The background of the image is white and filled with numerous grey arrows of varying sizes and orientations, all pointing generally upwards and to the right. A prominent blue square is centered in the image, containing the title text. The text is white and arranged in three lines. The overall theme is one of growth, progress, and upward movement.

**Technical Vocational
Education and
Training Index**

Introduction

Technical vocational education and training (TVET) plays an important role today in harmonizing the outputs of the education sector with the emerging needs of the labour market. It prepares and equips individuals with the skills needed to adapt to the changes occurring in modern economies – specifically in the labour market – and represents a gateway both for building knowledge economies and societies, and achieving sustainable human development.

Given that economic prosperity is closely related to knowledge accumulation and to the level of technological advancement in the production process, which are in turn related to the outputs and development of skilled labour, it is vital to create highly skilled human capital by promoting sustainable TVET and the related institutional development. TVET plays an essential role in addressing unemployment and underemployment, especially among youth, as individuals spend more time in the production system, resulting in better adaptation to its activities and needs. TVET therefore constitutes a means for individuals to transition from training and unemployment to production and work.¹

Arab countries today face a major challenge in revising their TVET policies and better aligning them with emerging trends in knowledge, economics, and development. The two main objectives of this review is to identify and analyse imbalances at the structural level (such as the relation between TVET systems and the requirements of the labour market) and the contextual level (such as traditionally negative stereotypes associated with TVET education and associated professions) that limit the efficiency and social importance of TVET. In this context, the private sector plays an important role and should be more involved in formulating public policies, identifying requirements and priorities, and developing training programmes.²

The United Nations Educational, Scientific and Cultural Organization (UNESCO) and the European Training Foundation (ETF) are among several international organizations that

have stressed the importance of TVET in adapting to emerging development challenges and achieving sustainable human development.

Of particular note is the International Centre for Technical and Vocational Education and Training (UNEVOC), UNESCO's specialized centre for TVET. UNEVOC's mission is to assist United Nations member states in developing policies and programmes related to education for the world of work and skills development for employability and citizenship.³ It sets the basis for methodological approaches to the development of this sector, especially via the definition and introduction of key performance indicators (KPIs) and in emphasizing the link between TVET and sustainable human development.⁴ These efforts have helped to shape a global plan for developing and improving TVET that was adopted as part of the Shanghai Consensus in 2012⁵ and was further developed by UNESCO to form a draft strategy for TVET for the period 2016–2021.⁶

In a similar context, the European Training Foundation (ETF) is the European Commission's centre of expertise for human resource development in partner countries outside the European Union (EU). It focuses on TVET and labour market expertise, while stressing the importance of in-depth knowledge of concerned countries. The ETF has launched several initiatives to develop the TVET sector in partner countries⁷ and its work is distinguished by its innovation and high standards of quality, in addition to its perspective that takes into consideration the specificities of each local context and sector.

The World Bank has also led several initiatives to support the development of the TVET sector, such as the Skills Development Support Project in developing countries, and it has produced a number of framework studies on advancing the TVET sector and youth skills.⁸ This work has been instrumental in developing the concept, structures, and inputs of the TVET index.

At the regional level, interest in the TVET sector has risen as a result of increasing levels of youth unemployment and a growing gap between youth qualifications and the needs of the labour market. In its first report in 2008,

the Arab Labor Organization (ALO) concluded that Arab countries are facing the challenge of structural unemployment owing to a rate of demographic growth that exceeds the adaptation capacity of their systems of production.⁹ This was confirmed in the 2015 Arab Economic Report, which added that the 15–29 year-old age group is the most vulnerable in this cycle of misalignment, especially with the increasing rates of educational attainment.¹⁰ Similarly, reports by the International Labour Office (ILO) observed an increase in unemployment rates among youth in Middle Eastern countries from 27.6 percent in 2012 to 28.2 percent in 2014, and from 29.7 to 30.5 percent during the same period for North African countries.¹¹

These observations point out the need for Arab countries to develop a more comprehensive approach to TVET. Although many Arab countries have attempted such reforms, the effectiveness of these actions remain limited in the absence of clear objectives, systematic KPIs and tools for the monitoring and evaluation of the sector. This makes it difficult to assess the current status of the TVET sector, its inputs, processes, institutions, and outputs, and even harder to develop evidence-based policies to take appropriate corrective actions. Thus, this index on TVET is the first regional Arab attempt to establish such a system of KPIs and apply it systematically as part of a wider vision based on the complex relationship between knowledge and development.¹²

Comparative approaches in the study of TVET systems gained increasing relevance when advanced economies began to enhance labour conditions and work settings, as two main conditions for quality improvement processes. This led many countries to revisit their TVET sector policies, enriching their practices, and directing efforts toward making the sector more capable of attracting and retaining talent.

Consequently, national authorities were established to better align the training system with emerging labour market requirements, while creating more job opportunities for young people, and enabling them to efficiently contribute to the production system. This has had a positive effect on the general perception of the role of TVET systems, no longer simply

considered as support to traditional (primary, secondary and tertiary) education systems. In this regard, many developed countries have already formulated revised strategies for defining regulatory frameworks with clear short-, medium- and long-term objectives and indicators to assess levels of progress and success. International organizations examining the TVET sector are simultaneously expanding their datasets in order to consolidate indicators and definitions, and produce analysis identifying marked growth or underdevelopment and their respective causes.

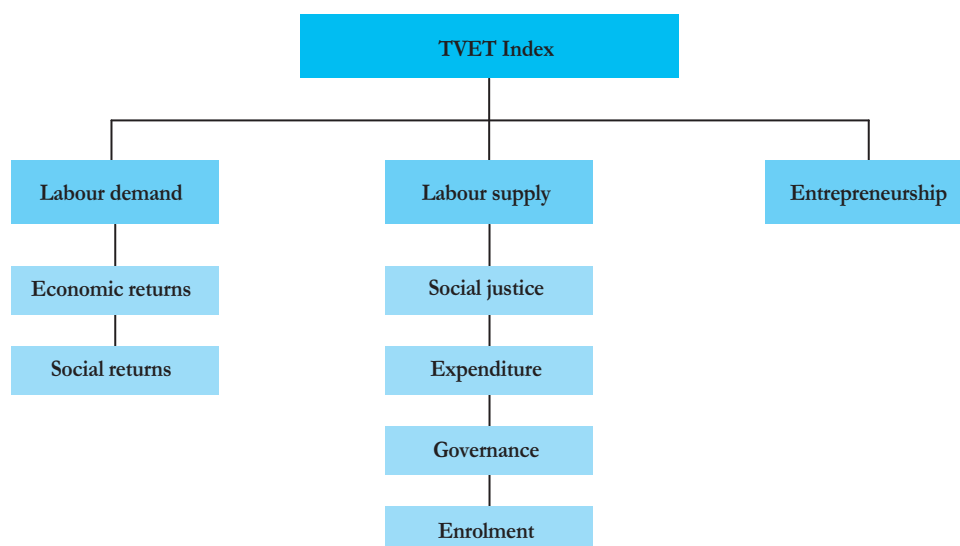
Literature related to TVET remains limited in the Arab region as is emphasized in the Arab strategy for TVET adopted by the Arab Labor Organization in 2010.¹³ Additionally, the generally deficient statistical data is not updated regularly, except in countries working closely with international organizations such as the ILO, UNESCO and the World Bank that require specific information for building their databases set up for studying the sector.

This lack of data also reflects a shortage in the human resources needed to gather the required information, as well as the nature of the governance of this sector. In fact, in the majority of Arab countries, the sector is governed by a subsidiary authority falling under a ministry such as that of education (Egypt), higher education (Sudan, Yemen and the United Arab Emirates) or labour (Algeria, Morocco and Tunisia).

Formulation process and initial structure of the index

This section briefly outlines the methodology used in the construction of the AKI TVET Index of 2015. The methodology involved several stages, including:

- 1) Systematic review of literature available from local, regional and international sources on TVET and various related indicators, particularly in the contexts of knowledge and sustainable human development. The focus was centred on identifying theoretical and statistical concepts and standards that could be applied in the Arab context.¹⁴

Figure 7:
The structure of the 2015 TVET Index


- 2) The establishment of a preliminary theoretical and structural model, with an ideal set of desired KPIs that could be used to regularly monitor and evaluate the TVET sector in Arab countries and inform future policies and reform plans. The suggested model was evaluated against existing models at the international level, especially in terms of TVET indicators from UNESCO–UNEVOC, without compromising the specificities of the local context for Arab countries.
- 3) The suggested model was then refined and evaluated by a select group of experts and stakeholders from the Arab region and beyond using collective workshops, as well as through personal direct and virtual [electronic] consultations.

At the application stage, the lack of reliable and updated data on the Arab region constituted a major challenge. The variables used to populate the indicators were thus modified in light of the statistics available for the Arab region, while certain constituents were temporarily suspended and kept at the theoretical level for potential use at a later stage.

This process resulted in the development of a 2015 TVET Index consisting of three main pillars and six sub-pillars (Figure 7).

Revisions

Following the release of the 2015 Index, a revision process began to refine the quality of the index based on another round of literature review. This process identified three main trends in the TVET literature for the Arab region:

- 1) Generic approaches that cover the Arab region as a whole, and thus present a general overview and some of the regional data (regional average).
- 2) Constructive approaches that introduce a brief overview at the regional level but then move to present specific details at the country-level – for countries where data is available.
- 3) Comparative approaches among specific country-level practices and analysis. This approach is mainly visible in the literature produced by UNEVOC and the Torino Process.¹⁵

The revision process focused on the second and third approaches – i.e. the constructive and comparative approaches – to take into consideration the local contexts to a better extent (enabling environment, direct and indirect economic factors in addition to the TVET

systems and outputs, with emphasis on factors relating to the knowledge economy).

Because the TVET Index revision involved significant changes to the 2015 version, the AKI team sought a further round of expert consultations for the revised structure, which included consultation with the UNESCO–UNEVOC headquarters in Bonn. This process:

- Confirmed that the theoretical and methodological conceptualizations of the AKI TVET Index are realistic and relevant to the current development needs and challenges facing the Arab region.
- Re-emphasized the need for the Arab countries to be more involved in international efforts to monitor, evaluate, and develop the TVET sector, including at the level of data collection.
- Recommended the use of quantitative indicators, whenever possible, because these indicators better facilitate analysis and constructive comparison across time and countries.
- Recommended that the index results be read and analysed in relation to UNESCO's *Education 2030 Framework for Action* (based on the Incheon Declaration and Framework for Action).¹⁶
- Recommended that greater emphasis be given to the indicators relating to the general assessment of the TVET sector, use of new technologies, entrepreneurship, lifelong learning, green learning, self-employment, and other relevant variables in the context of TVET and sustainable human development.

In addition to these consultations, statistical application confirmed the capacity of the index to reflect some of the main features of the TVET sector in the Arab region.¹⁷ The main challenge, however, remains the need to collect reliable and credible data, and enhance mechanisms of cooperation through the involvement of relevant stakeholders.

Revisions applied to the main structure

The main structure of the index underwent considerable changes, reflecting more data.

The first pillar of the TVET Index is now the *education and training* pillar. In addition to focusing on the systems and structures of training, this pillar considers the dynamism of human capital in order to assess the reception structures and qualifications of TVET institutions as well as the relation between TVET and the labour market.

Through its two sub-pillars (*enrolment and relation with the labour market*), this pillar focuses on the capacity of TVET institutions, their ability to attract and retain talent, and the training of teaching and managerial/administrative staff. It also takes into consideration the geographical distribution of TVET students, TVET education tracks, and TVET education patterns.

The revisions made to the 2015 Index aimed to enrich this pillar, particularly in terms of placing more emphasis on both human capital and interaction with the labour market. UNESCO–UNEVOC, among other international organizations, has always noted the critical role of the human factor in improving the quality of this sector and achieving better alignment with the labour market.¹⁸

The *relation with the labour market* sub-pillar was introduced in light of the review of international literature; it links the inputs of the TVET sector with its outputs, and compares them in terms of alignment with the requirements of the labour market, reflecting a collaborative perspective.

Another conceptual indicator under this pillar is the ability of the TVET sector to compete with other sectors of formal education. The pillar attempts to reflect the capacity of this sector to attract youth, at least at the quantitative levels of enrolment, completion, and graduate employment. This capacity goes hand in hand with enhancing the visibility of the TVET sector in the policymaking process.

Reference here should be made to the balanced relationship between the sector's capacity to attract youth and talent, its institutional capacity, and its budget. The latter is often a challenge, especially in light of the rising number of

students and administrative costs, which leave little or no budget for quality improvement, the revision of the education process and curricula, and capacity building.

The second structural change in the index is the introduction of the second pillar *organizational framework* that seeks to assess the organizational framework of TVET sector institutions and the economy in relation to TVET. It consists of two sub-pillars: *economic policies* and *labour market features*.

The regulatory framework of the labour market contributes to the establishment of a production environment that can adapt to the increasing number of graduates and provide more opportunities, especially to educated youth. In this context, UNESCO–UNEVOC has continuously highlighted the importance of devising and using scientific indicators to assess the quality of the regulatory environment for the TVET sector, including pedagogical assessment of TVET institutions, the effectiveness and efficiency of available processes and frameworks, sector-specific strategies, and regulatory authority.¹⁹

Also under the *organizational framework* pillar, a new sub-pillar was introduced on *quality regulations*. However, this sub-pillar has been temporarily suspended given a general lack of data.

The third change at the level of the main structure consisted of a third pillar focusing on the contextual factors that affect the technical vocational education and training sector. It includes three sub-pillars – *education*, *demography*, and *state of development* – and a wide array of variables that help create a clear picture of the general development context.

The weights of the main pillars were also revised after all structural changes were applied; a weight of 0.2 was given to the *education and training* pillar, 0.5 was attributed to the *organizational framework* pillar, and 0.3 to the *development context* pillar. These weights were then equally divided among their respective sub-pillars and subsequent constituents as shown in details in Table A2 in the Annex.

Revisions applied to the variables

New variables were added to the first pillar *education and training*, which include the following: *inadequately educated workforce*, *extent of training for TVET students*, *availability of specialized training services*, *percent of firms offering formal training*, *TVET involvement in entrepreneurship*, *participation of TVET authorities in the organising body for the TVET examinations*, and finally, *participation of TVET authorities in the committees responsible for setting the TVET curricula*.

The *organizational framework* pillar also consists of new variables that present an overview of the social element of the work environment, and of the extent to which Arab countries adhere to the requirements of international labour rights. These variables include: *availability of a government authority to regulate labour to supply and demand*, *percentage of labor force not contributing to social security*, *disputes rate per 1000 workers*, *mean weekly hours actually worked per employed person*, and *female participation in the labor force as a ratio to men*.

The pillar also includes other newly added variables: *total investment as percentage of GDP*, *tax incentives for young businesses*, *number of procedures for starting a business*, *ease of doing business*, *high-skilled employment share*, *poor work ethic in national labor force*, *labor force with less than primary education as a percentage of the total labor force*, *total tax rate as a percentage of commercial profits*, *ratio of minimum wage as a share of value added per worker*, *pay and productivity*, *labor market efficiency*, *restrictive labor regulations*, and *labor regulations*.

Finally, the new variables constituting the *development context* include the following: *government expenditure per primary and secondary student as a percentage of GDP per capita*, *higher education and training*, *adult literacy rate*, *gender parity index for gross enrolment ratio in primary education*, *rate of out-of-school children of primary school age*, *net enrolment rate in secondary education*, *net enrolment rate in primary education*, *percentage of employment in agriculture*, *percentage of population growth rate*, *AKI 2015 Economy Index*, *Human Development Index* and finally *GDP per capita*.

The variables that were added this year under the new pillars of the TVET Index are shown in Table 2.

Table 2:**Changes applied to variables in the 2015 TVET Index*†**

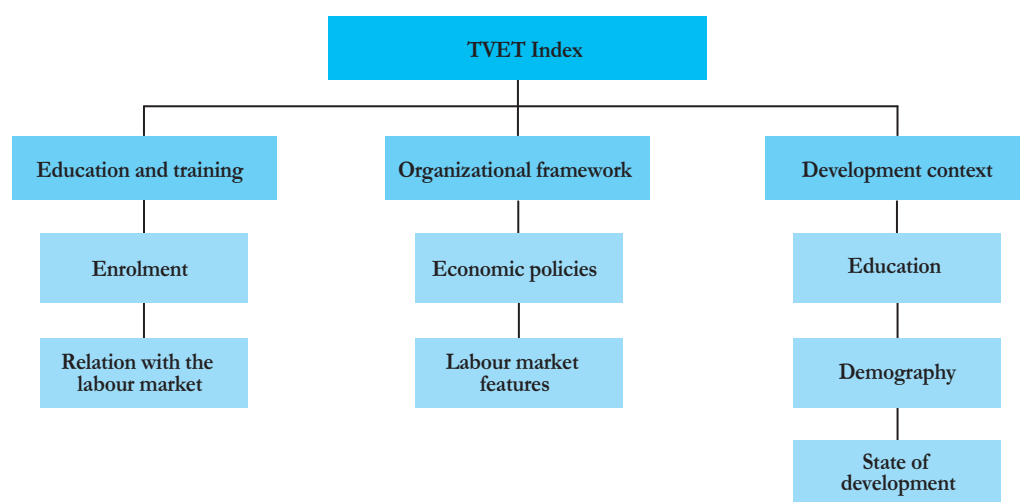
Variable	Modification
Education and training pillar	
Percentage of students in secondary education enrolled in vocational programmes, both sexes (%)	Added
Percentage of students in secondary vocational education who are female (%)	Added
Inadequately educated workforce	Added
Extent of training for TVET students	Added
Availability of specialized training services	Added
Percent of firms offering formal training	Added
TVET involvement in entrepreneurship	Added
Participation of TVET authorities in the organising body for the TVET examinations	Added
Participation of TVET authorities in the committees responsible for setting the TVET curricula	Added
Organizational framework pillar	
Total investment (% of GDP)	Added
Tax incentives for young businesses	Added
Starting a business, procedures (number)	Added
Ease of doing business	Added
High-skilled employment share (25-54 age group)	Added
Poor work ethic in national labor force	Added
Labor force with less than primary education (% of total labor force)	Added
Total tax rate, % of commercial profits	Added
Ratio of minimum wage as a share of value added per worker	Added
Disputes rate per 1000 workers	Added
Mean weekly hours actually worked per employed person	Added
Pay and productivity	Added
Female participation in the labor force, ratio to men (15+)	Added
Labor force not contributing to social security (percent)	Added
Labor market efficiency	Added
Restrictive labor regulations	Added
Labor regulations	Added
Availability of a government authority to regulate labour supply and demand	Added
Development context pillar	
Government expenditure per primary and secondary student as % of GDP per capita (%)	Added
Government expenditure on education as % of GDP (%)	Added
Higher education and training	Added
Adult literacy rate, population 15+ years, both sexes (%)	Added
Gross enrolment ratio, primary, gender parity index (GPI)	Added
Rate of out-of-school children of primary school age, both sexes (%)	Added
Net enrolment rate, secondary, both sexes (%)	Added
Net enrolment rate, primary, both sexes (%)	Added
Employment in agriculture, both sexes (%)	Added
Population growth rate (%) (Average annual)	Added
AKI 2015 Economy Index	Added
Youth unemployment rate (%), 15-24 age group	Added
Unemployment rate (%), (15+)	Added
Human Development Index (HDI)	Added
GDP per capita (current US\$)	Added

* For more information on the variables populating the previous structure, refer to Table A2 in the Annex of AKI 2015.

† The names of the pillars have been updated to include changes resulting from the 2016 revisions.

Figure 8:

The revised structure of the TVET Index



Revised structure (2016 version)

The revision process led to the adoption of a refined structure for the TVET Index 2016 (Figure 8).

Results

The TVET Index results show wide disparities among countries, with a gap of 62.24 points between the highest score (71.81 for the United Arab Emirates) and the lowest score (9.57 for Somalia). Twelve countries scored 50 and above. These include all of the GCC states, as well as Algeria, Egypt, Jordan, Lebanon, Morocco, and Tunisia. Four countries (Comoros, Somalia, Sudan and Yemen) scored 33 and below (Figure 9), where the unstable political, economic and security conditions play a major role in determining such low results.

The GCC countries topped the *development context* pillar, while Egypt, Lebanon, Mauritania, Morocco, and Tunisia topped the *education and training* pillar (Figure 10).

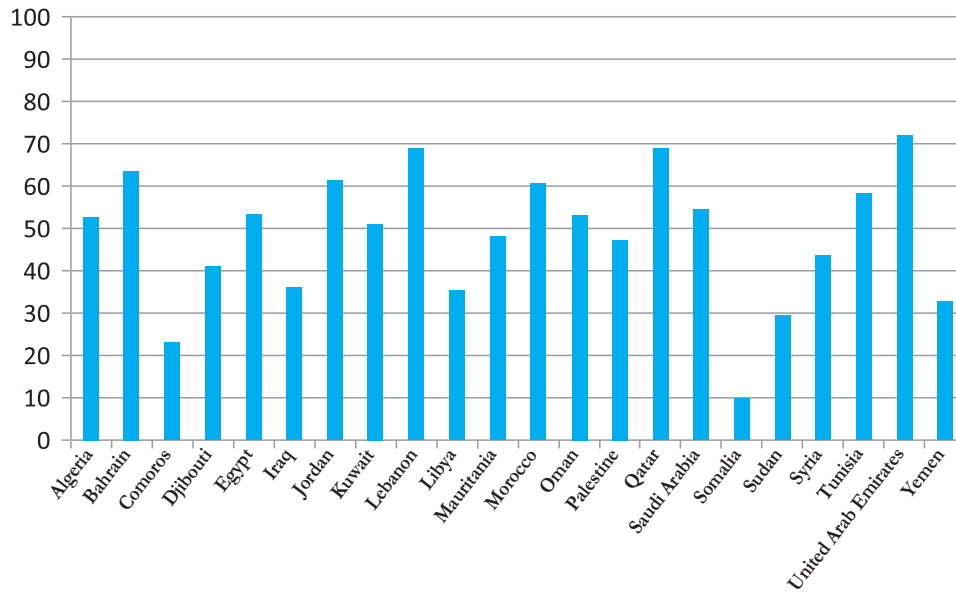
The *organizational framework* pillar shows correlation with the *education and training* pillar (a correlation coefficient of 0.513) as well as the *development context* pillar (a correlation coefficient of 0.599). No statistically significant correlation was noted between the *education and training* pillar and the *development context* pillar.

For the *organizational framework* pillar, the scores varied widely. This can be explained by the disparity in efforts made by Arab countries to modernize their legal and administrative structures, including those related to employment and labour markets. The United Arab Emirates ranked first, which is a natural result of its efforts over the years to reform its economic structures, link development with the qualification of human capital, and ensure that a knowledge-based economy becomes a key pillar of its competitiveness. Qatar came second with a score of 69.87, followed by Morocco at 65.32. These three countries were able to dynamically modernize their administrative structures and develop their investment sectors.

The *education and training* pillar covers variables that measure aspects of the TVET sector such as *enrolment* and *relation with the labour market* (i.e. inputs and outputs). Scores on the enrolment variables were above 90 in Egypt and Lebanon, but below five in Oman, Qatar, and Somalia. These scores certainly reflect development priorities that are linked to the economic and demographic realities of these countries. Low TVET enrolment levels in some countries imply these countries will not face a crisis of unemployment in this sector specifically – or at least that such crisis will not be as severe as in Egypt, Morocco, or Algeria, where the numbers of TVET graduates have reached record levels, forcing TVET authorities to deal with the problem of vocational training quantitatively

Figure 9:

Results of Arab countries on the TVET Index

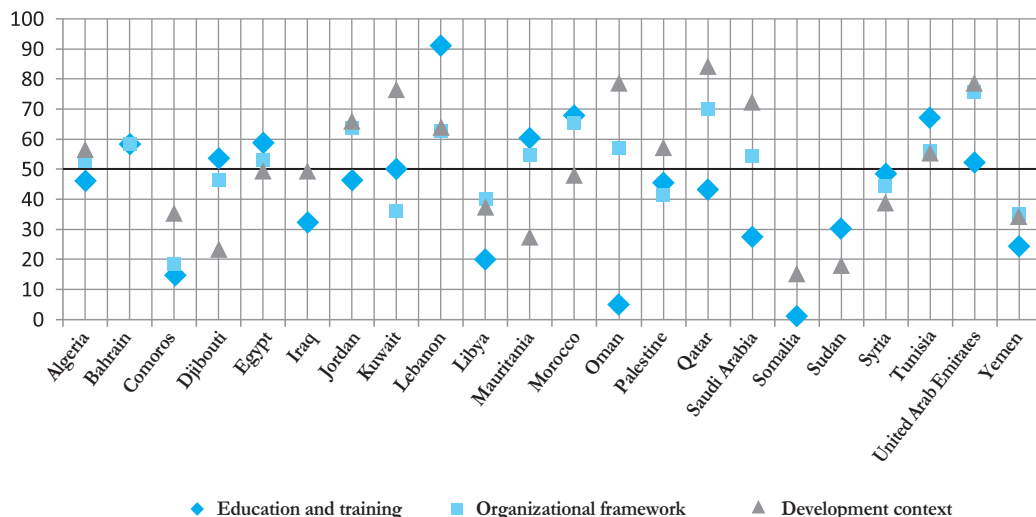


rather than qualitatively. The scores achieved under the *relation with the labour market* sub-pillar indicate important progress in some Arab countries in terms of building a training system that meets the requirements of employers and takes into account the general conditions of the labour market. They also indicate a mismatch between education/training and employment, which can also be seen in other sectors such as economy, higher education, and pre-university education.

A review of the scores on the *organizational framework* pillar shows that 12 countries scored more than 50. Their scores were almost identical for both constituting sub-pillars, except that three countries (Djibouti, Mauritania and Morocco) scored below 50 on the *labour market features* sub-pillar, and four countries (Libya, Oman, State of Palestine and Syria) scored below 50 on the *economic policies* sub-pillar. Scores of the remaining countries were below 50 for both sub-pillars.

Figure 10:

Results of Arab countries on the main pillars of the TVET Index



Regarding the third pillar, which relates to the *development context* and consists of three sub-pillars; scores were above 50 for 16 countries on the *education* sub-pillar, 12 countries on the *demography* sub-pillar, and eight countries on the

state of development sub-pillar. In fact, these eight (comprising the six GCC countries plus Lebanon and Jordan) topped all three sub-pillars, which indicates a strong correlation between them within the TVET system.

Endnotes

- ¹ European Training Foundation, 2015a.
- ² Arab Monetary Fund, 2015 (in Arabic).
- ³ UNESCO–UNEVOC, 2016a.
- ⁴ UNESCO–UNEVOC, 2014.
- ⁵ UNESCO, 2012b.
- ⁶ UNESCO, 2016a.
- ⁷ The European Training Foundation initiatives include Europass, Skills for Progress, the Open Method of Coordination, the Community of Practice cooperation platform model for TVET teachers and educators in South Eastern Europe, and the Skills for Poverty Alleviation electronic network for the Caucasus and Central Asia.
- ⁸ World Bank, 2013b.
- ⁹ Arab Labor Organization, 2008 (in Arabic).
- ¹⁰ Arab Monetary Fund, 2015 (in Arabic).
- ¹¹ International Labour Organization, 2015.
- ¹² UNDP and MBRF, 2014.
- ¹³ Arab Labor Organization, 2010.
- ¹⁴ Notable in this context is the work of the GIZ (Deutsche Gesellschaft für Internationale Zusammenarbeit [German Society for International Cooperation]). See for reference: GIZ, 2013; GIZ, 2012; and GIZ, 2009.
- ¹⁵ European Training Foundation, 2010.
- ¹⁶ UNESCO, 2015b.
- ¹⁷ UNESCO–UNEVOC, 2014.
- ¹⁸ UNESCO–UNEVOC, 2013a and 2013b.
- ¹⁹ Ibid.