What do we mean by NFE data analysis?

- Data analysis is at the heart of the NFE-MIS
- Data analysis is done in response to the questions and concerns of the information users
- Examination of raw data allows one to identify and describe different NFE-related trends and patterns
- Appropriate policy recommendations and effective programme monitoring and evaluation are the result
Process toward better decision making

Policy Objectives → Research Questions → Indicators

Data analysis and interpretation → Production of data outputs (raw data) → Data collection

How to relate data on analysis of NFE issues

<table>
<thead>
<tr>
<th>Policy Objective</th>
<th>Research Question</th>
<th>Indicators</th>
<th>Calculation: Data required to calculate the indicator</th>
<th>Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Making the education system more efficient</td>
<td>Are there many drop-outs? Or, What is the number of completers?</td>
<td>Internal efficiency of a NFE activity (Ratio of completed/enrolled learners, by type of NFE activity)</td>
<td>The ratio is high, this indicates that the activity has been efficient.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Number of completed learners (by type of NFE activity) divided by the number of enrolled learners (by type of NFE activity)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Learning time intensity rate (Average number of contact hours by learners, by NFE activity)</td>
<td>Total number of learner contact hours, divided by the total number of learners (by NFE activity)</td>
<td>In principle, if the average number of learner contact hours is high, the efficiency of the activity is high. However, this is not the only factor for efficiency.</td>
</tr>
</tbody>
</table>
Analytical questions for information in Non-formal Education

- What are the levels of demand for different types of NFE activities?
- Who and where are the potential learners?
- Where and how are the existing NFE opportunities?
- What are the levels and patterns of participation?
- Who participates in the various NFE courses?
- What are the past and current levels of resources input into NFE activities?
- How efficiently and effectively have the resources input been utilized?

Analytical questions for information in Non-formal Education

- What were the learning impact in terms of personal growth and well-being, employment, and other socio-economic-cultural development?
- Does supply match demand? What are the gaps, problems and possible solutions?
- What measures and actions could be taken in order to solve the problems, coordinate the NFE activities, promote support to them, increase participation and improve their relevance and impact on overall development?
The Basic Statistical Measurement Unit refers to *individual program* organized to provide NFE. Agencies and institutions offering several different NFE programs should provide information separately on each program on the following aspects:

- **AGENCY**
- **INSTITUTION**
- **PROGRAMME**
- **LEARNERS**
- **TEACHERS**
- **MATERIAL**
- **FINANCES**

**Methods of Analysis**

- Descriptive Statistics
- Causal-Effect Relationships
- Projections and Simulations
Descriptive Statistics

- Refers to analysis of raw data that examines both the absolute figures and derived statistics including all kinds of indicators
  - Absolute figures,
  - rates, ratios, percentages
  - frequency distributions, and
  - measures of dispersion
- Tables, charts, graphs, maps, organigrams, etc.
- Identifying trends, patterns, gaps and disparities

Causal-Effect Analysis

- Refers to relationships between two or more variables
  - Statistical tests
  - Correlations
  - Regression analysis
  - Multivariate analysis
- Identifying specific patterns, factors and tendencies influencing participation, performance, outcome and impact.
Projections and Simulations

- Refers to forecasts of likely trends and patterns in a variable during a given period of time
- Short-term, Medium-term and long-term planning of NFE programmes and activities

Presenting data

**Flat table**
- 'Flat' tables - can be used to show how a series of variables are distributed along one dimension, i.e. one NFE core category.
- They can be constructed in such a way that certain variables can be disaggregated in terms of absolute numbers or in derived quantities.

**Cross-tabulations reports**
- More complex or sophisticated than 'flat' tables in that data is presented or calculated along two (rather than one) dimensions.
- You can use a cross-tabulation report to know how a specific distribution variable is spread across two core NFE categories.
Qualitative data

- Depending on your information needs, qualitative data may be of particular interest to your information users.
- Qualitative data may be used for assessing the qualitative challenges, gaps and change in the sub-sector. This includes use in:
  - Planning and organisation of research studies for the qualitative improvement of education in such areas as curriculum, instructional methods, training of educators, evaluation of learners’ performance, etc.;
  - Development of indicators of performance;
  - Providing information and feedback to policy makers concerned with relevance and quality of NFE activities.

Distribution by type of NFE target group, calculated in absolute numbers

<table>
<thead>
<tr>
<th>Type of NFE target group</th>
<th>No. of total Courses</th>
<th>No. of learners</th>
<th>No. of total learner-contact hours</th>
<th>Total expenditure</th>
<th>Average no. of contact hours</th>
<th>Average expenditure per contact hour</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male (1)</td>
<td>Female (2)</td>
<td>Total (1+2)</td>
<td>Male (4)</td>
<td>Female (5)</td>
<td>Total (4+5)</td>
</tr>
<tr>
<td>Male</td>
<td>150</td>
<td>150</td>
<td>300</td>
<td>124000</td>
<td>124000</td>
<td>248000</td>
</tr>
<tr>
<td>Female</td>
<td>250</td>
<td>250</td>
<td>500</td>
<td>240000</td>
<td>240000</td>
<td>480000</td>
</tr>
<tr>
<td>Marginalised students</td>
<td>100</td>
<td>100</td>
<td>200</td>
<td>460000</td>
<td>460000</td>
<td>920000</td>
</tr>
<tr>
<td>Marginalised students and orphans</td>
<td>5</td>
<td>5</td>
<td>10</td>
<td>124000</td>
<td>124000</td>
<td>248000</td>
</tr>
<tr>
<td>Orphans and girls</td>
<td>100</td>
<td>100</td>
<td>200</td>
<td>120000</td>
<td>120000</td>
<td>240000</td>
</tr>
<tr>
<td>Rural poor</td>
<td>3</td>
<td>45</td>
<td>48</td>
<td>2250</td>
<td>750</td>
<td>3000</td>
</tr>
<tr>
<td>Urban poor</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Other minority ethnic</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Persons living in urban slums</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>TOTAL</td>
<td>170</td>
<td>1200</td>
<td>2370</td>
<td>2788000</td>
<td>2788000</td>
<td>5575000</td>
</tr>
</tbody>
</table>
Distribution by type of target group, calculated in percentages

<table>
<thead>
<tr>
<th>Type of main target group</th>
<th>% of total Courses (1)</th>
<th>% of learners Male (2)</th>
<th>% of learners Female (3)</th>
<th>% of total learner-contact hours Male (4)</th>
<th>% of total learner-contact hours Female (5)</th>
<th>% of total expenditure Male (6)</th>
<th>% of total expenditure Female (7)</th>
<th>% of total expenditure (8)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adult learners</td>
<td>20.5%</td>
<td>21.8%</td>
<td>19.2%</td>
<td>69.0%</td>
<td>59.0%</td>
<td>51.9%</td>
<td>51.9%</td>
<td>51.9%</td>
</tr>
<tr>
<td>Literacy (basic level)</td>
<td>8.5%</td>
<td>7.5%</td>
<td>9.5%</td>
<td>69.4%</td>
<td>59.1%</td>
<td>51.5%</td>
<td>51.5%</td>
<td>51.5%</td>
</tr>
<tr>
<td>Literacy (advanced level)</td>
<td>14.9%</td>
<td>16.7%</td>
<td>13.1%</td>
<td>63.0%</td>
<td>53.1%</td>
<td>47.5%</td>
<td>47.5%</td>
<td>47.5%</td>
</tr>
<tr>
<td>Educated children and school children</td>
<td>46.6%</td>
<td>43.5%</td>
<td>49.6%</td>
<td>58.6%</td>
<td>50.6%</td>
<td>15.6%</td>
<td>15.6%</td>
<td>15.6%</td>
</tr>
<tr>
<td>Marginalised minorities and orphans</td>
<td>2.0%</td>
<td>1.1%</td>
<td>2.4%</td>
<td>2.5%</td>
<td>0.3%</td>
<td>0.3%</td>
<td>0.3%</td>
<td>0.3%</td>
</tr>
<tr>
<td>Women and girls</td>
<td>4.6%</td>
<td>4.0%</td>
<td>50.0%</td>
<td>92.1%</td>
<td>84.1%</td>
<td>16.9%</td>
<td>16.9%</td>
<td>16.9%</td>
</tr>
<tr>
<td>First year</td>
<td>1.6%</td>
<td>1.5%</td>
<td>0.7%</td>
<td>1.7%</td>
<td>0.4%</td>
<td>0.3%</td>
<td>0.3%</td>
<td>0.3%</td>
</tr>
<tr>
<td>Urban poor</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Ethnic linguistic minority groups</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Groups living in special circumstances</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

The variables described in the table:

- **Number of Courses** refers to the quantity of Courses offered by type of NFE category.
- **Number of learners** refers to the number of learners enrolled by type of target group
- **Number of learner-contact hours** is a variable that takes into account both the number of learners as well as the number of instruction hours
- **Total expenditure** refers to the total amount of money received by type of target group or type of activity
- The average number of contact hours per learner is calculated by dividing the total number of learner-contact hours by the total number of learners
- **Average expenditure per learner-contact hour** refers to the average amount of money received per learner-contact hour
Disaggregation and calculation of totals

- Variables can be disaggregated by gender, be it in terms of absolute numbers or in derived quantities.

- In the examples, the ‘number of learners’ variable, is presented not only in terms of the total number (column 4) but also for the male and female population, separately (columns 2 and 3).

- The same is done for the ‘learner-contact hours’ variable.

Answering policy questions

- Policy objective – Reaching xxx number of learners belonging to given categories

- Information needs addressed by question – Volume of provision per type of target group

- Measured in absolute numbers, which are the three main target groups in terms of the number of Courses?

- What percentages do the three main target groups represent of the total in terms of the number of Courses?

- Which are the three main target groups in terms of the total number of learners?

- What percentages do they represent of the total?
Answering policy questions

- Which are the three main target groups in terms of the number of the total learner contact hours? What percentages do they represent of the total?
- How do the results for total number of learners compare to those of total number of learner-contact hours?
- Which are the three main target groups in terms of the share of the total expenditure?

Questions indicate that, depending on the distribution variable used, there is some variation as to which the main target groups are and what their order of importance is. Such information can help to analyse if the policy objective has been reached.

Answering policy questions

- Policy objective – To achieve gender equity in access and participation in NFE activities
- Information need addressed by question – Gap and evolution in access and participation of female learners in NFE activities by type of target group
  - In terms of the different target groups, are enrolment rates measured in absolute numbers, higher for male or female learners?
  - For which target group are discrepancies in terms of gender the largest?
  - How do the learner-contact hours for male learners compare to those of female learners?
  - Which is the main target group in terms learner-contact hours?
  - Do the overall results by gender correspond to what was planned?
  - Does the distribution by target group correspond to what was planned?
Answering policy questions

- Policy objective – Reaching priority target groups and responding to their priority learning needs
- Information need addressed by question – Intensity of Course provision by NFE target groups
  - What is the range in the distribution of the ‘total learners-contact hours’?
  - According to the different distribution variables, what order of importance are the different target groups given?

Simple guide to the analysis

- Identify the issue (Research question)
- Find out an appropriate data, indicators
- Check the data
  - Accuracy
  - Source
- Choose an appropriate presentation based on the intended purpose
  - Table
  - Chart/Graph
  - Map
- Decide what you want to find out from the data (pattern, gap, trend)
- One to five conclusions per presentation
  - Informative
  - Succinct
  - Clear
In the manual

- There is a chapter (Module 6 – Guidelines for Data Production, Analysis and Dissemination) describing all these process in more details with various examples to
  - familiarize you with the different data outputs that the NFEMIS can produce.
  - explain what type of questions or information needs can be addressed by analyzing the data outputs.
  - show how data reports can be interpreted.

Who are the users

- It should be used by the educational planners and statisticians that are part of a national NFE-MIS Team.
- They should work in collaboration with the sub-national NFE-MIS team in making sure that the final NFE-MIS document responds to the information needs that were identified at sub-national level.
Checklist for project managers

Following is the checklist for UNESCO staff, facilitating the NFEMIS project at the country level.
- Too many data are collected, and too little information are produced
- Clear time frame and schedule of the producing reports
- Building capacity in analysis and producing reports
- Quality and contents of the reports
- Actual utilization of the reports and their analysis
- Response and feedback from other stakeholders
- Adequate budgets for production and dissemination

Areas of support and collaboration

- Capacity building
- Advisory services and support on preparation of the analysis and reports
- Facilitation in sharing and exchanging of experience and information
- Promotion of awareness and orientation to the local stakeholders