contribute to improving, such as the general level of education, school dropouts and similar issues.

The Australian experience:²⁰ Under the management of a registered training organisation, TVET in Australia ensures a variety of service-provider training groups in the public and private sectors, including technical education institutes, secondary schools, universities and colleges, industrial organisations and educational institutions for adult immigrants. The performance of education and training generally constitutes the focus of attention in the Australian system and is the subject of regular monitoring by adopting a list of indicators to measure three basic criteria – equity, effectiveness and efficiency. These indicators provide a wide range of data concerning students, participation, achievement, results and employer satisfaction; likewise, the effectiveness of the education and training system, expenditure compared to output, and the social and economic contexts. The National Agreement for Skills and Workforce Development regulated additional indicators within this scope with the aim of reducing the number of Australians aged 15-64 years old who do not have higher education qualifications, and doubling the number of qualification-holders above that level. These indicators include the proportion of workers with higher qualifications, the percentage of operators satisfied with how responsive training is to their needs, and the proportion of graduates from a TVET system, including those who find themselves in a better occupational position after training.

Regional Experiences

The Arab Labour Organisation: According to the Arab strategy for TVET, issued by the Arab Labour Organisation in 2010, one of the weaknesses in the Technical Vocational Education and Training system, is “the weakness of the mechanisms for monitoring, evaluating, and accrediting institutions, programmes and qualifications that reflect negatively on the quality of outputs and results”, since there is an almost complete lack of indicators to measure performance. That is because these indicators do not exceed the quantitative aspects, such as capacity, records and the number of graduates. As for the qualitative indicators, the vocabulary of social and economic returns from training is completely absent. Faced with this shortage, several groups and organisations, both internal and external, followed the recommendations on creating indicators that are compatible with the sector’s status and the needs of the Arab market; for example, the call contained in the concluding report of a national workshop to “adopt and develop labour market indicators and TVET indicators, and to concentrate the sources of the necessary data obtained in its own account”.²¹ However, the absence of initiatives on a regional level does not negate the existence of Arab initiatives on the national level, including, but not limited to:

The Experience of the Gulf Cooperation Council: Being aware of the importance of the technical education sector, and its role in meeting the needs of the Gulf market and requirements of development, a labour group was formed of experts from the Gulf Cooperation Council (GCC). Based on their observation and diagnosis of the situation of this sector in the Gulf countries and the future challenges they face, the GCC introduced a technical and education strategy²² aimed at “actively contributing towards restoring the balance of the social and economic development process in general, and restoring balance to the labour market in the GCC in particular”. This strategy confirmed in many locations “the importance of developing continuous evaluation systems,” the “development of information and communication networks, databases for

technical education” and “building a system to support decision-making, using modern techniques to support decision-making on all levels and areas”. In this framework, a number of indicators were suggested for monitoring the performance of the technical education system, related to the preparation of the required staff and skills, employment, equal opportunities, investment and the effectiveness of technical education institutions. These indicators include, for example:

- Harmonisation of technical education skills levels, the levels required by the industry in the short term, and likewise, the global standard for long-term skills levels;
- Employer satisfaction as to the suitability of graduate skills acquired for labour market requirements;
- Improved career opportunities for graduates of technical education, and its viability for technical employment;
- The existence of a uniform system for recognising the qualifications of graduates in technical education institutions;
- Success of learning programmes providing graduates with general skills, shared among a wide range of industrial sectors, in addition to specialised skills;
- The removal of barriers preventing enrolment in technical education, for those who wish to enrol in its institutions, and the use of modern technical means in delivering technical education to those who desire it.;
- The interest of private sector institutions in investing in the field of technical education;
- Exploiting the capacity of technical education institutions to their maximum potential;
- The efficacy of the educational process and its effectiveness;
- Efficient and effective management of technical education institutions.

By monitoring the TVET sector indicators in Arab and international databases, it becomes clear that such indicators often concentrate too heavily on pre-university

or university education indicators. This is the case with the UNESCO data, in which attention is focused, in particular, on the dimensions related to enrolment and expenditure. On the other hand, a large gap is noticeable between the sector’s situation in developed countries and its situation in the Arab region. What has emerged in recent years from initiatives (orientations, policies, strategies and references) in a number of Arab countries, such as Jordan, the Gulf countries and Egypt, however, are signs of positive change, but they require investment in order to enhance the status of TVET education and training, thereby becoming a key contributor to the effort to develop and access the knowledge economy.

These initiatives and strategies, although important, still falter in their implementation, just as many planned indicators are unable to find a way towards actual application. This increases the importance of finding functioning and applicable indicators to measure the effectiveness of the TVET system, in light of technical developments in connection with labour market needs and its new orientations towards the abstract nature of production paths on the one hand, and the cognitive nature of career paths on the other. This was confirmed by the European Training Foundation report, which considered the lack of assessment and follow-up systems a fundamental constraint, preventing active labour market programmes from being effective.²³

List of Proposed Indicators in the TVET Field in the Arab Countries

The Proposed Composition of the Index

Against the background provided above, the most realistic and relevant indicators for a index on TVET were chosen. These indicators are considered to be able to capture the particularities of the current reality and its challenges and urgencies in Arab countries. Some indicators were chosen even if the data currently are not available as the work will continue to complete the missing data on such indicators.

Figure 1:
Composition of the TVET Index

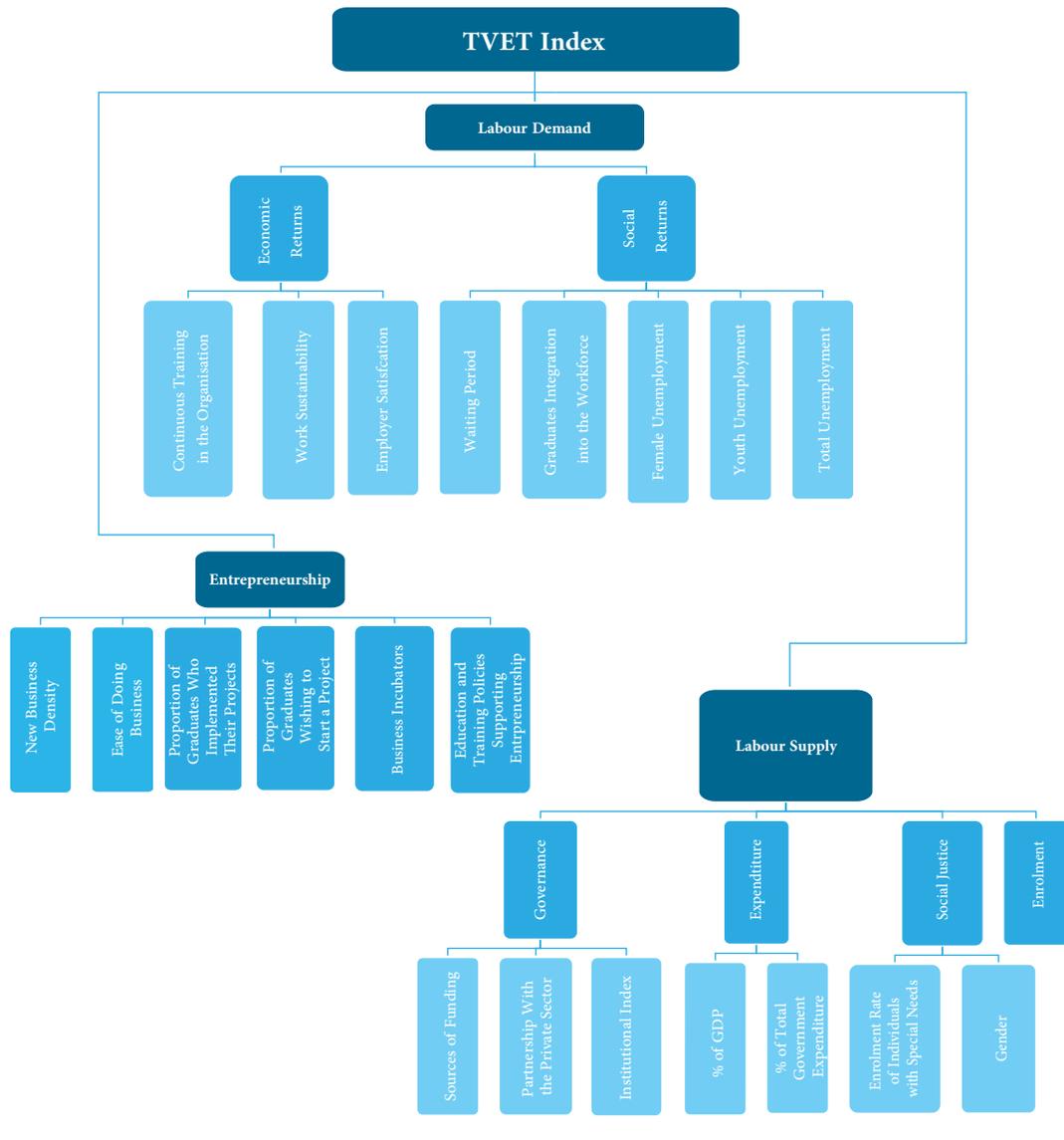
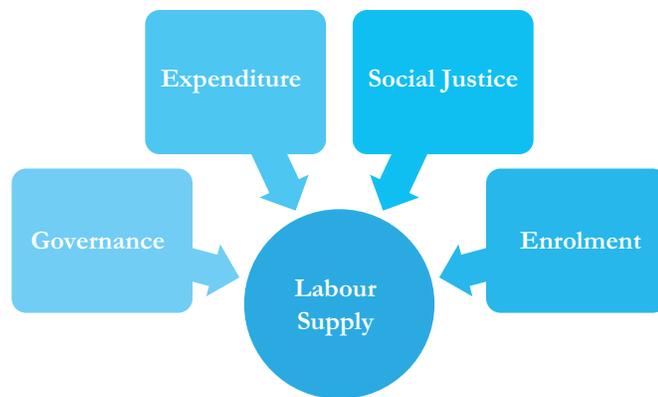


Figure 2:
Indicators of Labour Supply



The proposed indicators have been classified into three categories: Labour Supply, Labour Demand and Entrepreneurship as shown in Figure 1.

Discussing the Index Components and Their Selection

'Labour Supply' means a system that prepares human resources through education, training, and employment for first entry into the labour market and the acquisition of vocational skills of commercial value in the labour market, enabling them to transition from the world of learning to the world of work. This aspect of the frontal dimension represents adapting human resources to social and economic development needs, just as integration represents success in the knowledge economy, securing the best terms for action and taking advantage of the available opportunities it offers. Progressively expanding globalisation has placed economies before fierce competition, which can only be confronted, through strengthening sources of new growth including, in particular, contributing knowledge in all its classes and degrees, into production and service pathways. This role can be considered one of the fundamental responsibilities of the state, in coordination, cooperation and partnership with various economic and social actors, and with private-sector institutions that benefit from these outputs in the first place, by supporting their knowledge assets. It should be emphasised here that the importance of knowledge in the new economy is no longer at the level

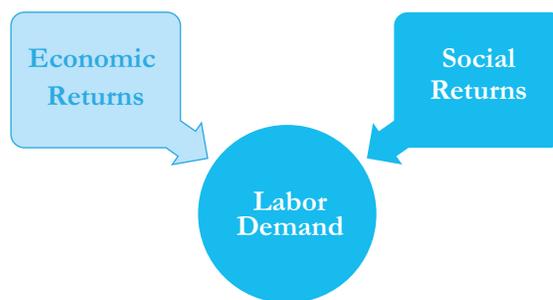
of fragmentation from the economic and social fabric, but has become a productive pattern in itself.²⁴

It is expected that this set of indicators will enable the measurement of 'TVET adequacy' (the internal effect on the system). To this end, four sub-indicators have been chosen as follows:

- Enrolment indicator in TVET.
- Social Justice indicator (equality in providing TVET opportunities, containing:
 - Enrolment on the level of social indicator;
 - Enrolment on the level of individuals with special needs indicator.
- Expenditure on TVET indicator, containing:
 - Expenditure as a percentage of the total government expenditure;
 - Expenditure as a percentage of GDP.
- Governance of TVET, which contains the following inputs:
 - Institutional index for the management of TVET systems (centralised and decentralised);
 - Partnership with the private sector;
 - Sources of funding (public/private).

Public funding represents one of the most important sources of funding for TVET in the Arab countries through state monitoring of the public budget. Some countries – Algeria, Egypt, Jordan, Morocco and Tunisia – approved the performance of vocational training, and employed it in production institutions in both the public and private sectors. This is

Figure 3:
Labour Demand Indicators



the determination of the ratio of wages-to-fund training, whether continuously or mainly.

‘The Demand for Labour’ means economic and service institutions that employ applicants in the labour market, including graduates of the TVET system, and those who wish to join the labour market; and it also represents the rear dimension for investing in and assessing training outputs. Needless to say, preparing the optimal human resources, in its frontal dimension, remains limited in its social and economic effect unless accompanied by its rear dimension, namely, employing a strategy for skills, and providing skills through continuous training to increase its efficacy in economic institutions, because the sustainability of labour and institutional competition (at least in part) are both linked to the sustainability of the quality of human resources. The knowledge economy has changed the old labour world, just as it has changed the world of customary production. These changes from economic institutions require increased investment in its human balance in order to harmonise with modern production conditions, including those related to skills and employment strategies. The competitive ability of an institution is no longer governed by the widest sphere, including labour costs, to the extent that it has become removed from the knowledge economy through skills, initiative, innovation, productivity and the stimulation of social intelligence, which is what is meant by being outside competitive pricing.

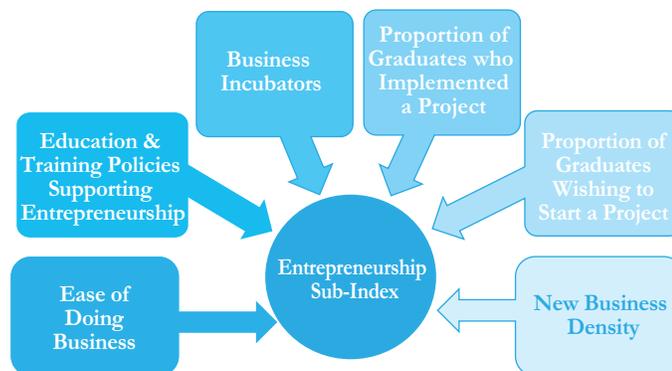
This second set targets the measurement of TVET effectiveness (i.e. the system’s external impact), and may require setting up two sub-indices namely:

- The TVET Social Returns Indicator, containing the following inputs:
 - Public unemployment rate;
 - Youth unemployment rate;
 - Female unemployment rate;
 - Rate of graduate integration into the workforce;
 - The period graduates have to wait for after graduation until they obtain employment.
- The Economic Returns Indicator, containing the following inputs:
 - Signs of employer satisfaction with the performance of those employed and who have graduated from the training system;
 - Proportion of work sustainability;
 - Undertaking continuous training in the institutions.

Entrepreneurship in this context is the establishment of micro, small or medium projects, also called ‘external entrepreneurship’. Noting that entrepreneurship as a concept has been expanded in recent years to include ‘internal entrepreneurship’.

The culture of entrepreneurship in society and the economy is declining. Amongst its most important manifestations is the low number

Figure 4:
Indicators on Entrepreneurship Among TVET Graduates



of Arab youth choosing independent work. In fact, the lack of entrepreneurial education can explain the low entrepreneurship rates in Arab societies. Entrepreneurial mentality is measured in terms of the density of economic institutions relative to the active population. The density of institutions in the Arab region remains greatly limited compared to other regions.

The low entrepreneurship rates relate to numerous economic institutional and legal reasons, as well as a deficiency in training systems in making preparations for self-employment and qualifying in it. Due to this situation, it has been opted to set up entrepreneurship indicators for TVET graduates, including indicators of sub-components, namely:

- Education and training policies that support entrepreneurs;
- The availability of business incubators in TVET institutes;
- Proportion of graduates who wish to start projects, of the total graduates;
- Proportion of graduates who implemented their projects, out of the total number of graduates;
- Ease of doing business;
- Density of new businesses.

Examining the indicators of these three sets (Labour Supply, Labour Demand, Entrepreneurship), would clearly show that the difficulties of integrating job-seekers, and the declining levels of economic entrepreneurship amongst young people, are very closely linked to indicators of empowerment and the ability of the TVET sector to provide it with entrepreneurs. From

this perspective, empowerment capabilities fall within the AKI.

Weighting was assigned evenly between the first set (Labour Supply: 40 per cent) and the second set (Labour Demand: 40 per cent) attributing to them the same degree of importance. Thus, the qualification of human resources in terms of its vocation, career path and knowledge do not significantly derive their legitimacy except through actively contributing to the economic cycle through direct employment in the labour market or through independent work. Employment thus governs the various production pathways and services with the quality of education and training system outputs, generally, while the weight assigned to the third set (Entrepreneurship: 20 per cent) depends on pragmatic considerations. It is true that entrepreneurship is important as the primary entry point for addressing the unemployment problem, expanding the economic fabric, developing and reviewing knowledge content, and thus contributing to the upgrading of the Knowledge Index in the Arab region's economies. Without entrepreneurship, however, transformation presents several obstacles including, in particular, the cultural dimensions among Arab youth, represented by reluctance to accept self-employment. From this standpoint, the effect of entrepreneurship requires more time to assess its actual impact. This is what has led to giving priority to labour in terms of supply and demand, without losing sight of entrepreneurship as a third dimension reflecting the developments in labour markets. Table 1 shows the distribution of the weighting as it affects the various sub-components of the main circles.

Table 1:

TVET Indicators

Labour Supply Sub-Index = 40%			
1- Enrolment = 25%	2 -Social Justice = 25%	3- Expenditure on TVET = 25%	4- Governance = 25%
1- The Enrolment indicator does not include sub-indicators.			
2- The Social Justice indicator consists of two sub-indicators, with the following respective weights:			
1.2 Gender parity in enrolment = 50% (of the Social Justice indicator).			
2.2 Rate of Enrolled Students with Special Needs = 50% (of the Social Justice indicator)			
3- The Expenditure indicator is a composite of two sub-indicators with the following respective weights:			
3.1 Expenditure on education as a percentage of government expenditure = 50% (of the Expenditure Indicator).			
3.2 Expenditure on education as a percentage of GDP = 50% (of the Expenditure indicator).			
4- The Governance indicator is a composite of three sub-indicators with the following respective weights:			
4.1 Institutional indicator for Managing the TVET System = 30% (of the Governance indicator)			
4.2 Level of Partnerships with the Private Sector = 30% (of the Governance indicator)			
4.3 Sources of Funding (Public/Private) = 40% (of the Governance indicator)			
Labour Demand Sub-Index = 40%			
Suggested Weights:			
5- Social Returns = 50%		6- Economic Returns = 50%	
5- Social Returns indicator is a composite of five sub-indicators with the following respective weights:			
5.1 Unemployment Rate = 8% (of the Social Returns Indicator)			
5.2 Youth Unemployment Rate = 17% (of the Social Returns Indicator)			
5.3 Female Unemployment Rate = 25% (of the Social Returns Indicator)			
5.4 Integration Rate of Graduates in the Workforce= 25% (of the Social Returns Indicator)			
5.5 Period Graduates Spend Waiting for a Job Opportunity After Graduation = 25% (of the Social Returns Indicator).			
6- Economic returns indicator is a composite of three sub-indicators with the following respective weights:			
6.1 Employer Satisfaction = 60% (of the Economic Returns Indicator)			
6.2 Proportion of Work Sustainability = 20% (of the Economic Returns Indicator)			
6.3 Opportunities for Continuous Training in Institutions = 20% (of the Economic Returns Indicator)			
Entrepreneurship Sub-Index = 20%			
None of the following indicators includes sub-indicators.			
7- Education & Training Policies Supporting Entrepreneurs = 16.66%	8- Availability of Business Incubators = 16.66%	9- Proportion of Graduates Who Wish to Start a Project = 16.66%	10- Proportion of Graduates Who Implemented a Project = 16.66%
11- Ease of Doing Business = 16.66%	12- New Business Density = 16.66%		

Outcomes of the Individual and Group Consultations

Individual and group consultations were held with a number of experts and specialists in order to secure consensus around defining the situation of TVET, identifying its challenges and shortcomings as well as adopting the relevant performance indicator weights.

Consultations highlighted the following:

- The importance of putting in place measurable indicators for the TVET system, and more general indicators on Arab knowledge;
- The lack of regional and international data on TVET in the Arab region;
- The difficulty of making comparisons between Arab countries due to the lack of standardised data whenever available.

Recommendations can be summarised as follows:

- Establishing a theoretical background for the Index;
- Limiting indicators to those which can be measured, i.e. those for which data are available;
- Taking the particularities of the Arab region into consideration when producing indicators;
- Supporting entrepreneurship on the grounds that it is not limited to “external” entrepreneurship only, in the sense of setting up new projects, but has expanded to include “internal” entrepreneurship, i.e. also as part of a paid job;
- Developing indicators for groups with special needs;
- Focusing on the importance of assigning weights (There was a virtual consensus around the suggested weights).

Conclusion

There is growing recognition in Arab countries for the importance of TVET in the provision of high-skilled labour equipped with knowledge and the ability to produce and contribute effectively to achieving comprehensive and sustainable goals, leading them to pursue related reforms. Such reforms would

improve the quality of TVET’s outputs and their link to the labour market requirements on two levels; the quantitative level (size of demand) and the qualitative level (types of skills required). As such, TVET has been considered as one of the main pillars of the Arab Knowledge Index, despite awareness of a real problem in data availability for the majority of Arab countries. There is an ongoing attempt by the European Training Foundation, which has been offering assistance to numerous Arab countries, to focus on TVET indicators and to establish centres to trace labour market. However, outcomes of these attempts are yet to be seen.

A review of literature, previous experiences, and previously established indicators based on regional and international databases suggests that there is still a need to build a composite TVET Index, as supported by the view to establish stronger links with the unemployment and entrepreneurship opportunities and challenges. The Shanghai Consensus on Technical Vocational Education and Training provided a string starting point. Accordingly, the indicators related to TVET under the AKI were grouped under three main pillars: Labour Supply, Labour Demand and Entrepreneurship, each one branching out into a number of selected variables from the World Bank, the ILO, the Arab Observatory for Education and UNESCO.

The statistical analysis of available data has shown a consistency between selected variables and interpretative values. However, the findings require further corroboration once the structure of the index is complete in all its aspects and all the data gaps have been filled in. The production of the Index at this first stage has been restricted to indicators for which data were available, while following phases in the future will focus on its further development, with particular attention to the severe shortage in data on the situation of TVET in the Arab region.

This index composition, despite the limitations imposed by a pressing and significant lack of data, could be an important step on the road to building a more inclusive composite index, capable of measuring the complex conditions

of TVET in the Arab region, and that system's relation to the latest developments in the labour markets and to the requirements of sustainable human development. As for possible further improvements in the future, these will initially be pursued at two levels:

- A review of the composition with the goal of enriching it and shedding light on the sector's attractiveness (including through a study on approaches, completion ratios, drop-out rates, etc.), the efficiency of TVET institutions, the extent to which programmes and TVET career paths keep pace with the revolution in Information and Communications Technology (ICT), management and governance approaches to the sector and the harmony between labour market required skills and TVET outputs;
- An investment in new quantitative and qualitative data, including the results of international studies and the latest consultation on efficiency indicators²⁵ recently developed by the OECD in collaboration with the World Bank, the European Training Foundation, the ILO and UNESCO. These indicators partly deal with TVET.

Endnotes

1. UNDP & Mohammed bin Rashid Al Maktoum Foundation 2014 (reference in Arabic).
2. UNESCO & ILO 2003 (reference in Arabic).
3. Arab Labour Organisation 2009a (reference in Arabic).
4. UNESCO-UNEVOC 2014.
5. ETF 2015b.
6. ETF 2015a.
7. UNESCO-UNEVOC 2006.
8. Arab Labour Organisation 2003 (reference in Arabic).
9. Arab Labour Organisation 2008 (reference in Arabic).
10. Arab Labour Organisation 2009b (reference in Arabic).
11. Suleiman Awad Suleiman 2012 (reference in Arabic).
12. Arab Labour Organisation 2008 (reference in Arabic).
13. Ministry of Economy and Planning- Saudi Arabia 2014 (reference in Arabic).
14. Ghuba Consulting 2013 (reference in Arabic).
15. Remunerated labour is an economic institution in exchange of a salary.
16. CGPME & KPMG 2012 (reference in French).
17. OECD 2004a.
18. UNESCO 2012 (reference in Arabic).
19. CEDEFOP 2013.
20. Steering Committee for the Review of Government Service Provision 2014.
21. Arab Labour Organisation et al. 2012 (reference in Arabic).
22. GCC Action Team Assigned by the Deans and Directors of the GCC states 2003 (reference in Arabic).
23. European Training Foundation 2015 (reference in Arabic).
24. Historically, there are five models of production: the Asian model of production (East), the ancient model of production, the sectoral model of production, the capitalist model of production, and the communist model of production. Considering these models, the knowledge model of production in the new economy can be considered as a new model.
25. OECD et al. 2013.

