Handbook of TVET Indicators in Jordan

Working Document

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Foreword

This handbook is a remarkable result. It provides experts in the field with the main definitions and methodological tools to develop a key indicator project for TVET in Jordan and aims to ensure coherence between all the institutions involved. It represents the first major collective effort by the three TVET providers in Jordan (Ministry of Education, VTC and Al Balqa Applied University) and the National Centre for Human Resources and Development (NCHRD) which formed a technical Committee to define a common set of relevant indicators that will form the base for the analytical work that can guide the decision-makers in Jordan when they evaluate the vocational education system and decide upon future priorities.

This initiative has been supported by the European Training Foundation in the context of the Observatory Function project which provided international expertise to support outstanding Jordanian efforts. In this first attempts the focus was on TVET sector. It is obvious that more work remains to be done before Jordan has a complete set of indicators for the entire educational system.

Efforts are already under way by NCHRD and the Ministry of Higher Education and Scientific Research in the context of the Al Manar project at NCHRD to derive a set of indicators for higher education. In a medium term perspective the most important missing links relate to the transition to the labour market and the skill needs of formal and informal labour market. In addition to the common statistical system under development, several additional tools need to be developed which should help to capture the current dynamics. Among those tools (i) tracer studies of school leavers from the different educational streams are expected to determine what happens to the graduates and to understand the reasoning of their access to the LM and (ii) "branch portraits" should provide information and analysis on sector trends and foreseeable skill needs from formal and informal sectors.

The next steps must build on the acknowledged success of the Al Manar and Observatory Function projects and widen the range of potential stakeholders able to provide added value to the national information system for Human resources. In particular the role of the Department of Statistics to provide accurate information on social issues is crucial as is the Civil Service Bureau regarding information on public sector employment. The network of labour offices throughout Jordan should in the years to come be equipped to provide relevant and accurate information on the labour market. Neglecting to do so would endanger the coherence of any new initiatives and weaken the capacity of the country to develop accurate strategies and policies. In addition cooperation of employers and employees corporations should be continued and reinforced to provide information and advices to build the national Human Resources Information System.

One can say that the coordinated efforts of all private and public Jordan stakeholders have proved to be successful during the past years. Efforts should from now on focus on identifying the conditions to make the network under development sustainable and on helping the stakeholders to fully implement the strategy for the development of a national Human Resources Information System as proposed at the beginning of the Observatory project.

We are confident that in a short period of time when indicators for the remaining educational areas and studies and surveys have been elaborated Jordan will be in a position to develop a comprehensive image of its human resource situation and as a consequence will be fully equipped with appropriate tools to initiate and conduct structured analysis capable of supporting decision makers from public and private sectors.

The present handbook is an important first step towards reaching such a goal.

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List of abbreviations and acronyms

BAU	Al Balqa' Applied University.
DOS	Department of Statistics.
ETF	European Training Foundation.
ETE	Education and Training for Employment
EU	European Union.
GDP	Gross Domestic Product.
HR	Human Resources.
HRD	Human Resources Development.
JSCED	Jordanian Standard Classification of Education.
JD	Jordanian Dinar.
ISCED	International Standard Classification of Education.
LM	Labour Market
LMI	Labour Market Information.
MOHE	Ministry of Higher Education and Scientific Research.
MOE	Ministry of Education.
MOL	Ministry of Labour.
NCHRD	National Center for Human Resources Development.
OECD	Organisation for Economic Cooperation and Development.
O.F	Observatory Function.
VET	Vocational Education and Training.
TVET	Technical and Vocational Education and Training.
VTC	Vocational Training Corporation.

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Introduction

The Barcelona process foresees the establishment of a Euro-Mediterranean free-trade area which will have an impact on the regional socio-economic context in the coming years. These important developments will require responsive local labour markets (LM) and as a consequence a labour force prepared to face these new challenges.

ETF support to some of the MEDA countries during the last four years in order to develop an information system able to contribute to an efficient decision-making process in the development of Human Resource policies and more specifically VET strategies responding to LM needs, has led to a number of strategic orientations taken by the country themselves. The concept of Observatory Function (OF) is well known and shared by those who produce and use the requested information and the networking activities set up allow to develop a more integrated, harmonised and coordinated information capacity. Concerned countries have elaborated differentiated mechanisms with the same aim: being better informed on HR evolution to take appropriate decisions. Several countries at the regional MEDA level have started working together and exchanging methodologies and experience. Visits of stakeholders in EU countries have provided information and exchange of methodologies. One can say that institution and capacity building have benefited of that support.

The 3 years EU MEDA project Education and Training for Employment (ETE) launched in November 2004 with the aim to develop the regional Euro-Med employment and training Observatory addresses the regional aspect and in particular the identification of common indicators allowing monitoring the HR evolutions and developing benchmarks. This programme contributes to strengthening cooperation among EU and MEDA countries via an exchange of experiences, reinforces the circulation of information, and encourages policy developments.

This process will be facilitated if each country is fully equipped to produce and exchange the requested information. According to country context focus will be put on securing institutional setting and on the implementation of methodological tools able to contribute to the analysis of the socio-economic developments in line with the labour market evolution and the requested human resources (HR) by the enterprises. Pilot approaches aiming at elaborating scenarios and policy recommendations will be continued as to allow stakeholders to exchange information and act as members of "transparent" network.

In this framework, ETF action addresses the concerns expressed by the European Commission and the donor community in general and the partner countries themselves regarding the lack of adequate and strategic information, indicators and analysis able to contribute to an efficient decision-making process in the development of Human Resource policies and more specifically VET strategies responding to LM needs.

The final goal of a sustainable Observatory Function being to elaborate scenarios and policy recommendations, ensuring complementarities between information providers and quality delivery of this information are at stake. In Jordan three main actors are in charge of delivery of TVET namely the Vocational Training Corporation (VTC), the Ministry of Education and the Al Balqa Applied University (BAU). Through an on-going process each of them is developing monitoring tools allowing the implementation of a strategic planning. Nevertheless monitoring progress is necessary within the overall TVET system through the use of shared indicators.

In the framework of the Observatory Function project in Jordan, it was decided to develop a set of common indicators on TVET taking into account all its components.

As a first step, it was decided to produce a handbook with main focus on definitions, methodology of indicators and to include some training tools to develop the Jordan indicator project.

It should be considered as crucial that the target audience for this indicator project is the group of Jordanian decision-makers in the field of TVET. It is important to keep this in mind because all the choices have to be driven by this point. For instance, for a decision-maker, there is no need to have 200 indicators but there is a need to have a small set linked to his activities and his policy. In Jordan, a lot of indicators on TVET exist, but in this project we have to build and select the most policy relevant and the most comprehensive indicators.

The active participation of NCHRD, the Ministry of Education, Al Balqa Applied University and the VTC has been supported by experts brought into the project by the ETF; Claude Sauvageot and Jens Johansen. The TVET indicator handbook complements a larger project, the MED-ETE project run by the ETF and financially supported by the European Commission. The goals and objectives which the indicators are to throw some light on have been taken from the "Human Resources Development Strategy in Jordan", which was approved by the Cabinet on 21 November 1998 (NCHRD publication series number 73), and from the education law No (3) for the year 1994. Finally the major objectives were derived from the policy objectives.

The present handbook sets out to be useful beyond the life-time of the MED-ETE project. The methodological chapter aims at not having to be updated as the set of indicators changes in line with the national priorities. It is envisaged that this publication will be followed by other publications on an annual basis updating the list of indicators as needed, but also more importantly analysing the results.

1. **General Methodological Considerations**
   1.1 **Two essential elements for the construction of a series of indicators**
      1.1.1 **An information system**.

Without a good information system, it is impossible to construct a relevant series of indicators. This is a *sine qua non condition*, but it is not enough.

Most countries in the world have implemented information systems, but the ever-increasing size of education systems, and the complex ways in which they work, have prompted a need to explain the justifications and arguments that lie behind education strategies and actions. This imperative has sometimes been further accentuated by the search for an efficient way of using resources in a context of growing shortages. This is the reason for the emergence of an ever-increasing need to develop or reinforce information systems so that they are integrated as key components in planning and decision-making processes.

Political decision-makers cannot be asked to use data that are out of date. Decision-makers are interested in the effects that their actions have, and it is therefore essential to have data on the current year that are sufficiently accurate for measuring the effect of a recent policy. Ministers need indications of the effect that their guidelines and actions have had, and parents want to use data relating to the schooling that their children are currently receiving.

The problem as regards vocational education and training is even more complex as, in addition to data on initial training, the information system needs to include data on continuing vocational training, vocational transition (i.e. the transition from training/education to employment), the global functioning of the labour market, and most particularly on people passing through the training system. It is therefore necessary to cover a number of fields, and use a range of sources of information to obtain a consistent set of information. Few countries have comprehensive information systems, and this will act as a serious brake on research on indicators. We will return to this later.

To make data more speedily available, a growing number of countries are conducting quick surveys based on representative samples of institutions and subpopulations (e.g. households, and workers in a given economic sector) to obtain data on education, employment integration and vocational training.

For example, every year, an institution could conduct a quick survey using a sample of secondary and/or vocational schools three days after the beginning of the academic year. In this way, it could quickly have an initial idea of school enrolments in different types of schools. This is a very useful piece of information for ministers to have at their first press conference after the beginning of the school year. Special support could be given to schools in the sample to ensure that they gave a quick, comprehensive reply. A sample is representative and easy to construct in so far as the basis of the sample (the total population of schools) is well-known, and experience shows that after one or two introductory years, the information obtained by the ministry is sufficiently accurate, and it is possible to identify the major trends that will be the focus in the schools census that will take place later on in the school year.

As for the employment integration of graduates, a sample can provide information on the conditions and quality of their integration except, of course, where the training or specialization has involved a very small number of students, and too few people have been interviewed. This is where we begin to see something of the limitations of sample-based surveys.

Most information that derives from household surveys (e.g. level of the population, and participation in traineeships) is contained in such a framework, and accordingly has advantages and limitations.

It is important to note at this stage that the objectives of a handbook of indicators and those of a statistical yearbook are not the same: the former aims to display developments in the education system underline certain trends and highlight problems; the latter seeks to bring all education data together in a single comprehensive volume. The latter must be exhaustive; the former need not be.

Consideration of indicators can improve the information system in terms of both volume and reliability. In fact, the publication of indicators involves giving information back to the people who produced it in the first place (e.g. heads of institutions, regional departments and producers of statistics), and they can then see how important and useful their information gathering is, and what use is made of it.

There is a lot of discussion going on at the moment about the reliability of data. True, it is often hard to be sure of the accuracy of a given piece of information about school enrolments and the functioning of the labour market, but we cannot expect some hypothetical data reliability to appear from nowhere. On the contrary, the quality can be improved by publishing and using the data – while, of course, taking the necessary precautions. This is the virtuous circle of statistics.

It should also be pointed out that some problems are so obvious that they do not need accuracy below a few per cent: for example, despite considerable uncertainty as to the quality of demographic data, and of data relating to education and employment, unemployed men are generally likely to have less than secondary level whereas unemployed women are generally very well educated (intermediate diplomas, bachelor or above). This result is not disputed. Similarly, there will always be considerable differences between urban and rural areas. The quality of these data will be improved by placing the statistics in a living context.

Moreover, political decision-makers will be able to give more support to the work of services that supply them with directly usable information.

We then need to move from data gathered by information systems to a series of indicators. We will return to this later.

1.1.2 An education and training policy and/or an education and training plan.

As has already been observed, an information system is vital, but not sufficient, for the construction of a relevant list of indicators. An education policy or plan is also necessary as far as the choice of indicators is concerned. In addition to provide a clear, relevant, simple description, indicators have to measure the events and developments for the various players in the education system. And clear, measurable objectives also need to have been defined for the education system, or for a subset such as vocational education and training. This can be presented in a number of ways, including documents such as a plan and measures well identified in laws, bylaws and regulations. The task therefore consists of drawing up indicators that are the most appropriate for following the selected guidelines.

As far as vocational training is concerned, objectives may focus on its development (e.g. a given percentage of young people should undergo this type of education) or on improving the employment integration of graduates (e.g. reducing the rate of unemployment by a given percentage). When the proposals are vague, such as "improving the quality of teaching", this becomes a more delicate matter. It is important to know what quality means in the country under examination: is it, for example, the teacher's qualifications, or the level

of the pupils, or the number of years of study spent at school, or getting through school without repeating a year, or a good teacher/pupil ratio? This is where we see the importance of the debate that will establish the list of indicators, and the range of difficulties involved in turning a political objective into an indicator. Objectives such as "strengthening institutional skills", "improving the school network", "improving the position and performance of vocational education" and "improving the management of teachers" are of the same ilk.

1.2. Some definitions and generalities about indicators
1.2.1 What is an indicator?
An indicator is synthetic and consists of pertinent information considering the objective that it is supposed to measure. Indicators are also tools that make it possible both to comprehend the current state of the education system, and to report on the current state to the entire education community, in other words the whole country. This highlights a confusion that should be avoided at all costs: an indicator is not basic information; it is a set of information that has been elaborated so that an educational phenomenon can be studied. It follows that we must not confuse a list of indicators with a list of tables that has been produced for a statistical yearbook, or to meet administrative needs. The number of pupils entering the second cycle is interesting for a manager, as is the number of teachers and pupils, but the indicator will first of all be the percentage of a cohort entering the second cycle, and secondly the number of pupils per teacher. The difference is clear, as is the difference in analytical potential. There is often a big temptation to add raw data to indicators, but it is important to avoid this error, and ensure that this kind of work retains its own character. It is possible, as various publications have stated, to set out the characteristics of a good indicator:

- its relevance;
- its ability to summarise the information without distorting it;
- its coordinated and structured character, which allows it to be linked to other indicators for a global analysis of the system;
- its accuracy and comparability;
- its reliability.

It must:
- measure distance in relation to an objective;
- identify problematic or unacceptable situations;
- respond to the concerns of politicians, and to the questioning that has resulted in it being chosen;
- compare its own value to a reference value, to a norm, and to itself calculated for another period of observation.

A system of indicators must function like an instrument panel, facilitating the identification of problems and measuring their substance. Detailed diagnosis and the search for solutions will take place through complementary analysis and research. At this point, we might evoke the classic, but appropriate picture of a light warning that an engine is about to overheat. When it blows up, a specialist must look for the reasons, and find solutions in order to solve the problem. In short, indicators play a fundamental role in directing and evaluating an education system.

1.2.2 What needs to be measured?
To build a good indicator, we need to identify the most important phenomena to be measured, and these will depend on the choices that countries make in response to their respective education policies. The relevance of other indicators is more universal and more descriptive

too, but their importance will depend on the context. The enrolment ratio in primary education is a good indicator, but if all children go to school in a given country, it loses much of its importance.

These indicators must also contain a descriptive overview of the education system. We need something simple and precise. An overview is necessary, and one that provides an analysis of the various phenomena with points of comparison.

Furthermore, we know that certain aspects of an education system can only be observed over time, and it is therefore necessary to present the development of data over several years. Lastly, it must take account of what may be a large number of the diversities and disparities, which, for example, may be geographical or socio-demographic (e.g. gender or social category).

In addition to the descriptive aspects, indictors must provide elements of an analysis of education policy. However, when using a group of indicators, we must be able to find avenues for understanding and explaining causal relations in the functioning of the education system. That is exactly what transparency offers.

These are unquestionably delicate interpretations, and that is why it is important for the group of chosen indicators to accommodate several viewpoints. This is hard work, but it is the only way that political decision-makers can be given the managerial tools, and society in general the elements with which to understand.

1.2.3 Defining the objectives of the education and training policy or plan

This is a key phase. Indeed, to be able to evaluate an education policy or plan correctly, it is vital to be able to explain the desired objectives clearly. They may be qualitative: improving the quality of education, or aiming for more equality, effectiveness or efficiency in the education system, or they may be quantitative: 80% of the enrolment ratio in primary education, 5% of the annual repetition ratio, or achieving a pupil-teacher ratio of 35:1.

This definition is never easy because a lot of education policies and plans do not set out their objectives precisely. They therefore have to be extracted from education policy statements and official texts, and these redefined objectives then have to be validated by the people responsible for the policies or plans.

The Technical Committee in Jordan working on this project succeeded in extracting the objectives for the TVET system in Jordan from national policy documents.

Six strategic goals have been defined:

- Objective n°1: enhancing the relevance between outputs of the education system and the requirements of social and economic development
- Objective n°2: Continuing the development of the infrastructure of general and vocational education
- Objective n°3: developing the qualitative aspects and dimensions of general and vocational education
- Objective n°4: Improving the efficiency and effectiveness of the education system, with special emphasis on the economics of education, including its inputs, operations and outputs
- Objective n°5: Promoting the democracy of education, and fostering its role in social mobility.
- Objective n°6: Provide opportunities for individuals to join education and to continue their education up to the maximum permitted by their interests, aptitudes and traits.

These goals were transformed into five major operational objectives:

Equipping Jordanians for the world of work either waged or self-employment;
Enhancing upper and horizontal mobility in the labour market;
Achieving equitable outcomes in TVET;
Rationalisation investment in training;
and maximising the value of public TVET expenditure.

1.3 General methodology for an indicator project targeted on policy makers.

It is impossible to build indicators without a very good information system. This much is obvious and there will be many references to this information system in this handbook. But when we start a project targeted on policy makers, we have to identify what they are interested in. The first step, in other words, is to move from policy relevant objectives to indicators.

1.3.1 Moving from objectives to indicators

The Jordan Technical Committee developed a list of initial indicators (more complex indicators as well as indicators focusing on quality, efficiency and continuing TVET will be developed in a second phase in 2006) in a series of meetings throughout 2005. The Technical Committee met 18 times between February and September 2005 in order to identify the major objectives and derive the pertinent indicators from these. The Jordan Technical Committee was supported in this work by a local ETF expert and had additional support from the international ETF experts through occasional workshops hosted by NCHRD.

1.3.2 How many indicators should be included?

No more than 40 indicators should be used as the document is not readable if there are many more. The OECD's *Education at a glance* exceeds this ceiling and many people have recommended that it be slimmed down, or broken down into several publications. These suggestions have led to a second publication, *Analyse des politiques éducatives* (Analysis of education policies), which only deals with a few issues, but does so much more analytically. However, the emergence of this publication has not resolved the problem of the size of *Education at a glance.* Other publications abide by this rule, and their users are delighted. As has been stated earlier on, it is important to avoid the error of turning the planned document into yet another statistical yearbook: it is therefore important to preserve the notion of indicator as defined above.

1.3.3 How should indicators be classified?

Classifications of the various indicators vary from one publication to another. Although the "analysis of operation" predominates, classification also relies on distribution by costs, activities and outcomes and is complemented by a description of the social and cultural environment.

If there is a preference for proceeding according to the various bodies, classification may rely on distribution according to institution, pupil, teacher and costs.

It is also possible to group by major topics, such as the level of knowledge, preparation for employment, preparation for social life, and equality in (or the democratisation of) education. In this way, the effectiveness and efficiency of the education system can be measured. However, the focus is more on topics that perform a transversal analysis of indicators than on the document's presentational logic.

Lastly, the kind of presentation that best facilitates analysis for the reader is one where the indicators are grouped in a manner that describes i) the Resources, ii) Activities or the Process and finally iii) Outcomes. This grouping of the indicators comes closest to an explanatory model of education systems. In practice, the three components are linked by close, multidirectional relationships. It is also possible to add characteristics of the socio-demographic environment that interact with each of the components.

It is possible to think of other classifications in the field of vocational education and training. For example, it is important to know the situation of the population as regards their level of knowledge or skills in a given field. It would then be interesting to know how different forms of vocational education and training (including that undertaken by young people and adults, and formal, non-formal and informal education) function as far as funding and activities are concerned. It would also be possible to evaluate outcomes under several headings such as pass rates for degrees and other forms of certification, and the quality of the employment integration of young people who have completed various forms of education and training.

In Jordan, the technical committee decided to classify by major objectives, but adding a general category named 'context', to stress the link between indicators and objectives. We obtain six categories:
- Context indicators
- Equipping Jordanians for the world of work (participation);
- Enhancing upper and horizontal mobility in the labour market;
- Achieving equitable outcomes;
- Rationalization investment in training;
- Maximising the value of public TVET expenditure

At this step, no indicators were defined for the third category because there is no detailed data available about the mobility in the labour market.
Sub distributions that derive from each method are usually closely connected: distribution by level of education, for example, is always represented, and is usually accompanied by a cost analysis.
In Jordan, the second category is divided by level and status:
- All TVET,
- Apprenticeship/ applied secondary education,
- Vocational education.
The fourth category is divided into two sub categories which show two different aspects:
- Access for equity groups,
- Performance/ Outcomes indicators.

It would be possible to imagine constructing predictive indicators, for example, on future requirements for teachers, but only as long as there are reliable demographic data available.
It might also be possible to complement analysis of vocational education and training with the outcomes of forecasts of the needs of the economy linked to predictions relating to education and training.
In a subsequent phase of the work started with this handbook, we will stress analysis. It is a very difficult part of the work, but a part that must be undertaken if the indicators are to have any purpose.
When a project on indicators starts, it should be done inside a period of 18 months to 2 years, but, of course, the final document on indicators has to use the most recent available data. And this indicator document has to be updated every year.

In Jordan, the first year has been spent producing this handbook identifying strategic objectives and defining the indicators. The second year will be spent producing a document analysing trends and current situation for each defined indicator.

1.4 The various stages of work on indicators

There are several stages of work when developing indicators. First, it is necessary to identify available sources and data. The next stage, which involves calculation, is not as easy as it looks at first sight. One reason for this is that different methods of calculation can be used, and it is therefore necessary to stress the importance of a precise definition of indicators, and particularly the need for a glossary of the terms used. These matters are addressed in detail in the following paragraphs: verifying the consistency of outcomes, analysis of indicators, and the format of the document using the calculations.

The content of this handbook is mainly oriented towards the last element.

1.4.1 Census of available data sources

All sources that can be used must be identified and used.

Overview

Most data on education, and particularly on vocational education, come from annual school censuses and staff surveys, examination results and infrastructures. Some are internal ministry of national education data, and some are statistical departmental data: for example, although data on pupils and institutions are normally available to the statistical service, data on staff, their status, their accommodation conditions, and their initial and continuing training are often held in these employees' personnel offices.

Demographical data are often the responsibility of the national institute of statistics. They are very important as it is essential to have data by age for all years, and estimates made for inter--census and post-census (in the case of the last census carried out) years must be high quality. Enrolment ratios may, like all indicators involving a sound knowledge of population data, be otherwise badly distorted. Similarly, it is important to have regional data so as to be able to take account of regional disparities in enrolment. Lastly, it is important to have projections in order to be able to make forecasts of school rolls and recruitment needs for teachers. It follows that some forecasting indicators might also be collected.

Financial data come from the directorate with responsibility for financial matters, and from the national institute of statistics, which is responsible for accounts. Many indicators need data such as the Gross Domestic Product and data taken from an analysis of the State budget.

It is also possible to use incomplete data on certain regions, or a sample of pupils. Inspection reports, for example, are an important source of information on teaching materials and the training of teachers: they can illustrate an analysis. Selective data gathered for the purposes of a study or a particular report can be used in the same way.

There must be no hesitation in using data from a survey. As has already been stated, what is important is that the sample should be well constructed, and representative of the level under examination. It is sometimes essential to use sample-based studies, as comprehensive ones are too expensive to carry out. The accuracy obtained is quite acceptable for an analysis of many problems encountered in the education system.

In the case of vocational training, it is necessary to mobilise all the information available on formal, non--formal and informal training. Here again, it is necessary to define exactly what is meant by these

terms. Once more, we see the importance of producing a glossary containing the main definitions used in the gathering of data and the calculation of indicators. It is necessary to have this information according to the section of the population (e.g. young people, adults, and by gender), and according to the duration of the training schemes because, unlike initial training, the duration of vocational training can be very different from the school year. Knowing the number of enrolments alone is therefore not enough. It is necessary to know the duration of the training courses followed, as it is possible to work out the number of days (or hours) of training from this. It will then also be possible to calculate the average duration of training for each enrolment. Another important element in vocational training is to try and find out exactly how many people have taken part in these training schemes.

Here, again, the number of enrolments is not enough as a given person may have taken part in several training exercises in a given period (e.g. the school year). The ministry responsible for vocational training may obtain data based either on a census of various training schemes or on surveys based on samples (e.g. of households) that include questions about vocational training courses undertaken during a reference period.

A good knowledge of forms of certification awarded by type and by training specialisation is also required. This information is normally available from various certification bodies, but it is often necessary to ask a number of institutions including the ministry of education, the ministry of vocational training, the ministry of health, the ministry of labour, and professional bodies.

As has been stated earlier, it is also necessary to build up a comprehensive picture of the various sources of funding for vocational education and training (e.g. ministries, local authorities, private enterprises and households).

Furthermore, it is necessary to have data on the employment integration of young people and on the transition from vocational education to employment. To do this, either household surveys (of the "employment survey" kind) that include questions on the prior situation (in this case "while undergoing training"), and on the employment situation at the time of the survey, or special surveys using samples of young people leaving the education and training system can be used. The latter usually provides more accurate information, and makes it possible, for example, to measure differences of integration that are linked to specialised training. Specialised industrial training produces better integration than specialised tertiary training, for example, but it is more expensive.

Lastly, it is good to have forecasts of the needs of the economy and society in order to put predictions and the training scheme in perspective.

Clearly, the final list of indicators can only be fixed after a check has been made on the availability of the data necessary for calculating the indicators. It will therefore always be a compromise between what is desirable and what is possible. It is likely that research on indicators will result in the introduction of new questions into existing surveys, and even the construction of new surveys. For example, in vocational education and training, it has been possible to observe that the data needed to calculate relevant indicators were very often lacking: it followed that work in this field was particularly gruelling.

In Jordan, four main sources are used: Ministry of education, the VTC, Al Balqa Applied University and Department of Statistics. This project only used available data and did not attempt to assess the quality or possible existence of other sources of data. It is recommended that the analysis in the second phase should be accompanied by a critical

appraisal of the data reliability and availability, including the possibility of developnig other data sources.

For instance, such sources could be tracer studies for school, university or VTC leavers, or data collections on the demand side coming from the labour market.

1.4.2 Calculation

Some examples

Indicator 4: **Participation rates in TVET by sex**
- Raw data needed:
- Number of students in the TVET from Al Balqa Applied University
- Number of students in the TVET from Ministry of Education (MOE).
- Number of students in the TVET from V.T.C.
- Number of students in all the education levels in the Ministry of education and in the Ministry of Higher education and scientific research (MOHE)

Calculation formula:

Number of TVET students in all the institutions / total number of students in (MOE + MOHE + VTC)

- Different sources have to be used: Records & Database at the Ministry of Education (MOE).
- Records & Database at the Vocational Training Corporation (VTC).
- Records & Database at the B.A.U.
- Records & Database at the Ministry of Higher Education and Scientific Research

We can stress the needs to put together data coming from different sources to calculate this indicator.

Using the same data sources, we can calculate the number of apprentices in three levels: craftsman, skill and limited-skill levels.
We can also calculate the enrolments in first and second grade in applied secondary education in MOE.
Using all these data we can calculate three indicators:
- Indicator 6: Percentage of apprentices / applied secondary education students to total TVET participants
- Indicator 8: Percentage of vocational education students to the total TVET participants.
- Indicator 10: Percentage of enrolled students in technical/ technician education to the total TVET registered students and trainees in specific school year.

For these three indicators, the denominator is the numerator of the indicator 4: total number of students in TVET in all the institutions.
For indicator 6, the numerator is the number of apprentices (craftsman, skill and limited-skill levels) / applied secondary education students.
For indicator 8, the numerator is the number of vocational education students in the first and second grade.
For indicator 10, the numerator is the number of enrolled students in technical/ technician education.
The glossary at the end of this handbook gives a precise definition for each item.

1.4.3 A very important step: verifying the consistency of results

After the various indicators have been calculated, it is necessary to verify the consistency of the results obtained. In practice, a number of

information sources are mobilised. All statisticians know the problems of using information in this way. For example, it is necessary to verify that net enrolment ratios do not exceed 100%, so that they are not inconsistent with activity ratios, and that education expenditure supplied by the ministry of education is the same as that provided by the ministry of finance or the national statistics institute. This work is very important as it is what guarantees the validity of the whole exercise. The necessary amount of time must be allocated.

To give some examples of problems: in *Education at a glance* No 3, if we add net enrolment and activity ratios for post-primary education, we obtain ratios above 100% for some countries. This arises from a problem of definition: in fact, on-the-job training schemes are double-counted as the young people concerned are undergoing training but at the same time have an employment contract.

What is more, net enrolment ratios sometimes exceed 100% when demographic data and school data are inconsistent. In some countries, and particularly in the capital, net enrolment ratios can exceed 100% because children who come from isolated parts of the country that have little school equipment are enrolled in regions where enrolment is well-developed. In one country, for example, the net enrolment ratio exceeds 100% in the western area because that is where children from neighbouring districts are educated.

As far as financial data are concerned, use is often made of the approved budget as it is the easiest piece of information to find. It is often also the most recent. However, it can be very different from the implemented budget, the latter usually being decided very late in the day, and with a time-lag of one or two years. This has to be researched very specifically for all these problems to be clarified, and series of consistent data constructed. If such research already exists, it is clearly very valuable, but estimates have to be made if it is not possible to harmonise all the data. They need reliable elements over several years to make them possible. The other solution is to indicate the sources of the data clearly, and to explain why there are differences. Let us not forget that this document is aimed at non-statisticians. It is wrong therefore to use stereotyped formal language, and concepts associated with the various data should be comprehensible. It is important to make it clear that it is not possible to say everything with statistics. This is what verifying the consistency is all about, and it is important not to miss this target. It will be through transparency that the target is reached.

It is worth repeating here that accuracy is not a *sine qua non.* It is possible to monitor developments in the education system and identify crucial problems (what an indicators document is meant to achieve) even if one does not have particularly accurate data.

The following step is the analysis and the publication of the different indicators. This will be done during the next phase of the project.

1.5 Some examples of how to use indicators in vocational education and training to be completed with the Jordan Technical Committee

1.5.1 Monitoring an effective link between training and employment, the transformation of vocational training, and the establishment of diplomas and forms of vocational certification

It is particularly important to evaluate vocational training diplomas by examining the employment integration of young people who leave the education system with these diplomas. In this way, it is possible to verify the relevance of the diploma and the recognition it is granted in employment circles. In France, commissions responsible for setting up

and modifying vocational diplomas attach great importance to surveys on the employment integration of young people. A number of surveys have been carried out in this area, covering periods ranging from seven months to five years after the students have left the education system. In the latter case, it is also possible to use surveys to study all the employment trajectories followed.

The results of these surveys, and particularly the various indicators that are obtained, strengthen discussions on the opportunity to change the content of training schemes, and therefore the certification, and on the importance of stopping a given training scheme. The indicators used include the date of access to employment, the total duration of the employment, the time spent in unemployment, the kind of employment taken (linked or otherwise to the diploma), the status of the employment (i.e. precarious or stable), and salary.

When creating a diploma, it is vital, while studying the introduction of training schemes that are close to those still being developed, to mobilise other information, particularly any that concerns changes in the sector targeted by the training.

1.5.2 Monitoring human resource management in enterprises, and its impact on the recruitment of young people

Work on this also provides an opportunity to observe the recruitment behaviour of enterprises, and to identify slippages in their demands, or developments in employment in the sector that has been targeted by the training: for example, it has been possible to see that secretarial jobs are no longer being given to holders of initial diplomas in vocational training, but to more qualified young people. In such circumstances, it is important to stop or change these first-level training schemes. In some industrial sectors, it has also been possible to observe that enterprises have become more demanding; here, too, it has been necessary to adapt the training and the diplomas. However, it is important to verify that the behaviour of enterprises is not linked to the state of the market: substantial unemployment can often encourage them to recruit more highly qualified staff because they are available and not necessarily more expensive. It is therefore necessary to get more general information on the training-employment relationship, which can be obtained from surveys on the active population such as employment-labour force surveys.

Indicators that make it possible to find out a lot about enterprises and sectors that recruit young people leaving the education system are also very useful; the proportion of young people who leave the education system and are recruited by enterprises constitute an interesting indicator in terms of economic sector and size of enterprise. It often serves to put the statements of both sides into perspective, and is therefore an important tool in the dialogue between the education system and enterprise.

1.5.3 Observation and forecasts of the training – employment relationship at macroeconomic level

At macroeconomic level, it is important to verify the main balances between the needs of the economy and the operation (and therefore the "production") of the education system. If it is clear that that there cannot be a satisfactory match between these two elements, it is necessary to ensure that the gap remains small and does not result in serious dysfunction. This work must be conducted on the basis of the facts and be prospective. This is all the more important given that the demographic situation indicates that tension on the labour market is very likely to be associated with a large number of retirements. Very

useful comparisons can be made between indicators on the levels of training required by the needs of the economy and indicators on the observed or predicted levels produced by the training system. Major imbalances can trigger remedial actions that can impact on the education system and on human resource management in enterprises. In practice, a training and internal promotion policy in enterprises can usefully "nudge" the education system into a frantic race to raise the level of training courses.

In this way, it is possible to see how important it is to receive observations and reports regularly on the training-employment relationship and forecasts, notwithstanding the limitations of prediction exercises.

1.5.4 Lifelong learning particularly as part of working life

Attention has already been drawn to the importance of training during working life. It is therefore essential to build indicators that can measure the importance of these training measures and their impact on people's careers and economic development. It is also very useful to know about the development of the kinds of certification obtained after initial training. The development of training schemes and forms of certification during working life will be a major issue in the coming years.

1.6 Link with other indicators

In Jordan, the next phase has to include further indicators on higher education and the labour market to improve the picture. It would be very useful to compare some indicators coming from the labour market to the indicators defined in this handbook. For instance, it is very interesting to compare the levels of occupations (excluding high skilled occupation) for the age group 25-34 to the distribution by level of TVET students to see if there are some relationships. For highly skilled occupations, we can compare with the distribution of bachelors, masters and doctorates.

The Occupational Work Organization Law is useful in the sense that it defines the skill levels to be used for data from the labour market.

1.7 Using this handbook

We can mention different ways to use this handbook:
- as a training tool for all the institutions involved in the TVET indicators project
- as a mean to ensure coherence between all the institutions involved in the project
- as an example of good practise and as providing some clear examples for other institutions (inside Jordan) and other countries (inside the MEDA region) in the field of indicators and in particular for TVET indicators
- in a future step, it can give some tools to analyse the coherence (or the incoherence) between TVET providers and labour market.

Institutions involved in the project can use it as a guide to develop and to improve their own information system because during the process some lacks of data were shown. In addition, when the calculation process started, some problems about the validity of the data appeared.

As soon as the handbook is published, it must be disseminated widely to all the institutions. At the same time, the calculation process must continue and all the indicators have to be calculated. As soon an indicator is calculated, we have to analyse it and find the right way to build tables and graph to present it in a easy-to-read and easy-to-understand way for non-specialist people. The project will only be finished when the first document with indicators and analysis is disseminated… and once the second document is in process.

1.8 Updating this Handbook

It is not enough to produce a handbook and to calculate all the indicators once, and then, after putting in so much hard work, go no further. To be used and to be useful, it must become a standard work, and to achieve that, there is only one solution: it must be done regularly, with a thorough analysis thereby becoming a document that is easy-to-use and easy-to-understand for policy-makers with the most recent data.

It is therefore necessary to organise things in such a way that the document is produced regularly. This has an impact on work organisation and the gathering of data.

It is necessary to place the statistics and data gathered on the education system in a living context. The definitions of terminology, the precise definition of indicators are a very important step in a project on indicators. This step has to be followed by the analysis of the indicators in a easy-to-use, easy-to understand way. This analysis which is not easy will be done during the following phase of this project.

Debates in this field must rely on objective data that are accepted by everyone. In this way, an in-depth study of the numerous real problems that arise in each country is possible. This publication encourages debate and offers issues for consideration; the objectives are defined in the opening pages.

As for vocational education and training, expectations are equally great. The qualifications and skills that are acquired constitute a key element in a country's development, and here, too, the need for evaluation in order to give better direction and provide reports is unquestionable.

As soon as the statistical work has got under way, it is always possible to go further and improve the reliability of existing indicators and, for example, create indicators to help run educational establishments and vocational training centres. But that is another story. To be continued.

2. The Jordan Experience

2.1 List of TVET Indicators in Jordan

The TVET policy framework in Jordan	
Strategic Goals	
R	Enhancing the relevance between outputs of the education system and the requirements of social and economic development.
R	Continuing the development of the infrastructure of general and vocational education.
R	Developing the qualitative aspects and dimensions of general and vocational education.
R	Improving the efficiency and effectiveness of the education system, with special emphasis on the economics of education, including its inputs, operations and outputs.
R	Promoting the democracy of education, and fostering its role in social mobility.
R	Provide opportunities for individuals to join education and to continue their education up to the maximum permitted by their interests, aptitudes and traits.
major objectives	
R	Equipping Jordanians for the world of work either waged or through self-employment.
R	Enhancing upper and horizontal mobility in the labour market.
R	Achieving equitable outcomes in TVET
R	Rationalisation of investment in training
R	Maximising the value of public TVET expenditure.
Context indicators (context)	
. 1	Educational attainment for population (15 years+) by age and sex.
. 2	Labour force participation rates by educational level and sex.
2-a	Employment rates by educational level and sex.
2-b	Unemployment rates by age, sex and educational level.
. 3	Gross domestic product per capita.
Equipping Jordanians for the world of work (participation)	
(A) All TVET	
4	Participation rates in TVET as a percentage of all participants of education/training.
5a	Participation rates in TVET by institution as a percentage of all participants of education/training.
5b	Participation rates in TVET by institution as a percentage of the relevant JSCED level.
(B) Apprenticeship/Applied secondary	
6	Percentage of apprentices/ applied secondary education to total TVET participants.
7	Distribution of apprentices/applied secondary education by sex and specialization (number or percentage) to total participants.
(C) Vocational Education	
8	Percentage of vocational education students to total TVET participants.
. 9	Distribution (number or percentage) of vocational education students by sex and type of education.
(D) Technical/Technician Education	
. 10	Percentage of students in technical/ technician education to total TVET participants.
. 11	Distribution (number or percentage) of participants in technical / technician education by sex, age and specialisation.
Achieving equitable outcomes (outputs and outcomes)	
(A) Access for equity groups	

The TVET policy framework in Jordan		
.	12	Gross enrolment rate in TVET by sex.
.	13	Net enrolment rate in TVET by sex.
.	14	Gross enrolment rate in TVET by region, and sex.
.	15	Net enrolment rate in TVET by region, and sex.
(B) Performance/ Outcomes indicators		
.	16	Completion rates in TVET by programme, and sex.
.	17	Dropout rates in TVET by sex, and programme.
.	18	Percentage of graduates in TVET by sex and programme.
Rationalization investment in training (resources)		
.	19	Percentage of current public educational expenditure in TVET to gross domestic product (GDP).
.	20	Public educational expenditure in TVET to the total public expenditure.
.	21	Public expenditure per student by type of education and training
.	22	Relative proportions of public and private investment in educational institutions.
.	23	Funds of TVET by sources and type of education and training.
Maximising the value of public TVET expenditure (outputs)		
.	24	Cost per contact hour.
.	25	Graduate cost per programme.
.	26	Teaching load per teacher.
.	27	Teachers' qualifications.
	27-a	Teachers' qualifications by sex, and educational level.
	27-b	Teachers' qualifications by sex, and years of experience.
.	28	Cost of in service training for teaching staff training by institution.

2.2 TVET indicators: **Major objectives, definitions, data required and sources and calculation formulas.**

POLICY FRAMEWORK OF TVET INDICATORS

MAJOR OBJECTIVES

- **Achieving equitable outcomes in TVET.**

THE INDICATOR (1) Educational attainment for population (15 years+) by age and sex**.**

DEFINITION: Number of population who lives in Jordan, age 15 years and above, distributed according to groups of 5 years each, and classified according to the Jordan Standard Classification of Education (JSCED).

▪ **REQUIRED DATA AND SOURCE**

REQUIRED DATA:
The distribution of the population who are 15 years and above according to sex and age classified according to Jordan Standard Classification of Education (JSCED).

SOURCE:
- Records and data base of DOS/ population surveys.
- Records and data base of AL-Manar **/**NCHRD

▪ **CALCULATION FORMULA**

Educational attainment by age and sex $= \dfrac{\text{Population (15+) by sex and age groups and educational level}}{\text{Total population by age and sex}} \times 100\%$

POLICY FRAMEWORK OF TVET INDICATORS

- **MAJOR OBJECTIVES**

  - **Equipping Jordanians for the world of work either waged or self-employed.**

THE INDICATOR (2) Labour force participation rates by educational level and sex

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DEFINITION :

> **2-a)** Employment rates by educational level and sex: Total number of employed of working age according to Jordan Standards Classification of Education (JSCED) to the total number of labour force (male/ female) according to educational level.
>
> **2-b)** Unemployment rates by age, sex and educational levels**:** Total number of unemployed persons of working age according to (JSCED) Jordan Standards Classification of Education to the total number of labour force (male/ female) according to educational level.

- **REQUIRED DATA AND SOURCE**

REQUIRED DATA:
Total number of employed and unemployed population by educational level, age and sex.

SOURCE:
- Records and data base of DOS/ population surveys.
- Records and data base of AL-Manar/ NCHRD

- **CALCULATION FORMULA**

Participation Rates :

$$\text{Total participation rates by educational level} = \frac{\text{Total number of labour force in the working age by educational level}}{\text{Total number of population of working age by educational level}} \times 100\%$$

2-a) Employment rates:

$$\text{Employment rate by age, sex and education} = \frac{\text{Total number of employed by age, sex and education}}{\text{Total working age population by age, sex and according to educational level}} \times 100\%$$

2-b) Unemployment rates

$$\text{Unemployment rates by age, sex and educational level} = \frac{\text{Total number of unemployed by age, sex and educational level}}{\text{Total labour force by age, sex and educational level}} * 100\%$$

POLICY FRAMEWORK OF TVET INDICATORS

▪ **MAJOR OBJECTIVES**

• **Maximising the value of public TVET expenditure.**

THE INDICATOR (3) Gross domestic product per capita **(GDP per capita)**

> **DEFINITION:** The distribution of the gross domestic product per capita

.

▪ **REQUIRED DATA AND SOURCE**

REQUIRED DATA
• The Gross domestic product.
• The total number of population for the same year.

SOURCE
• Records & Database at the Central Bank of Jordan & /or Ministry of Finance.
• The records of DOS/population surveys.

▪ **CALCULATION FORMULA**

$$\text{GDP per capita} = \frac{\text{Gross domestic product}}{\text{Total number of population}}$$

POLICY FRAMEWORK OF TVET INDICATORS

▪ **MAJOR OBJECTIVES**

- **Equipping Jordanians for the world of work either waged or self-employed.**

THE INDICATOR (4) Participation rates in TVET as a percentage of all participants of education/ training**. (PRTVET)**

DEFINITION: Total number of all participants in TVET by sex in a given school year to the total number of all students in the educational system by sex in the same school year.

▪ **REQUIRED DATA AND SOURCE**

REQUIRED DATA:
- Number of students in the TVET from B.A.U.
- Number of students in the TVET from MOE.
- Number of students in the TVET from VTC.
- Number of all students in education from MOE and MOHE

SOURCE:
- Records & Database at the Ministry of Education (MOE).
- Records & Database at the Vocational Training Corporation (VTC).
- Records & Database at the B.A.U.
- Records & Database at the Ministry of Higher Education and Scientific Research

▪ **CALCULATION FORMULA**

$$(PRTVET) = \frac{\text{Total number of all participants in TVET by sex}}{\text{Total number of all students in the educational system by sex}} \times 100\%$$

POLICY FRAMEWORK OF TVET INDICATORS

▪ **MAJOR OBJECTIVES**

- **Equipping Jordanians for the world of work either waged or self-employed.**

THE INDICATOR (5a) Participation rates in TVET by institution as a percentage of all students in the education system**. (PRTVETI)**
(5b) Participation rates in TVET by institution as a percentage of the relevant JSCED level

DEFINITION: Total number of all participants in TVET by institution in a specific school year to the total number of all students in the educational system or JSCED level in the same specific year**.**

▪ **REQUIRED DATA AND SOURCE**

REQUIRED DATA:
- Number of students in the TVET by institution.
- Number of students in the educational System
- Number of students by JSCED level

SOURCE:
- Records & Database at the Ministry of Education (MOE).
- Records & Database at the Vocational Training Corporation (VTC)
- Records & Database at the B.A.U.
- Records & Database at the Ministry of Higher Education and Scientific Research

▪ **CALCULATION FORMULA**

$$(PRTVETI) \ 5a \ = \ \frac{\text{The number of the apprentices or students by institution}}{\text{The number of all students in the educational system}} \times 100\%$$

$$(PRTVETI) \ 5b = \ \frac{\substack{\text{The number of vocational education} \\ \text{Students/apprentices by institution}}}{\text{The number of students in the relevant JSCED level}} \times 100\%$$

POLICY FRAMEWORK OF TVET INDICATORS

▪ **MAJOR OBJECTIVES**

- **Equipping Jordanian for the world of work either waged or self-employment.**

THE INDICATOR (6) Percentage of apprentices/ applied secondary education students to total TVET participants. **(PATVETP)**

DEFINITION: Percentage of apprentices (craftsman, skill and limited skill levels) and applied secondary education students in a specific school year to the total registered students and trainees in TVET in the same specific school year.

▪ **REQUIRED DATA AND SOURCE**

REQUIRED DATA:
- Number of registered apprentices (craftsman skill and limited-skill levels) / applied secondary education students in a specific school year.
- Number of registered vocational students in first and second secondary classes in a specific school year.
- Number of enrolled students in technical education in a specific school year.

SOURCE:
- Records & Database at the Ministry of Education (MOE).
- Records & Database at the Vocational Training Corporation (VTC).
- Records & Database at the B.A.U.

▪ **CALCULATION FORMULA**

Percentage of apprentices= $\dfrac{\text{Total number of apprentices (Craftsman, skill and limited-skill levels) / applied secondary education students in a specific school year}}{\text{Total registered students and trainees in TVET in same specific school year}}$ **x 100%**

POLICY FRAMEWORK OF TVET INDICATORS
- **MAJOR OBJECTIVES**

- **Equipping Jordanian for the world of work either waged or self-employment.**

THE INDICATOR (7) Distribution (number or percentage) of apprentices/ applied secondary education students by skill levels, sex and specialisation.

DEFINITION: Distribution (number or percentage) of registered apprentices/ applied secondary education students by skill levels, sex and specialisation in specific school year to the total number of apprentices/applied secondary education students in same specific school year.

- **REQUIRED DATA AND SOURCE**

REQUIRE DATA:
- Number of registered apprentices (craftsman, skill and limited-skill levels)/applied secondary education students by sex and specialization in a specific school year.

SOURCE:
- Records & Database at the Vocational Training Corporation (VTC).
- Records and database at the Ministry of Education.

- **CALCULATION FORMULA**

$$\text{Distribution of apprentices by sex and specialisation} = \frac{\text{Number of apprentices/applied secondary education by skill levels, sex and specialisation in specific school year}}{\text{Total number of apprentices / applied secondary education students by sex in same specific school year}} \times 100\%$$

POLICY FRAMEWORK OF TVET INDICATORS

- **MAJOR OBJECTIVES**

  - **Equipping Jordanian for the world of work either waged or self-employment.**

THE INDICATOR (8) Percentage of vocational education students to the total TVET participants.

> **DEFINITION:** Percentage of registered vocational student (in first and second secondary classes) in specific school year to the total TVET registered students and apprentices in same specific school year.

- **REQUIRED DATA AND SOURCE**

REQUIRED DATA:
- Number of registered apprentices (craftsman, skill and limited-skill levels) / applied secondary education students in a specific school year.
- Number of registered vocational students in first and second secondary classes in a specific school year.
- Number of enrolled students in technical education in a specific school year.

SOURCE:
- Records & Database at the Ministry of Education (MOE).
- Records & Database at the Vocational Training Corporation (VTC).
- Records & Database at the B.A.U.

- **CALCULATION FORMULA**

Percentage of vocational education students to the TVET participants =	$\dfrac{\text{No of registered vocational student (in first and second secondary classes) in specific school year}}{\text{Total TVET registered apprentices/students total in same specific school year}} \times 100\%$

POLICY FRAMEWORK OF TVET INDICATORS

▪	**MAJOR OBJECTIVES**

- **Equipping Jordanian for the world of work either waged or self-employment.**

THE INDICATOR (9) Distribution (number or percentage) of vocational education students by sex and type of education

DEFINITION: Distribution (number or percentage) of registered vocational student in first and second secondary classes by sex and type of education in specific school year to the total registered vocational students by sex in the same specific school year.

▪	**REQUIRED DATA AND SOURCE**

REQUIRED DATA:
- Number of registered vocational students in first and second secondary classes by gender and type of education in a specific school year.

SOURCE:
- Records & Database at the Ministry of Education (MOE).

▪	**CALCULATION FORMULA**

Percentage of vocational education students to the total TVET participants	=	Number of registered vocational student (in first and second secondary classes) by sex and type of education in specific school year ———————————————————— * 100% Total registered vocational students by sex in same specific school year

POLICY FRAMEWORK OF TVET INDICATORS

▪ **MAJOR OBJECTIVES**

• **Equipping Jordanian for the world of work either waged or self-employment.**

THE INDICATOR (10) Percentage of students in technical/ technician education to total TVET participants.

DEFINITION: Percentage of enrolled students in technical/ technician education to the total TVET registered students and trainees in specific school year.

▪ **REQUIRED DATA AND SOURCE**

REQUIERD DATA:
• Number of registered apprentices by gender and specialisation in a specific school year.
• Number of applied secondary education student by gender and specialisation in first and second secondary classes in a specific school year.
• Number of registered education students in first and second secondary classes by gender and specialisation in a specific school year.
• Number of enrolled students in technical education by gender and specialisation in a specific school year.

SOURCE:
• Records & Database at the Ministry of Education (MOE).
• Records & Database at the Vocational Training Corporation (VTC).
• Records & Database at the B.A.U.

▪ **CALCULATION FORMULA**

$$PSTE = \frac{\text{Number of enrolled technical / technician education students}}{\text{Total TVET participants in specific school year}} \times 100\%$$

POLICY FRAMEWORK OF TVET INDICATORS

- **MAJOR OBJECTIVES**

  - **Equipping Jordanian for the world of work either waged or self- employment.**

THE INDICATOR (11) Distribution (number or percentage) of participants in technical / technician education by sex, age and specialisation.

DEFINITION: Distribution (number or percentage) of participants in technical / technician education by sex , age and specialisation to total technical / technician registered students by sex, age and specialisation in specific school year.

- **REQUIRED DATA AND SOURCE**

REQUIRED DATA:
- Number of enrolled students in technical education by sex and specialisation in a specific school year.

SOURCE:
- Records & Database at the B.A.U.

- **CALCULATION FORMULA**

Distribution of enrolled students in technical/ technician education by sex, age and specialisation $=$ $\dfrac{\text{Number of enrolled students in technical / technician education by age, sex and specialisation}}{\text{Total technician registered students by sex in specific school year}} \times 100\%$

POLICY FRAMEWORK OF TVET INDICATORS

▪ **MAJOR OBJECTIVES**

- ▪ **Equipping Jordanians for the world of work either waged or self-Employment.**
- ▪ **Achieving equitable outcomes in TVET.**

THE INDICATOR (12) Gross enrolment rate in TVET by sex and stream

DEFINITION: Number of enrolment in TVET by sex and stream to the relevant population age group (JSCED level) by sex.

▪ **REQUIRED DATA AND SOURCE**

REQUIRED DATA:
- Number of enrolment by sex and stream in TVET
- Number of population by sex for ages (16, 17,18….22) years

SOURCE
Records & Database at
- Ministry of Education (MOE).
- Vocational Training Corporation (VTC).
- Al Balqa Applied University (B.A.U).
- Demographic and population data at the Department of Statistics (DOS**).**

▪ **CALCULATION FORMULA**

Gross enrollment rate by stream =	$\dfrac{\textbf{Number of participants in TVET by stream and sex}}{\textbf{Population by theoretical age for the examined JSCED levels}}$ **X 100%**

POLICY FRAMEWORK OF TVET INDICATORS

MAJOR OBJECTIVES

- **Equipping Jordanians for the world of work either waged or self-employment**
- **Achieving equitable outcomes in TVET.**

THE INDICATOR (13) Net enrolment rate in TVET by sex.

DEFINITION: Number of Enrolment in TVET for the single ages 16,17,18…..22 by sex to the population at the same ages by sex.

▪ REQUIRED DATA AND SOURCE

REQUIRED DATA:
Number of enrolment in TVET by sex for ages 16, 17, 18….22
Population for the ages 16, 17, 18…22 by sex.

SOURCE:
Records & Database at
- Ministry of Education (MOE).
- Vocational Training Corporation (VTC).
- Al Balqa Applied University B.A.U
- Demographic and population data at the Department of Statistics (DOS**).**

▪ CALCULATION FORMULA

Net enrolment rates:

$$\text{Males:} \quad \frac{\text{Number of male participants in TVET for single ages 16, 17, 18…22}}{\text{Male population for the same ages}} \times 100\%$$

$$\text{Females:} \quad \frac{\text{Number of female participants in TVET for single ages 16, 17, 18…22}}{\text{Female population for the same ages}} \times 100\%$$

$$\text{Total :} \quad \frac{\text{Number of participants in TVET for single ages 16, 17, 18…22}}{\text{Total population for the same ages}} \times 100\%$$

POLICY FRAMEWORK OF TVET INDICATORS

- o **Equipping Jordanians for the world of work either waged or self-Employment**
- o **Achieving equitable outcomes in TVET.**

THE INDICATOR (14) Gross enrolment rate in TVET by region and sex.

DEFINITION: Number of enrolment in TVET by sex and region to the population by theoretical age according to JSCED level by sex and region

▪ **REQUIRED DATA AND SOURCE**

REQUIRED DATA:
Number of enrolment in TVET by sex and region
Number of population for ages 16, 17, 18…22 by sex and region.

SOURCE:
Records & Database at
- Ministry of Education (MOE).
- Vocational Training Corporation (VTC).
- Al Balqa Applied University B.A.U
- Demographic and population data at the Department of Statistics (DOS**).**

▪ **CALCULATION FORMULA**

$$\text{Gross enrolment rate} = \frac{\text{Number of enrolments in TVET by sex and region}}{\text{Population of theoretical age according to JSCED by sex and region}} \times 100\%$$

POLICY FRAMEWORKE OF TVET INDICATORS

MAJOR OBJECTIVES

- Equipping Jordanians for the world of work either waged or self-employment
- Achieving equitable outcomes in TVET.

THE INDICATOR (15) Net enrolment rate in TVET by region and sex

DEFINITION: Enrolment in TVET for the single ages 16, 17, 18…..22 by sex to the population at the same ages by sex and region.

▪ REQUIRED DATA AND SOURCE

REQUIRED DATA:
- Number of enrolment in TVET for ages 16, 17, 18….22 by sex and region.
- Number of population for ages 16, 17, 18…22 by sex region.

SOURCE: Records & Database at
- Ministry of Education (MOE).
- Vocational Training Corporation (VTC).
- Al Balqa Applied University B.A.U
- Department of Statistics (DOS**).**

▪ CALCULATION FORMULA

Net Enrolment Rates:

Males:

$$\frac{\text{Male participants in TVET by region for the single ages 16, 17…22}}{\text{Male population for the same ages and region}} \times 100\%$$

Females:

$$\frac{\text{Female participants in TVET by region for the single ages 16,17…22}}{\text{Female population for the same ages by region}} \times 100\%$$

Total:

$$\frac{\text{All participants in TVET by region for the single ages 16,17…22}}{\text{Total population for the same ages by region}} \times 100\%$$

POLICY FRAMEWORK OF TVET INDICATORS

| ▪ | **MAJOR OBJECTIVES** |

- **Equipping Jordanians for the world of work either waged or self-employment.**
- **Achieving equitable outcomes in TVET.**

THE INDICATOR (16) Completion rates by stream and sex. CR

| **DEFINITION:** | Number of completers in TVET by stream and sex to total number of all entrants by stream and sex**.** |

| ▪ | **REQUIRED DATA AND SOURCE** |

REQUIERED DATA:
- Number of graduates from all the secondary level (male & female).
- Number of graduates from all training centers (male & female)
- Number of graduates from all technical community colleges.
- Number of all participants in TVET.

SOURCE
Records & Database of
- Ministry of Education (MOE).
- Vocational Training Corporation VTC.
- Al Balqa Applied University B.A.U

| ▪ | **CALCULATION FORMULA** |

Completion rate:

$$\frac{\text{Number of completers by stream and sex}}{\text{Number of all entrants in the first year X year ago by stream and sex (where x=duration of the stream)}}$$

POLICY FRAMEWORK OF TVET INDICATORS

▪ **MAJOR OBJECTIVES**

▪ **Equipping Jordanians for the world of work either waged or self-employment.**

THE INDICATOR (17) Dropout rates by sex and stream. DR

DEFINITION: Number of dropout students/apprentices/trainees by sex and stream to the number of participants in TVET by sex and stream.

▪ **REQUIRED DATA AND SOURCE**

REQUIRED DATA:
- Number of dropout students/apprentices/trainees from TVET training programs by sex and stream.
- Number of participants in TVET training programs by sex and stream.

SOURCE:
Records & Database

- Ministry of Education (MOE).
- Vocational Training Corporation (VTC).
- Al Balqa Applied University B.A.U

▪ **CALCULATION FORMULA**

Drop out rate:

$$\frac{\text{Number of dropout students, trainees from TVET by sex and stream}}{\text{Total number of participants in TVET by sex and stream}} \times 100\%$$

POLICY FRAMEWORK OF TVET INDICATORS

▪ **MAJOR OBJECTIVES**

- ▪ **Equipping Jordanians for the world of work either waged or self-employment.**

THE INDICATOR (18) Percentage of graduates by sex and programme. PG

DEFINITION: Percentage of graduate participants in TVET to total participants in TVET training programs by sex

▪ **REQUIRED DATA AND SOURCE**

REQUIRED DATA:
- Number of graduates by TVET training program by sex
- Total number of those who sit for final examination in the same specific TVET training program by sex

SOURCE:
Records & Database
- Ministry of Education (MOE).
- Vocational Training Corporation (VTC).
- Al Balqa Applied University, B.A.U

▪ **CALCULATION FORMULA**

$$PG: \frac{\text{Number of graduates from a specific TVET training program by sex}}{\text{Total number of those who sit for final examination in the same specific TVET training program by sex}} \times 100\%$$

POLICY FRAMEWORK OF TVET INDICATORS

- **MAJOR OBJECTIVES**

o **Rationalising the investment in training.**
o **Maximising the value of public TVET expenditure.**

THE INDICATOR (19) Percentage of current public educational expenditure in TVET to gross domestic product (GDP).

DEFINITION: All the educational current public expenditure in TVET as a percentage of the gross domestic product.

- **REQUIRED DATA AND SOURCE**

REQUIRED DATA:
Public Expenditure (Current) at:
- Vocational Education (MOE).
- Vocational Training (VTC).
- Applied Education (BAU).
- Gross Domestic Product (GDP).

SOURCE:

Records & Database at:
- Ministry of Education (MOE).
- Vocational Training Corporation (VTC).
- Al Balqa Applied University B.A.U
- Central Bank of Jordan, and / or Ministry of finance.

- **CALCULATION FORMULA**

$$\frac{\text{Current public educational expenditure (JD) in TVET}}{\text{Gross domestic product (JD)}} \times 100\%$$

POLICY FRAMEWORK OF TVET INDICATORS
▪ **MAJOR OBJECTIVES**

o **Rationalisation investment in training.**
o **Maximising the value of public TVET expenditure.**

THE INDICATOR (20) Public educational expenditure of TVET to the total public expenditure.

DEFINITION: All the public educational expenditure (current) for TVET as a percentage of public expenditure (current).

▪ **REQUIRED DATA AND SOURCE**

REQUIRED DATA:
Public Expenditure (Current) at:
• Vocational Education (MOE).
• Training Education (VTC).
• Al Balqa Applied University B.A.U

SOURCE:
Records & Database at:
• Ministry of Education (MOE).
• Vocational Training Corporation (VTC).
• B.A.U.
• Central Bank of Jordan and / or Ministry of finance.

▪ **CALCULATION FORMULA**

$$\frac{\text{Public current educational expenditure on TVET (JD)}}{\text{Total public current expenditure (JD)}} \times 100\%$$

POLICY FRAMEWORK OF TVET INDICATORS

▪ **MAJOR OBJECTIVES**
o **Rationalisation investment in training.**
o **Maximising the value of public TVET expenditure.**

THE INDICATOR (21) public expenditure per student by type of education and training**.**

DEFINITION: All the public education TVET expenditure per students.

▪ **REQUIRED DATA AND SOURCE**

REQUIRED DATA :
• Public educational (TVET) expenditure (current).
• Number of students in (TVET).

SOURCE :
  Records & Database at:
• Ministry of Education (MOE).
• Vocational Training Corporation (VTC).
• Al Balqa Applied University B.A.U
• Central Bank of Jordan and / or Ministry of finance.

▪ **CALCULATION FORMULA**

$$\frac{\text{Public educational (TVET) expenditure (JD) (current)}}{\text{Number of (TVET) students}} \times 100\%$$

$$\frac{\text{Public educational Voc. Education expenditure (JD) (current)}}{\text{Number of Voc. Education students}} \times 100\%$$

$$\frac{\text{Public educational Voc. Train. expenditure (JD) (current)}}{\text{Number of Voc. Training students}} \times 100\%$$

$$\frac{\text{Public educational Tech. Train. expenditure (JD) (current)}}{\text{Number of Technical Training students}} \times 100\%$$

POLICY FRAMEWORK OF TVET INDICATORS

▪ **MAJOR OBJECTIVES**
o **Rationalisation investment in training.**
o **Maximising the value of public TVET expenditure.**

THE INDICATOR (22) Private investment in educational institutions.

DEFINITION: Current private expenditures to total current public expenditures plus current private expenditures**.**

▪ **REQUIRED DATA AND SOURCE**

REQUIRED DATA:
Public and private Expenditures (Current) at:
- Vocational Education (MOE).
- Vocational Training (VTC).
- Al Balqa Applied University B.A.U

SOURCE:
- Records & Database at the Ministry of Education (MOE).
- Records & Database at the Vocational Training Cooperation (VTC).
- Records & Database at the B.A.U.

▪ **CALCULATION FORMULA**

$$\frac{\text{Total expenditure of the private sector on TVET}}{\text{Total expenditure on TVET by the private sector + public expenditure on TVET}} \times 100\%$$

POLICY FRAMEWORK OF TVET INDICATORS

- **MAJOR OBJECTIVES**
  o **Rationalisation investment in training.**
  o **Maximising the value of public TVET expenditure.**

THE INDICATOR (23) Funds of TVET by sources and type of education and training.

DEFINITION: All the educational public expenditures (TVET) distributed by source :
- Public budget.
- Loans.
- Grants.
- Trainee fees.
- Production work

- **REQUIRED DATA AND SOURCE**

REQUIRED DATA:
Vocational expenditure (current) by:
- Local budget.
- Loans.
- Grants**.**
- Trainee fees.
- Production works.

Source:
Records & Database
- Ministry of Education (MOE).
- Vocational Training Corporation (VTC).
- Al Balqa Applied University B.A.U
- Central Bank of Jordan and/or Ministry of finance.

- **CALCULATION FORMULA**

$$\frac{\text{Public education (TVET) expenditure from local budget}}{\text{All public educational (TVET) expenditure}} \times 100\%$$
$$\text{(public budget + loans + grants + trainee fees + production works)}$$

$$\frac{\text{Public educational (TVET) expenditure from loans}}{\text{All public educational (TVET) expenditure}} \times 100\%$$
$$\text{(public budget + loans + grants + trainee fees + production works)}$$

$$\frac{\text{Public education (TVET) expenditure from production works}}{\text{All public educational (TVET) expenditure}} \times 100\%$$
$$\text{(public budget + loans + grants + trainee fees + production works)}$$

POLICY FRAMEWORK OF TVET INDICATORS

- **MAJOR OBJECTIVES**

  - **Maximising the value of public TVET expenditure.**

THE INDICATOR (24) Cost per contact hour

DEFINITION: The expenditure in one year by stream per contact hour in the same year and educational level.

- **REQUIRED DATA AND SOURCE**

REQUIRED DATA:
All for the same specialisation
- Number of contact hours.
- The total cost per stream.

SOURCE:
- Records & Database at the Ministry of Education (MOE).
- Records & Database at the Vocational Training Corporation (VTC).
- Records & Database at the B.A.U.

- **CALCULATION FORMULA**

$$\text{The cost per contact hour} = \frac{\text{The expenditure in one year by the educational level by stream}}{\text{Contact hours in the same year and educational level, by stream}}$$

POLICY FRAMEWORK OF TVET INDICATORS

- **MAJOR OBJECTIVES**

  - **Maximising the value of public TVET expenditure.**

THE INDICATOR (25) Graduate cost per programme**.**

- **TITLE AND DEFINITION**

DEFINITION: The total amount of expenditure (current) on the TVET during the studying years for program to the number of graduates.

- **REQUIRED DATA AND SOURCE**

REQUIRED DATA:
All for the same programme & institution
- Number of studying courses &/or years.
- The expenditure (current).
- The number of graduates.

Source:
- Records & Database at the Ministry of Education (MOE).
- Records & Database at the Vocational Training Corporation (VTC).
- Records & Database at the B.A.U.

- **CALCULATION FORMULA**

$$\text{Average graduate cost per programme} = \frac{\text{Total expenditure (current) by TVET programme during the studying years}}{\text{Total number of graduates in a programme}}$$

POLICY FRAMEWORK OF TVET INDICATORS

▪ **MAJOR OBJECTIVES**

Maximising the value of public TVET expenditure.

THE INDICATOR (26) Teaching load per teacher.

DEFINITION: The number of teaching hours (courses) for each teacher by stream.

▪ **REQUIRED DATA AND SOURCE**

REQUIRED DATA:
All for the same program:
• Number of teachers by stream.
• The number of teaching hours (courses).

SOURCE:
• Records & Database at the Ministry of Education (MOE).
• Records & Database at the Vocational Training Corporation (VTC).
• Records & Database at the B.A.U.

▪ **CALCULATION FORMULA**

$$\text{Teaching load per teacher:} \quad \frac{\text{Actual contact hours by stream}}{\text{Number of teachers by stream}}$$

POLICY FRAMEWORK OF TVET INDICATORS
▪ **MAJOR OBJECTIVES**

Maximising the value of public TVET expenditure.

THE INDICATOR (27) Teachers' qualifications by sex, stream, educational level and years of experiences.

DEFINITION: The number of teachers in TVET in certain years by the qualification level to the total number of teachers in TVET:
27-a: number of teacher in TVET in certain year by educational level
and sex to the number of teachers in TVET by sex
27-b: number of teacher in TVET in certain year by group of qualification years and sex to the number of teachers in TVET by sex.

▪ **REQUIRED DATA AND SOURCE**

REQUIRED DATA:
    All for one specialisation distributed according to gender:
• Total number of teachers according to years of experiences.
• Total no. of teachers distributed according to level of education in a school year.

SOURCE:
• Records & Database at the Ministry of Education (MOE).
• Records & Database at the Vocational Training Corporation (VTC).
• Records & Database at the B.A.U.

▪ **CALCULATION FORMULA**

27-a The percentage of teacher's qualifications by educational level and sex=

$$\frac{\text{Number of teachers in TVET by qualification, stream and sex}}{\text{Total number of teachers in TVET by stream and sex}} \times 100\%$$

27-b According to years of experience distributed to groups of years and by sex=

$$\frac{\text{Number of teachers in TVET by years of experience (groups of years), stream and sex}}{\text{Total number of teachers in TVET by stream and sex}} \times 100\%$$

POLICY FRAMEWORK OF TVET INDICATORS

▪ **MAJOR OBJECTIVES**

Maximising the value of public TVET expenditure.

THE INDICATOR (28) Cost of in service training for teaching staff training by institution.

DEFINITION: Cost of in service training and human development in one year to the total current expenditure for that year by institution.

▪ **REQUIRED DATA AND SOURCE**

REQUIRED DATA:
• Number of courses.
• Total cost for in services training.

SOURCE:
• Records & Database at the Ministry of Education (MOE).
• Records & Database at the Vocational Training Corporation (VTC).
• Records & Database at the B.A.U.

▪ **CALCULATION FORMULA**
In services training cost per course and cost =
The total expenditures on training courses for all trainees by institution divided by total expenditure (current) by institution

2.3 Applying the TVET indicators.

The TVET indicators in Jordan are grouped in five major groups: context indicators, indicators on participation, achieving equitable outcomes, rationalising investment in training and maximising the value of public TVET expenditure. The application of the indicators defined in chapter 2 will be discussed within the context of each of these groups. The indicators in each group have been defined by the Jordan Technical Committee to measure progress towards the major objectives. The groups do not match the major objectives exactly. One of the major objectives, enhancing upward and horizontal mobility in the labour market, is not being addressed in this phase due to the difficulties inherent in collecting reliable data for indicators on it. A fifth group of indicators was added to provide a context within which the remaining four major objectives could be assessed.

Gender differentiated indicators allow decision makers to assess if there are gender differences in the access to and participation in a particular part of the education system. Gender differentiated indicators throw light on the differences in the educational outcomes and in the possibilities open to graduates depending on their gender. Throughout this section these comments on gender and indicators hold true. All indicators that can should be analysed in a gender perspective, as this is the only certain manner in which to assess the gender impact of education policies.

Gender inequalities often reflect wider inequalities in a society, so the existence of a gender inequality can in itself be seen as an indication of further inequalities that should be addressed.

Having indicators by age gives the policy makers an intuitive way of quickly assessing whether there has been changes over time. For example the educational attainment levels are likely to change over time as larger and larger groups in each generation get access to education of a higher and higher level. The number of each age range with a certain educational attainment can then be compared to ascertain the progress and whether it is progressing at a satisfactory speed.

The goal of this chapter is not to exhaustively determine how and when each of the indicators in chapter 2 should be interpreted or for that matter presented. The goal is rather to emphasise some of the possibilities open for interpretation and to highlight some of the potential pitfalls.

It must be stressed that an analysis of indicators covering one or just a couple of years risks overemphasising phenomena or tendencies that are not representative. Great care should always be taken not to draw conclusions on too weak a material. It is well worth keeping in mind that the data have usually been gathered some years in advance of the analysis and that subsequent reforms or other developments may have made these data misleading or even obsolete. At the same time it should be remembered that many tendencies in the educational system have a long term nature that make the most recent data less imperative. The analysis should always base itself upon the most recent data available and efforts should be made to have data made available in a timely manner, but depending on the focus of the analysis it may be more important to raise the quality and reliability of the data, rather than the timeliness.

The trade off between data timeliness and reliability is not easily resolved. There is no point in having data for the present school year if the data are not representative and if the bias in the data is not known. And on the other hand, in general policy making, it makes little sense to develop high quality data and indicators if it means that they are only available many years after the end of the school year.

2.3.1. Context indicators

The context indicators provide the necessary background against which to judge the progress of the education system in general and the TVET system

in particular. The TVET system is set up specifically to provide graduates with skills and competences for the labour market. It is thus imperative that the graduates improve the economic and social conditions within Jordan. One way of measuring whether such an improvement is happening is therefore to monitor the overall educational attainment levels of the population, the labour force participation rates, employment rates and unemployment rates. It should be kept in mind that unemployment rates may be affected by things unrelated to the actual performance of the labour market. It is therefore recommended to use employment rates to measure the performance of the economy.

Another measurement of the economic performance is the gross domestic product (GDP) per capita. By dividing the GDP with the number of inhabitants it takes population growth into account. For example, the economic growth in the USA is less impressive when it is recalled that there has been a steady inflow of immigrants that have added to the GDP. On its own the GDP per capita summarises where the economy of Jordan is in comparison to other countries. Ideally it should be compared in purchasing power parity terms, so as to take account of how much a dollar actually may purchase in the local economy.

The unemployment rates by educational attainment serve to highlight the premium placed on education. Where there are large differences in the unemployment rates from one educational level to the next it indicates that the education makes a difference in the employability of the person. Conversely, where there is no or hardly any difference in the unemployment rates it points to the education system not being able to provide skills at different levels. Naturally, one should be careful not to over-interpret on the basis of a single year as the rates may be influenced by sudden external shocks.

Analysing the labour force participation rates and the employment rates by educational level one gets a measure of how much the labour force, and especially the employment, may be expanded if the educational level was raised (typically the employment rates are higher with higher educational levels, although there are exceptions. Such exceptions may indicate the existence of dual labour markets).

2.3.2. Participation

The indicators in this group mainly highlight two aspects. On one hand the indicators on distribution within each main category shows how the students who have chosen a particular study decide to specialise themselves. On the other hand the participation rates in TVET demonstrate the importance of each programme within the larger context of TVET. All of the participation indicators are based on enrolment data.

Participation rates must not be mistaken for completion rates, especially as enrolment data is often collected early in an academic year. Participation rates are occasionally used as (poor) proxies for quality in the absence of any other indicator of quality.

Over time the rates may reveal changes in interest on the side of the students, on the side of the education providers or in the admission criteria. Flows throughout the whole education system may be examined if TVET data is combined with data from general education. Increases in TVET participation rates analysed in isolation would normally be regarded as a positive phenomenon. But by analysing the TVET in isolation it is possible that the analyst overlooks simultaneous decreases in general education of an even larger magnitude that would lead to an overall negative description of the development in participation patterns.

The Jordan Technical Committee has calculated indicators 6, 8 and 10 using data for the school year 2002/2003. Out of a total of 69 931 TVET students, 8 109 were apprentices (for short we will refer to the apprentices and the applied secondary education students as apprentices), 34 855 were other vocational students and 26 967 were in technical education. This brings the

shares of apprentices, other vocational students and students in technical education to 11.6%, 49.8% and 38.6% respectively. More than 60% of the TVET students are thus in education linked to VTC and one out of every nine of these is an apprentice. Conversely that means eight out of nine of these students do not have a direct link to the labour market. A large proportion of the total number of TVET students are in vocational education provided by the Ministry of Education.

This data can be compared to data on employment or unemployment by educational programme to discuss whether the right combination of educational programmes is being offered.

The indicators can also be examined over time. The largest changes are in the share of apprentices, which increases from 9.0% to 11.6%, and in the share of students in technical/technician education which drops from 42.6% to 38.6% from the previous school year. There has in other words been a clear shift in where students enrol. Apprentices are becoming more popular at the expense of technical education – at least in terms of relative importance. The same tendencies are seen in the raw data, but there an interesting gender difference is seen. From the raw data we can see that there are about 1 000 more male apprentices and approximately the same number of extra female apprentices since 2001/2002. However the number of male technicians remains more or less stable whereas the number of female technicians drops by more than 2 000 from 2001/2002 to 2002/2003. It would appear that women are turning away from technical/technician education.

This simple analysis of the indicators must not be taken too serious. It is based on only two years and it may well be that it was the year 2001/2002 which was abnormal and that the indicators for 2002/2003 represent a return to a more normal distribution of students.

The indicators should be interpreted in the light of the overall importance of the TVET sector, which is information that can be estimated from the indicators on enrolment in the next section, 2.3.3.

2.3.3. Achieving equitable outcomes

Gross enrolment rates reveal how large the capacity is in an educational system while the net enrolment rates measure how large a part of the intended target population is indeed enrolled in a given programme. It should always be remembered that net enrolment rates will be lower if students enrol **before** the theoretical starting age. A net enrolment rate of 85% is therefore not necessarily proof that a given educational level has failed to reach the whole of the target population. It is entirely possible that 15% of the population routinely start earlier than expected and that similarly 15% finish the programme "too early" in order to advance to the next educational level. Local knowledge about enrolment patterns is hence crucial for a correct interpretation. A solution for a next stage of the work could be to add an indicator on the early entrance or to calculate the proportion of a generation which reaches the last year of a programme.

The gross and net enrolment rates by region have the same interpretations as for the national level, except of course the area of validity is now the region.

Enrolment rates are generally considered to be about access whereas indicators such as completion and drop out rates point towards the efficiency of the educational system. Do note that the completion rate indicates how many passes through the school system, but it does not indicate anything about the quality of the education the students have received. More than once a country has been observed having a large rise (or fall) in completion rates where it turned out upon closer examination that the rise was

predominantly caused by a relaxation (or tightening) of the graduation rules and regulations. In some cases students pass from one level to the next, not on the basis of them having achieved a certain level of knowledge, but on the basis of a fixed number of places available in the higher level of education. In such cases one can naturally not interpret the completion rate as a genuine reflection of how many students had passed a given level at the time of measurement.

Drop out rates pose their own difficulties, especially when carrying out an international comparison, but also when comparing rates from one education stream to another. The requirements in terms of academic performance and attendance may diverge to such an extent that the rates cannot be compared, simply because the requirements that students in one stream may have to fulfil are far harder than the requirements in other streams.

Lastly, the percentage of graduates by programme focuses on the number of exam sitting students who pass the exam. The indicator thus indicates both the willingness to sit the exam (if the number of exam sitters is put in relation to the number of eligible sitters) and the degree to which the students are genuinely prepared to sit the test.

2.3.4. Rationalising investment in training

The question of rationalising the investment in training is being addressed by studying the financial resources allocated to education and training and to TVET in particular.

The first indicator, percentage of current public educational expenditure to GDP, is often used as an indicator of the public commitment to education. It is perhaps best seen as a reflection of the part of the national wealth allocated to education and hence as an indication of how many resources that could potentially be freed for educational purposes. The public commitment to education is measured more reliably through the percentage of public educational expenditure to the total public government expenditure as this indicator is not affected as much as GDP may be by external factors.

Splitting the public expenditure up by type of education and training and dividing it with the number of students in each of these types of education makes it possible to directly compare the cost of a student from one type of education to another. There is a risk that such comparisons are used to redirect resources from one programme to another merely on the basis of the cost per student, but that is not a reasonable use of the indicator. It is natural that some programmes are more expensive than others and at times these differences may even be very large. Only where similar programmes were compared could one talk about more or less efficient programmes. As it is the indicator is useful for highlighting the cost to society of particular studies. At times such information alone may be used to determine the number of places made publicly available for future students. One example could be a country that finds that the cost of producing certain graduates domestically is more expensive than sending these students abroad and paying for their degrees there. It may then make sense for a country to cease the provision of that particular programme if it is assessed that the programme cannot be provided at a higher level of quality domestically. Ultimately, such decisions are political in nature, but with the right data at least they can be made informed.

Similarly the distribution of public expenditure by type of education and training provides a simple overview of the political priorities of the various types of education. Highlighting the sources of the funds helps to make the sustainability and local grounding of a given programme clearer. Programmes based on loans may find access to funding harder if the general economic climate should take a turn for the worse, for example, and local funding may also be more susceptible to sudden changes.

Setting the cost per student relative to the GDP per capita is a useful way of highlighting how many resources are being allocated to per student relative

to the wealth of the country. In higher education it is not abnormal to see costs per student higher than the GDP per capita. This merely indicates that the value of a higher education graduate is considered to be substantially higher than the GDP per capita.

Relative proportions of public and private investment in educational institutions can be used to examine the importance attached to certain parts of the education system by the private sector. The more detailed the information is the easier it will be to use the data to study in which areas the private sector either finds a profit opportunity or sees a gap in the provision of skills. To the extent that the private funding is non-profit it may indicate areas with a perceived need for further funding which is not met by public funds.

2.3.5. Maximising the value of public TVET expenditure

There is a certain overlap between this major objective and the previous, rationalising the investment in training. To determine the optimal amount of funds for education and/or training it is necessary to examine both the availability of funds and their most efficient use. One way to determine whether the allocation of resources is optimal is to look at the cost per contact hour or the graduate cost per programme. Estimating the cost for the visual outcomes, whether that is the number of hours of education provided or the total number of graduates passing the final exam, provides the policy makers with a more tangible idea of what they are getting for the funding which they are providing.

A different approach is to examine whether the teachers have the necessary qualifications. Does the level of qualifications live up to the expected standards? Has sufficient funds been set aside for in-service training for the teachers? Are the teachers working as expected? The teaching load may, for example, indicate that teachers are not working as many hours as they are being paid for. This would not in itself indicate that the teachers are lazy. It may rather show that the teachers are over-worked and end up being so stressed that it leads to sickness and absence or it may show that the pay does not provide a sufficient income, forcing the teachers to take second jobs at the detriment of their primary job. On the other hand, the teaching load may also be higher than expected due to teachers sacrificing their spare time to provide quality education.

2.3.6. Future indicators

In addition to the indicators discussed above we must not forget that as the educational system is being analysed new indicators will become interesting. When an indicator highlights, for example, that there is a tendency for more students to choose to attend TVET than general education, decision-makers will often want to know the underlying causes for such tendencies. Has there been an increase in drop outs in general education? Are TVET graduates more employable? These are some of the interesting questions that one could imagine a decision-maker ask after having read an analysis of the indicators presented in this handbook.

The second phase of the present project will focus on continuing education, quality and efficiency among other things. One of the indicators that is increasingly seen as important in the international context is the indicator called survival rate to grade X. The indicator measures the percent of students who make it through the education system to a specified grade. It has traditionally been carried out for the first years of primary education, but it can obviously be adapted to measure the share of a cohort that makes it through VET at ISCED level 3, to give just one example.

2.3.7. Presentation of indicators

There is a multitude of ways in which to present an indicator. It can be presented in tables, in text and in a graphic or other visual form. The most appropriate form is dependent on the indicator itself and its complexity, the

intended audience and the media, i.e. printed material, presentation, television or radio. Certain graphs may be correct, but contain such a wealth of information that they become very difficult to understand for a lay person.

For the indicators discussed in this handbook the most appropriate presentation will often be a table or a graph. When the indicators are parts of a larger whole, such as the distribution of TVET students among the streams, it may be useful to present data for one year in a pie chart. With data for the same indicators but for more than one year a different depiction could be considered. The percentages of students by stream could be shown in a line chart over time, allowing the reader to visualise the tendencies for students to enter a given stream.

Graphs most commonly use:
- line charts to present time series;
- bar charts to present breakdowns of a given indicator by region or by gender;
- cartographic representations to highlight geographical differences.

The choice of presentation will have to be based on the requirement for accuracy or greater intelligibility. If we see a slight shift in an indicator such as education's share of GDP, we can present a table with the exact value varying slightly. By contrast participation or drop out rates may have increased substantially and therefore be more visible on a graph than in a table.

The rule of thumb is to be flexible and to choose the representation that conveys the largest amount of information in the simplest manner for a non-specialist and to do so in an honest manner. It must be remembered that the choice of layout of a graph can have a significant impact on how the indicator is being interpreted. Small variation can be exaggerated by only showing the part of the graph where variation occurs, thereby making it appear larger and more dramatic than it actually is.

2.4 Glossary of TVET Indicators Terminology

Age Group
A group of people, defined by age.

Applied Secondary Education
A stream of secondary education (vocational training), aims at preparing participants to join the labour market. Participants do not sit for the general secondary certification.

Apprentice
Any person who participates in apprenticeship programme.

Apprenticeship
Formal alternate vocational training provided to individuals who are between 16-22 years of age and successfully completed the basic education cycle and leads to skilled worker or craftsman skill level. The apprentice spends part of the training duration in educational institution to learn theoretical knowledge and the other part in an enterprise to acquire practical skills. Apprenticeship is regulated by training agreements and contracts that specify duties and rights of each party.

Basic Education
An education cycle which combines primary education and lower secondary education, it represents the compulsory education cycle. The successful completion of the basic education is a condition for continuing the secondary cycle. It covers ISCED levels 1 and 2.

Capital expenditure on education
Expenditure for assets that last longer than one year. It includes expenditure for construction, renovation and major repairs of buildings and the purchase of heavy equipment or vehicles.

Community College Associate Degree
A certificate issued by Al Balqa Applied University to those who pass the community college associate degree examination

Community College Associate Degree Examination
A comprehensive examination administered at the end of the technical / technician education (community colleagues) to identify, validate and certify the achievement of learners.

Completion
Meeting the prescribed requirements of completion of educational or training programme.

Comprehensive Secondary Education
See secondary education

Contract hour
A period of face to face learning throw direct contact between the learner and the teacher

Craftsman Level
The craftsman skill level category includes jobs that require the application of practical skills and vocational knowledge related and cover the whole frame of an occupation to enable them to practice the functions and tasks of an occupation to the performance requirements of the labour market and to enable them to distribute and schedule work activities and coach subordinates. Individual at this category require education and training for one year after the completion of secondary education or equivalent. The followings are examples of jobs classified at this category: Tuner general, Salesperson general, Practical nurse, Typical general and electrical house wiring general.

Credit Hour
A measure of academic work, one credit hour represents one hour of class time (contact hour) per week per term.

Current expenditure on education
Expenditure for goods and services consumed within the current year and

which would be renewed if needed in the following year. It includes expenditure on: staff salaries, books and teaching materials; furniture and minor equipment, minor repairs, and other services and utilities**.**

Dropout
Withdrawal from an education or training programme before its completion. Dropouts may also include learners who have completed education or training but did not pass the examination.

Employment
All persons of working age who are working in the public and private sectors.

General Secondary Education Certificate
A certificate issued by ministry of education to those who pass the general secondary education examination

General Secondary Education Examination
An examination administered at the end of secondary education to identify, validate and certify the achievement of learners**.**

Graduate
Any person who meets the completion requirements of an educational or training programme and passes the prescribed examination / test

Gross Domestic Product
A statistical measure of market value of the goods and services produced in a country within a specific period of tim**e.**

Gross Domestic Product per capita
Gross domestic product divided by the number of inhabitants

Indicator
An indicator is not basic information; it is a corpus of information that has been elaborated so a phenomenon can be studied. It is synthetic information that will allow for measurement, evaluation and guidance. It should refer to a desired goal or objective.

Initial Vocational Training
Vocational training carried out in the initial training institutions before entering working life.

International Standard Classification of Education (ISCED)
 A classification system that provides a framework for the comprehensive statistical description of national educational systems and a methodology that translates national educational programmes into internationally comparable levels of education. The basic unit of classification in ISCED is the educational programme. ISCED also classifies programmes by field of study, programme orientation and destination.

Labour Force
The sum of those who are employed and unemployed from the age group of 15-60 (15-55 for the women).

Labour market
1. A labour market is the market in which potential workers seek to sell and employers seek to buy labour services. Negotiations in the labour market usually cover both pay and conditions of service.
2. The system of relationships between the supply of people available for employment and the available jobs.

Med-university Education/community college
See technical/technician education.

Participant
Any person who registered and enrolled in educational or training programme.

Population
All residents at a reference period.

Registered student/trainee
Any applicant who paid the participation fees in educational or training

programme.

Secondary Education
An Educational cycle that follows the basic education of 2 years duration in Jordan (3 years in some Arab countries). A general examination is administered at the end of the secondary cycle. Those who pass the examination can join higher education institutions.

Skilled Worker Level
The skilled worker skill level category includes jobs that require the application of practical skills and vocational knowledge related to a division of the occupation and do not cover the whole frame of the occupation to enable them to perform job duties and tasks according to labour market requirements. Individuals at this category require education and training at the secondary education level or equipment. The following are examples of jobs classified at this category: Welder, Electrical house wiring, Arab language typist, English language typist and poultry worker.

Successful Completion
Meeting the prescribed requirements of completion of educational or training programme and passing the final examination

Target Group
A group of people that a particular study aims at.

Teaching Load
Number of contract hours officially specified for a teacher per week

Technical/Technician Education
A post secondary level of education of 1-3 years of duration. The successful completion of secondary education or equivalent is a condition for enrolment. It covers ISCED level 4.

Technician Level
The technician skill level category includes jobs that require the application of principles, concepts, methods and procedures related to work. This requires that workers should process scientific, technical, practical and supervisory skills to be able to understand and analyze the performance and to determine work steps and follow-up its implementation. Workers at this category represent the link between professionals and workers at the basic skill levels. Individuals who perform at this skill category need training and education. At med university level or community colleges. The following are examples of jobs classified at this category: materials lab technician, draftsman, and electrical technician.

Theoretical age
The theoretical age refers to the age a student in a given ISCED level would be expected to have based on the theoretical entrance age and the theoretical (expected) duration.

Total public expenditure on education
 The sum of the expenditure on education and education administration made by central governments.

Unemployment
Unemployed person is any person of (15+) years of age who is without work or job, able to work, is available for work and looking for it at reference period.

Vocational Education
See vocational secondary education. This term applies to vocational training in some Arab countries (Syria and Lebanon).

Vocational Education Streams
Streams that are available in vocational education such as : industrial education, agricultural education, postal education, nursing (paramedical) education… etc.

Vocational Secondary Education
One of the comprehensive secondary education streams. Participants who meet the completion requirements sit for the general examination / vocational stream. Those who pass the examination have the right to join higher education institution in specific specialisations.

Vocational Training	
Training which aims to equip people with skills and competence that can be used in the labour market.	
Withdrawal	
Any registered student/trainee who paid the fees and did not participate in the education or training.	
Working age	
The working age in Jordan is 15-60 for the male population and 15-55 for the female population.	
Youth unemployment	
The term youth is defined as comprising persons aged (15-24) years.	

3. Some examples of calculated indicators

Ind. No	Indicators	2001/2002	2002/2003	2003/2004
				Years
1	Educational attainment (15 years+) by age and sex.	See table No (1)		See table No (2)
2-a	Employment rates by educational level and sex.			See table No (3)
2-b	Unemployment rates by age, sex and educational levels.			See table No (4)
3	Gross domestic product per capita. (JD)	1337	1385	1534
4	Participation rates in TVET as percentage of all participants of education/ training (%)	4.1	4.1	
5	Participation rates in TVET in institution as a percentage of all participants of education/ training (VTC) (%)	0.4	0.4	
5	Participation rates in TVET in institution as a percentage of all participants of education/ training(MOE) (%)	2.0	2.0	
5	Participation rates in TVET in institution as a percentage of all participants of education/ training (BAU) (%)	1.7	1.8	
6	Percentage of apprentices to total TVET participants . (%)	9.0	11.6	
7	Distribution of apprentices by sex and specialization (number or percentage) to total participants. (%)			
8	Percentage of vocational education students to total TVET participants (%)	48.4	49.8	
9	Distribution (number or percentage) of vocational education students by sex and type of education. (Numbers)	See table No (5)	See table No (5)	
10	Percentage of students in technical/ technician education to total TVET participants. (%)	42.6	38.6	
11	Distribution (number or percentage) of participants in technical / technician education by sex, age and specialisation. (%)		See table No (6)	

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Jordanian Population Age 15+ Years by Educational Level, Sex & Broad Age Groups Year 2002 (%)

Sex & Broad Age Groups	Educational Level									
	Total	1	2	3	4	5	6	7	8	9
Total	**100**	**10.3**	**5.4**	**12.7**	**17.4**	**17.9**	**0.8**	**18.0**	**8.3**	**9.2**
15-19	**100**	1.3	1.2	10.1	20.2	48.9	0.5	17.7	0.1	0.0
20-24	**100**	1.8	2.1	8.1	5.2	30.7	1.7	34.5	7.3	8.6
25-39	**100**	3.4	3.5	13.2	25.0	8.4	1.2	16.7	15.0	13.5
40-54	**100**	15.3	8.9	18.3	19.6	0.0	0.2	13.3	10.7	13.6
55-64	**100**	35.2	14.0	17.1	11.0	0.0	0.1	7.7	3.9	11.1
65+	**100**	57.6	18.7	11.2	4.9	0.0	0.0	3.0	1.1	3.5
Male	**100**	**5.4**	**5.8**	**13.8**	**18.4**	**19.2**	**1.5**	**17.5**	**6.7**	**11.7**
15-19	**100**	1.3	1.3	10.6	20.4	50.8	0.9	14.6	0.1	0.0
20-24	**100**	1.7	2.4	9.3	5.8	32.9	3.0	32.8	4.4	7.8
25-39	**100**	2.0	3.2	13.7	25.9	8.4	2.1	16.5	11.7	16.4
40-54	**100**	5.4	7.2	18.5	21.9	0.0	0.4	14.6	10.8	21.1
55-64	**100**	14.7	14.8	22.4	14.6	0.0	0.2	9.1	5.1	19.2
65+	**100**	36.4	28.8	16.3	7.1	0.0	0.0	4.1	1.6	5.7
Female	**100**	**15.2**	**5.0**	**11.5**	**16.5**	**16.6**	**0.2**	**18.5**	**10.0**	**6.6**
15-19	**100**	1.2	1.2	9.6	19.9	46.8	0.0	21.1	0.2	0.0
20-24	**100**	1.9	1.7	6.7	4.5	28.0	0.3	36.6	10.7	9.6
25-39	**100**	4.7	3.8	12.7	24.1	8.4	0.4	16.9	18.3	10.7
40-54	**100**	24.0	10.4	18.1	17.6	0.0	0.0	12.2	10.6	7.1
55-64	**100**	57.3	13.2	11.3	7.2	0.0	0.0	6.1	2.5	2.3
65+	**100**	82.0	7.1	5.4	2.3	0.0	0.0	1.8	0.6	0.8

Educational Level 1= Illiterate**, 2 =** Read & Write, 3 = Elementary**, 4 =** Preparatory**, 5 =** Basic Education, 6 = Vocational Apprentice-Ship**, 7 =** Secondary**, 8 =** Intermediate Diploma**, 9 =** Bachelor & Above

Sources : DOS. Annual Report Of Employment and Unemployment Survey 2002

Table No (2)

Jordanian Population Age 15+ Years by Educational Level, Sex & Broad Age Groups Year 2004 (%)

Sex & Broad Age Groups	Total	Educational Level								
		1	2	3	4	5	6	7	8	9
Total	100	10.3	4. 4	12.6	18.0	19.7	0.7	17.0	8.0	9.4
15-19	100	1.2	1.0	14.2	21.2	48.5	0.5	13.4	0.0	0.0
20-24	100	1.7	1.4	6.7	4.8	32.8	1.4	35.7	6.5	9.0
25-39	100	3.4	2.7	11.6	23.1	14.4	0.9	16.0	13.6	14.2
40-54	100	13.7	6.6	17.1	23.8	0.0	0.4	13.7	11.9	12.8
55-64	100	36.1	11.9	16.8	12.8	0.0	0.1	7.6	4.4	10.4
65+	100	565	16.1	11.2	7.9	0.0	0.0	2.9	1.3	4.2
Male	100	5.6	4.7	14.1	18.7	21.1	1.3	16.4	6.6	11.5
15-19	100	1.5	1.2	15.6	20.2	49.3	0.9	11.2	0.0	0.0
20-24	100	1.7	1.4	8.1	5.5	36.5	2.6	33.7	3.3	7.2
25-39	100	2.1	2.5	12.7	23.9	14.7	1,6	15.1	10.6	16.6
40-54	100	4.9	5.1	16.9	26.0	0.0	0.7	14.7	12.6	19.0
55-64	100	13.5	13.1	21.7	16.7	0.0	0.3	9.9	6.6	18.3
65+	100	37.2	22.7	16.9	10.9	0.0	0.0	3.2	1.6	7.4
Female	100	15.1	4.1	11.0	17.2	18.2	0.1	17.5	9.4	7.3
15-19	100	0.9	0.7	12.6	22.2	47.6	0.0	15.8	0.0	0.0
20-24	100	1.6	1.3	5.0	4.0	28.5	0.1	38.0	10.3	11.1
25-39	100	4.6	2.9	10.5	22.3	14.1	0.2	16.8	16.5	12.0
40-54	100	21.8	8.0	17.2	21.7	0.0	0.1	12.8	11.3	7.1
55-64	100	58.4	10.7	11.9	8.9	0.0	0.0	5.4	2.2	2.5
65+	100	79.1	8.3	4.5	4.3	0.0	0.0	2.4	1.0	0.4

Educational Level 1= Illiterate**, 2 =** Read & Write, 3 = Elementary**, 4 =** Preparatory**, 5 =** Basic Education, 6 = Vocational Apprentice-Ship**, 7 =** Secondary**, 8 =** Intermediate Diploma**, 9 =** Bachelor & Above

Sources : DOS. Annual Report Of Employment and Unemployment Survey 2004

Table No (3)

Employment rates by educational level and sex, 2004

| | | Participation Rate | | | | | | | | | | | |
		Illiterate	Read & Write	Primary	Basic Education	Preparatory	Vocational Apprenticeship	Secondary	Intermediate Diploma	Bachelor	Higher Diploma	Master	Ph.d
Male		33.04	52.66	61.70	60.64	66.56	88.61	52.67	87.53	86.36	85.67	81.71	86.72
	15-19	39.15	80.62	30.08	25.09	13.50	68.44	14.52	100.00				
	20-24	48.60	93.31	89.74	89.17	91.95	92.67	27.88	94.91	83.43		100.00	
	25-29	72.57	87.94	94.73	96.05	92.21	91.67	79.22	94.68	94.91	100.00	90.68	100.00
	30-34	49.85	99.18	90.47	98.38	96.70	89.91	96.67	97.28	97.95	100.00	91.42	100.00
	35-39	79.32	88.91	90.66		91.51	100.00	94.72	96.67	99.85	100.00	95.44	100.00
	40-44	74.32	84.64	83.57		86.49	100.00	89.77	94.72	94.60	100.00	100.00	100.00
	45-49	77.18	77.79	72.21		77.27	67.82	88.86	87.68	90.63	100.00	90.66	100.00
	50-54	52.15	58.96	54.05		67.96	53.13	76.01	68.35	82.62	94.40	85.26	100.00
	+55	17.22	26.78	28.80		32.80	76.33	35.20	33.00	49.09	48.78	36.54	68.03
Female		1.47	2.24	1.91	4.38	2.98	14.05	6.88	30.34	60.67	64.34	73.76	78.56
	15-19	1.66	2.06	0.80	0.94	0.52		1.90	0.00				
	20-24	7.20	6.54	4.98	8.40	3.17	56.02	4.72	40.55	65.25			
	25-29	6.66	3.88	3.49	7.15	4.28	12.70	10.70	32.77	68.58	100.00	94.93	
	30-34	2.43	3.17	2.74	6.64	4.96	0.00	13.04	30.48	61.19	100.00	47.38	100.00
	35-39	5.72	1.90	2.67		3.11		14.78	27.26	61.58	100.00	81.40	100.00
	40-44	2.40	5.37	1.54		3.84		7.66	30.72	50.46	49.01	100.00	100.00
	45-49	2.55	3.87	0.29		4.62	0.00	5.37	22.03	42.62	12.26	81.66	0.00
	50-54	1.19	0.00	2.29		1.64		2.96	17.77	30.17		100.00	39.71
	+55	0.52	0.20	0.67		2.34		2.49	1.65	15.00		0.00	100.00

Table No (4)

Jordanian Unemployed Persons Age 15+ Years by Sex and Educational Level-2004

Educational Level	Sex		
	Total	Male	Female
Total	2204	1805	399
Percent	100	100	100
Illiterate	2	2,3	0,5
Less Than Secondary	58,6	69,3	10,3
Secondary	10	10,3	8,5
Intermediate Diploma	11	6,1	33,3
Bachelor & Above	18,4	12	47,4

Note: Slight differences in the totals of some tables are due to weighting procedures and rounding of figure
Sources: **DOS.** Annual Report Of Employment and Unemployment Survey 2004

Table No (5)
Distribution of students enrolled to vocational education by type of education and sex for the year 2001/2002

Type of education	Male	Female	Total
Commercial	5051	4979	10030
Agricultural	1218	211	1429
Industrial	8790	16	8806
Nursing	735	1698	2433
Hotel	2577	0	2577
Home economics	63	7736	7799
Total	18434	14640	33074

Sources: **MOE.** The educational Statistical Report 2001/2002

Distribution of students enrolled to vocational education by type of education and sex for the year 2002/2003

Type of education	Male	Female	Total
Commercial	5140	5567	10707
Agricultural	1250	206	1456
Industrial	9250	53	9303
Nursing	758	1778	2536
Hotel	2503	0	2503
Home economics	67	8283	8350
Total	18968	15887	34855

Sources: **MOE.** The educational Statistical Report 2002/2003

Table No (6)

Distribution of students enrolled to technician education by programme and sex for the year 2002/2003 (%)

Programme	Male	Female	Total
Languages	0.1	0.4	0.3
Education	1.1	25.8	16.7
Engineering	23.5	1.8	9.8
Agriculture	1.3	0.6	0.9
Para-medical	16.0	13.9	17.8
Administrative and finance	30.1	32.6	31.7
Information management	12.4	11.5	11.9
Hotel management	8.5	0.5	3.3
Applied fine arts	5.4	5.1	5.2
Applied science	0.1	0.4	0.3
Social workers	1.5	7.3	5.1
Total	100	100	100

Sources: MOHE. Annual Statistical Report on Higher Education in Jordan for the year 2002/2003