



The Hashemite Kingdom of Jordan

Amman- Jordan

**Jordan
Experience In
Developing
TVET
Indicators**

April 20
2010

7th international conference on quality management in
the system of education and training

**CIMQUSEF'2010
The
Management of
Education and
Training by the
Indicators**

**Eng. Nahida El-Saies
TVET Specialist
Ministry of Labour**

Context

| | |
|--|----|
| i. Over view | 3 |
| ii. Definition of an indicator: | 4 |
| iii. Developing TVET indicators | 4 |
| 3.1. Defining the objectives of the education and training policy | 4 |
| 3.2. Methodology for building the indicator handbook targeted policy makers. | 5 |
| 3.3. Moving from objectives to indicators | 5 |
| 3.4. Number of indicators developed in the handbook | 5 |
| 3.5. Classification of the indicators | 5 |
| 3.6. Steps for building Jordan TVET indicators | 6 |
| 3.7. Census and sources of the data | 7 |
| 3.4. Calculation | 7 |
| iv. Using the handbook of Indicators | 8 |
| v. Applying TVET indicators | 9 |
| vi. Annex 1 | 10 |
| vii. Annex 2 | 13 |

Jordan Experience In Developing TVET Indicators

Over view

ETF expressed the concerns to the main TVET providers in Jordan 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 TVET strategies responding to LM needs.

With the technical assistant of the European Training Foundation through the Observatory Function project for Jordan, it was decided to develop a set of indicators for TVET sector taking into account all its components. ETF provided international expertise to support outstanding Jordanian efforts in an attempt to focus on TVET sector.

Jordan has three main TVET providers namely Vocational Training Corporation (VTC), Ministry of Education and 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.

Within the frame work of the project, it was decided to produce a handbook of TVET Indicators for Jordan focusing mainly on the following:

1)definitions, 2)methodology of indicators and to include some training tools to develop the Jordan indicator project.

The KPI's handbook has been prepared by a Technical Committee of experts from both Jordan stakeholders (I was a member of this Technical Committee representing Balqa Applied University) and ETF.

The Technical committee was set up under the leadership of the NCHRD in 2005 with representatives from the three main TVET providers Vocational Training Corporation (VTC), Al-Balqa Applied University (BAU), Ministry of Education (MOE), Department of Statistics, Social Security Corporation, the Chamber of Commerce and Industry

The Technical committee was in charge for the delivery of TVET Indicators, 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.

The major purpose for establishing the indicators is to contribute to an efficient decision-making process in the development of human resources policies and particularly to TVET strategies that respond to the needs of the labour market and employers.

The final goal is a sustainable process to elaborate scenarios and policy recommendations, ensuring complementarities between TVET providers and quality delivery of this information are at risk.

Definition of an indicator:

Indicator is a synthetic information item used to measure, evaluate and direct, the objective that supposed to measure.

A set of Indicators are tools that make it possible to comprehend the current state of a system (in this case the education system of vocational system), and to report on the current status to the entire vocational and technical education community, in other words the whole country.

an indicator is a set of information that elaborated so that an educational phenomenon can be studied, a list of indicators should not be a list of tables, the indicator should be a percentage of, or a ratio of number of students to teacher.

The characteristics of a good indicator:

- To be relevance;
- its ability to summarise the information without distorting it;
- Coordinated and structured character, which allows it to be linked to other indicators for a global analysis of the system;
- Accurate and comparable;
- Reliability.

It must be able to:

- measure a period of time 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, a norm, and to itself calculated for another period of observation.

Indicators play a fundamental role in directing and evaluating an education system, and provide an analysis of the various phenomena with points of comparison.

Furthermore, 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.

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

Developing TVET indicators

1. Defining the objectives of the education and training policy or plan

The Technical Committee in Jordan worked in this project extracted the objectives for the TVET system in Jordan from national policy documents.

Five major operational objectives were derived from the main National Policy documents to define indicators these objectives were as the following:

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

2. Methodology for building the indicator handbook targeted policy makers.

It was impossible to build the indicators without good information system. This was obvious and should have many references to the information system. But when building the indicators for targeted policy makers, we identified what they are interested in, and to move from policy relevant objectives to indicators.

3. 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 developed as a second phase in 2006) in a series of meetings throughout 2005. The Technical Committee met many times to identify the major objectives and derive the relevant indicators.

The Jordan Technical Committee was supported in this work by ETF experts through occasional workshops hosted by NCHRD.

4. Number of indicators in the handbook

From the Jordan Technical Committee experience by developing the indicators it was recognized that not more than 40 indicators should be used as the document is not readable if there are many more. If the number exceeds this ceiling it is recommended that it should be reduced, or should be split into several publications.

5. Classification of the indicators

In Jordan, the technical committee decided to classify the indicators 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 stage, no indicators were defined for the third category from above because there is no detailed data available about the mobility in the labour market.

In Jordan, the second category was divided by level of the vocational education and status:

- All TVET,
- Apprenticeship/ applied secondary education,
- Vocational education.

The fourth category was divided into two sub categories which show two different aspects:

- Access for equity groups,
- Performance/ Outcomes indicators.

From the experience it was recognized that it would be possible to construct a predictive indicators, on future requirements for teachers as an example, but only if 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, it was recognized that we should stress on the analysis of each indicator. It was very difficult part of the work, but it was clear for the committee that this part must be done if the indicators have to have any purpose.

Since building indicators should be finished within a period of 18 months to 2 years,

In Jordan, the committee spent the first year to produce the handbook in identifying strategic objectives and defining the indicators. The second year was spent to produce a document analysing the trends and current situation for each defined indicator.

6. Steps for building Jordan TVET indicators

There were several steps of work when developing the Jordanian TVET indicators. First: identifying the availability of data. The second step, which involves calculation of the indicator, 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 on 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 as: verifying the consistency of outcomes, analysis of indicators, and the format of the document using the calculations.

7. Census and sources of the data

All sources of data that used by the committee were identified.

Most data on education, and particularly on vocational education, came from annual school censuses and staff surveys, examination results and infrastructures. Some were internally ministry of education data, and some were from the Department of statistics data: although data on students and institutions are normally available at the statistical department, but often were kept at these employees' personnel offices.

Demographical data were very important as it is essential to have data by age for all years, and estimates were made for inter--census and post-census years.

Financial data come from the directorate with responsibility for financial matters, and from the Department of Statistics, many indicators were from the Gross Domestic Product and other data taken from an analysis of the State budget.

In the case of vocational training, it was clear to mobilise all the information available on formal, non--formal and informal training. It was necessary to define these terms. Also the information were taken according to the age group 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. Another important element in vocational training is to try to find out exactly how many people have taken part in these training schemes.

In Jordan, four main sources of data were used: Ministry of Education, the VTC, Al Balqa Applied University and Department of Statistics. 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 developing other sources of data.

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

8. 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 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

It was recognized 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 also calculated 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 the handbook gives a precise definition for each item.

Using the handbook of Indicators

There are many ways to use the Indicators 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 guide them to develop and to improve their own information system because during the process lack 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 was published, it was disseminated to all institutions. At the same time, the calculation process is continuing. As soon as an indicator were calculated, analyses of the indicators by build tables and graph to present it in a simple way-to-read and easy-to-understand for non-specialist people.

Applying TVET indicators.

The TVET indicators in Jordan were grouped in five major groups:

1. context indicators,
2. indicators on participation,
3. achieving equitable outcomes,
4. rationalising investment in training and
5. maximising the value of public TVET expenditure.

The indicators in each group have been defined by the Jordan Technical Committee to measure progress towards the major objectives. 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.

Annex 1

The Jordan Experience

1. List of TVET Indicators in Jordan

| The TVET policy framework in Jordan | |
|---|--|
| Strategic Goals | |
| <input type="checkbox"/> | Enhancing the relevance between outputs of the education system and the requirements of social and economic development. |
| <input type="checkbox"/> | Continuing the development of the infrastructure of general and vocational education. |
| <input type="checkbox"/> | Developing the qualitative aspects and dimensions of general and vocational education. |
| <input type="checkbox"/> | Improving the efficiency and effectiveness of the education system, with special emphasis on the economics of education, including its inputs, operations and outputs. |
| <input type="checkbox"/> | Promoting the democracy of education, and fostering its role in social mobility. |
| <input type="checkbox"/> | 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 | |
| <input type="checkbox"/> | Equipping Jordanians for the world of work either waged or through self-employment. |
| <input type="checkbox"/> | Enhancing upper and horizontal mobility in the labour market. |
| <input type="checkbox"/> | Achieving equitable outcomes in TVET |
| <input type="checkbox"/> | Rationalisation of investment in training |
| <input type="checkbox"/> | 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. |
| 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 |

| The TVET policy framework in Jordan | |
|--|---|
| | 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 | |
| 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 |

| The TVET policy framework in Jordan | |
|--|--|
| 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. |

Annex 2

Example

TVET indicators: Major objectives, definitions, data required, 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**

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