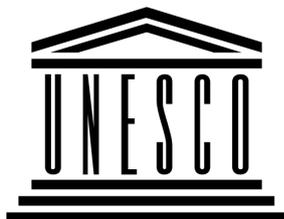




**END-OF-PROJECT EVALUATION OF THE EUROPEAN-UNION FUNDED PROJECT  
"TECHNICAL ASSISTANCE TO ENHANCE ACCESSIBILITY AND USE OF THE  
JORDANIAN MOE EMIS FOR EVIDENCE-BASED POLICY FORMULATION"**

**FINAL REPORT**

Prepared by Altai Consulting for UNESCO | Jordan – DECEMBER 2017



United Nations  
Educational, Scientific and  
Cultural Organization



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# 1. EXECUTIVE SUMMARY

The OpenEMIS project made a strong contribution to its overall development objective of improving education planning and management in Jordan – both through the core OpenEMIS workstream and through the additional technical advisory services rendered in the second half of the project. The project also made a strong contribution to its immediate objective of establishing a government-owned, cost effective Education Decision Support System, without fully realizing it in practice.

The OpenEMIS system provides a comprehensive set of tools for aggregating, analyzing, reporting on and disseminating educational data in Jordan and supporting evidence-based policy-making at central, regional and school levels. The OpenEMIS platform has been adapted to the Jordanian educational system and full customized to meet the needs of MoE. It has been successfully rolled out across the country, data collection processes are established, and numerous external sources attest to the accuracy of the data. A variety of reporting and data visualization tools are available, and the system is integrated with other public-sector databases. Yet while the core MoE team can manage some components of OpenEMIS independently, MoE does not have the capacity to autonomously sustain the use of the system. In particular, the core MoE EMIS team is not yet self-sufficient in fully exploiting the system's various reporting functionalities, so the extent to which the EMIS is being used to its full potential for evidence-based policy-making in MoE is limited. However, significant progress was made in accelerating capacity building and knowledge transfer in the latter stages of the project, and the ground has also been prepared for focusing on these areas in Phase Two of the project.

The additional 'Complementary Technical Advisory Services' project component made a strong contribution to improving education planning and management in Jordan by allowing MoE to request support in specific priority areas. Capacity gaps also remain in certain areas addressed – notably on the exploitation of the GIS platform to its full potential. But these can be addressed in the second phase of the project, and the overall impact of the technical advisory services is nonetheless assessed to be strong.

The project's contribution to improving education management and planning in Jordan should also be seen within the wider education sector and national context. UNESCO is currently supporting the MoE in developing a five-year Education Sector Plan (ESP), which should be finalized by the end of 2017. With additional capacity building and support to MoE, the enhanced EMIS should strengthen the implementation of the ESP by providing the basis for the effective monitoring of key indicators and the assessment of education sector performance. More broadly, given the large investments being made by international donors in Jordan's education sector (particularly in the areas of school-building and budgetary support to bolster the country's resilience to the impacts of the large influx of Syrian refugees), MoE is under considerable pressure to provide data to justify funding requests and demonstrate achievements. The OpenEMIS project – and particularly its aggregation and dissemination of data on Syrian refugees in Jordanian schools – has made a strong contribution to allowing MoE to meet these demands.

The OpenEMIS project was highly relevant to the beneficiaries' needs and the project model was contextually appropriate – although the time and resources needed to train key MoE stakeholders and build capacity on the management and use of the system was underestimated. The project made a strong effort to adapt and respond to changes in the internal and external context, some of which negatively influenced the implementation of the core OpenEMIS elements of the project, resulting in delays. The UNESCO core project team's resources appear to have been used efficiently, but there were some inefficiencies in how CSF resources were deployed. The amount of work delivered under the project is considerable, and as such cost efficiency is assessed to be good. UNESCO's planning, management and coordination of the project was adequate overall, although certain areas could have been improved – in particular the project's M&E strategy. Beneficiaries were overall satisfied with the services delivered, but recognize the need for additional capacity building if the project's achievements are to be sustainable.

The evaluation identified the following key lessons learned:

1. The design of the project underestimated the magnitude of implementing OpenEMIS in a country of Jordan's size and the corresponding capacity building needs of MoE.
2. A disconnect between UNESCO/MoE's initial conception of OpenEMIS and the subsequent vision of other key MoE stakeholders for the system's purpose and functionality delayed and complicated OpenEMIS implementation.
3. A lack of clearly defined roles and responsibilities within MoE in relation to the EMIS negatively impacted project implementation and sustainability.
4. The project adapted well to unanticipated external developments, but these had an unavoidable negative impact on project implementation.
5. Top-level MoE engagement and support is crucial for the successful implementation and sustainability of a large-scale technical assistance project such as OpenEMIS.

The following recommendations are made for any future iteration of the project:

1. Continue building QRC's capacity to maintain and manage the core IT aspects of the OpenEMIS platform, but identify a more suitable MoE counterpart for strengthening the link between EMIS data and its utilization for evidence-based policy formulation.
2. Incorporate broader institutional support for building a culture of evidence-based policy making in MoE.
3. Conduct a comprehensive stakeholder consultation to ensure cross-MoE consensus on the primary features and functionalities of the OpenEMIS platform, and clarify institutional roles and responsibilities in relation to the EMIS.
4. Incorporate change management, communications and stakeholder management workstreams into the core project management component.
5. Ensure the project is coordinated and aligned with other donor support to MoE relating to planning, M&E, research and evidence-based policy making.

## 2. EVALUATION PURPOSE & SCOPE

UNESCO Amman in November 2017 commissioned Altai Consulting to conduct an End-of-Project Evaluation of the European Union-funded project 'Technical Assistance to Enhance Accessibility and Use of the Jordanian MoE EMIS for Evidence-based Policy Formulation.' The project began in February 2014 and concluded on 30 November 2017.

According to the Terms of Reference (ToR), the main purpose of the evaluation is to assess the performance (activities, outputs, outcomes) of the project and to generate lessons and recommendations for UNESCO to improve planning, implementation, management, and monitoring and evaluation of future similar interventions.

In addition, according to the ToR the evaluation should:

- Assess the achievements of the project outputs and target indicators towards the contribution to the outcomes
- Assess the effectiveness and efficacy of the project in meeting the stipulated results
- Draw lessons for improving the design and management of similar projects in the future including identifying issues encountered through implementation and identify the level of engagement and role of the program stakeholders
- Formulate recommendations for strengthening accountability; including exit strategy and sustainability mechanisms
- Consider the relevance, effectiveness, efficiency, impact and sustainability of the overall project
- Assess the extent to which gender considerations were mainstreamed in the project

## 3. EVALUATION METHODOLOGY

### 3.1. OVERVIEW OF EVALUATION METHODOLOGY

The methodology for this final evaluation comprises:

- **Review of secondary data.** This includes project documentation (including progress reports); EU, UNESCO and Government of Jordan strategic documentation; evaluations and assessments already carried out; and implementing partner surveys. A list of secondary data reviewed as part of the evaluation is provided in **Annex 1**.
- **Interviews with key project stakeholders and implementation and sub-contracted partners.** A list of interviewees is provided in **Annex 2**.
- **Field observation visits and interviews with beneficiaries at project implementation sites (selected Ministry of Education Field Directorates and schools) in Jordan.** A list of the Field Directorates and schools where field observation visits and interviews were conducted is provided in **Annex 3**. The interview guidelines that were used to structure interviews with beneficiaries are provided in **Annex 4**.

### 3.2. EVALUATION MATRIX

The matrix below sets out the evaluation areas and corresponding indicators, sources of data, data collection methods and data analysis techniques that form the basis of the evaluation methodology.

Table 1: Evaluation matrix

Evaluation area	Indicators	Sources of data	Data collection methods	Data analysis technique
<b>Development objective: To improve education planning and management in Jordan</b>	<b>Indicator 1:</b> Timely, relevant integrated education data available on demand for decision support	<ul style="list-style-type: none"> <li>• MoE (key project counterparts, Planning &amp; Research Department, QRC, ETC)</li> <li>• Beneficiaries (field directorates and schools)</li> <li>• Other key stakeholders (UNESCO, EU, partners)</li> <li>• Secondary data</li> </ul>	<ul style="list-style-type: none"> <li>• Qualitative interviews with key MoE stakeholders</li> <li>• Qualitative interviews with other key stakeholders (UNESCO, EU, partners)</li> <li>• Field observation visits and interviews with beneficiaries</li> <li>• Review of secondary data</li> </ul>	<ul style="list-style-type: none"> <li>• Qualitative analysis of interview output</li> <li>• Assessment of secondary data</li> </ul>
<b>Immediate objective: To establish a government-owned, cost-effective Education Decision Support System</b>	<b>Indicator 2:</b> Evidence of appropriate use of education decision-support system for improved planning and management	<ul style="list-style-type: none"> <li>• MoE (key project counterparts, Planning &amp; Research Department, QRC, ETC)</li> <li>• Beneficiaries (field directorates and schools)</li> </ul>	<ul style="list-style-type: none"> <li>• Qualitative interviews with key MoE stakeholders</li> <li>• Qualitative interviews with other key stakeholders (UNESCO, EU, partners)</li> <li>• Field observation visits and</li> </ul>	<ul style="list-style-type: none"> <li>• Qualitative analysis of interview output</li> <li>• Assessment of secondary data</li> </ul>

		<ul style="list-style-type: none"> <li>• Other key stakeholders (UNESCO, EU, partners)</li> <li>• Secondary data</li> </ul>	<p>interviews with beneficiaries</p> <ul style="list-style-type: none"> <li>• Review of secondary data</li> </ul>	
<p><b>Outputs/deliverables</b></p> <ul style="list-style-type: none"> <li>• Education analysis tools and products developed to assist key stakeholders in decision support with existing education data</li> <li>• An operational OpenEMIS with current data on institutions, students, teachers and staff</li> <li>• An integrated education decision support system established and used by education system in the country</li> </ul>	<p><b>Indicator 3:</b> OpenEMIS operational and owned by the government</p> <p><b>Indicator 4:</b> OpenEMIS administration team with the capacity to sustain the use of the system</p> <p><b>Indicator 5:</b> Launch of an integrated education decision support system with data from OpenEMIS and other relevant public-sector databases</p>	<ul style="list-style-type: none"> <li>• MoE (key project counterparts, Planning &amp; Research Department, QRC, ETC)</li> <li>• Beneficiaries (field directorates and schools)</li> <li>• Other key stakeholders (UNESCO, EU, partners)</li> <li>• Secondary data</li> </ul>	<ul style="list-style-type: none"> <li>• Qualitative interviews with key MoE stakeholders</li> <li>• Qualitative interviews with other key stakeholders (UNESCO, EU, partners)</li> <li>• Field observation visits and interviews with beneficiaries</li> <li>• Review of secondary data</li> </ul>	<ul style="list-style-type: none"> <li>• Qualitative analysis of interview output</li> <li>• Assessment of secondary data</li> </ul>
<p><b>Year 1 Activities</b></p>	<p><b>Indicator 6:</b> OpenEMIS loaded with existing education data</p> <p><b>Indicator 7:</b> OpenEMIS used with other data visualization and reporting tools to generate key planning and management reports</p> <p><b>Indicator 8:</b> A team of key of MoE officers trained in use of education data for better planning and management</p>	<ul style="list-style-type: none"> <li>• MoE (key project counterparts, Planning &amp; Research Department, QRC, ETC)</li> <li>• Beneficiaries (field directorates and schools)</li> <li>• Other key stakeholders (UNESCO, EU, partners)</li> <li>• Secondary data</li> </ul>	<ul style="list-style-type: none"> <li>• Qualitative interviews with key MoE stakeholders</li> <li>• Qualitative interviews with other key stakeholders (UNESCO, EU, partners)</li> <li>• Field observation visits and interviews with beneficiaries</li> <li>• Review of secondary data</li> </ul>	<ul style="list-style-type: none"> <li>• Qualitative analysis of interview output</li> <li>• Assessment of secondary data</li> </ul>
<p><b>Year 2 &amp; 3 Activities</b></p>	<p><b>Indicator 9:</b> OpenEMIS piloted in 50+ schools</p> <p><b>Indicator 10:</b> OpenEMIS scaled up to cover all schools, students, teachers and staff</p>	<ul style="list-style-type: none"> <li>• MoE (key project counterparts, Planning &amp; Research Department, QRC, ETC)</li> <li>• Beneficiaries (field directorates and schools)</li> <li>• Other key stakeholders (UNESCO, EU, partners)</li> <li>• Secondary data</li> </ul>	<ul style="list-style-type: none"> <li>• Qualitative interviews with key MoE stakeholders</li> <li>• Qualitative interviews with other key stakeholders (UNESCO, EU, partners)</li> <li>• Field observation visits and interviews with beneficiaries</li> <li>• Review of secondary data</li> </ul>	<ul style="list-style-type: none"> <li>• Qualitative analysis of interview output</li> <li>• Assessment of secondary data</li> </ul>
<p><b>Year 3 &amp; 4 Activities</b></p>	<p><b>Indicator 11:</b> OpenEMIS integrated with other public databases to</p>	<ul style="list-style-type: none"> <li>• MoE (key project counterparts, Planning &amp;</li> </ul>	<ul style="list-style-type: none"> <li>• Qualitative interviews with key MoE stakeholders</li> </ul>	<ul style="list-style-type: none"> <li>• Qualitative analysis of interview output</li> </ul>

	<p>establish an education decision-support system</p> <p><b>Indicator 12:</b> Education simulation modelling capacity building and training provided to government officers</p> <p><b>Indicator 13:</b> Availability of a reviewed National Teacher Professional Standards</p> <p><b>Indicator 14:</b> Availability of generic frameworks for teacher professional development and teacher induction and in-service programmes</p> <p><b>Indicator 15:</b> Availability of an Education Sector Financing report</p> <p><b>Indicator 16:</b> Availability of National Satellite Account for Education</p> <p><b>Indicator 17:</b> Availability of a cost simulation model</p> <p><b>Indicator 18:</b> Availability of a GIS platform to map education inequities, support decision-making for rationalization of the school network and teacher allocation across schools</p> <p><b>Indicator 19:</b> Availability of a workplan for implementation of MoE ICT strategy</p> <p><b>Indicator 20:</b> Availability of a MoE VE work plan for implementation of the decisions stemming from the National Conference on Human Resource Development Strategy</p> <p><b>Indicator 21:</b> 80% of MoE EMIS officers at central and regional level satisfactorily trained on their EMIS tasks</p>	<p>Research Department, QRC, ETC)</p> <ul style="list-style-type: none"> <li>• Beneficiaries (field directorates and schools)</li> <li>• Other key stakeholders (UNESCO, EU, partners)</li> <li>• Secondary data</li> </ul>	<ul style="list-style-type: none"> <li>• Qualitative interviews with other key stakeholders (UNESCO, EU, partners)</li> <li>• Field observation visits and interviews with beneficiaries</li> <li>• Review of secondary data</li> </ul>	<ul style="list-style-type: none"> <li>• Assessment of secondary data</li> </ul>
<p><b>OECD DAC Criteria</b></p> <ul style="list-style-type: none"> <li>• Relevance</li> <li>• Efficiency</li> <li>• Effectiveness</li> <li>• Impact</li> <li>• Sustainability</li> </ul>	<p>Please refer to <b>Annex 5: OECD DAC criteria indicative questions</b></p>	<ul style="list-style-type: none"> <li>• MoE (key project counterparts, Planning &amp; Research Department, QRC, ETC)</li> <li>• Beneficiaries (field</li> </ul>	<ul style="list-style-type: none"> <li>• Qualitative interviews with key MoE stakeholders</li> <li>• Qualitative interviews with other key stakeholders</li> </ul>	<ul style="list-style-type: none"> <li>• Qualitative analysis of interview output</li> <li>• Assessment of secondary data</li> </ul>

		directorates and schools) <ul style="list-style-type: none"> <li>• Other key stakeholders (UNESCO, EU, partners)</li> <li>• Secondary data</li> </ul>	(UNESCO, EU, partners) <ul style="list-style-type: none"> <li>• Field observation visits and interviews with beneficiaries</li> <li>• Review of secondary data</li> </ul>	
<b>Mainstreaming of gender considerations</b>	Gender considerations were adequately assessed and mainstreamed in project design and implementation	<ul style="list-style-type: none"> <li>• MoE (key project counterparts, Planning &amp; Research Department, QRC, ETC)</li> <li>• Beneficiaries (field directorates and schools)</li> <li>• Other key stakeholders (UNESCO, EU, partners)</li> <li>• Secondary data</li> </ul>	<ul style="list-style-type: none"> <li>• Qualitative interviews with key MoE stakeholders</li> <li>• Qualitative interviews with other key stakeholders (UNESCO, EU, partners)</li> <li>• Field observation visits and interviews with beneficiaries</li> <li>• Review of secondary data</li> </ul>	<ul style="list-style-type: none"> <li>• Qualitative analysis of interview output</li> <li>• Assessment of secondary data</li> </ul>

## 4. MAIN FINDINGS

### 4.1. DEVELOPMENT OBJECTIVE: TO IMPROVE EDUCATION PLANNING AND MANAGEMENT IN JORDAN

#### 4.1.1. ASSESSMENT OF DEVELOPMENT OBJECTIVE

**The project has made a strong contribution to the development objective of improving education planning and management in Jordan – both through the core OpenEMIS workstream spanning the duration of the project and through the additional technical advisory services rendered in Years 3 and 4.**

The enhanced EMIS system provides a comprehensive set of tools for aggregating, analyzing, reporting on and disseminating educational data in Jordan and supporting evidence-based policy-making at central and regional levels. Gaps exist in MoE's capacity to autonomously manage the system and utilize it to its full potential. However, significant progress was made in accelerating capacity building and knowledge transfer in the latter stages of the project, and the ground has also been prepared for focusing on these areas in Phase Two of the project.

The additional 'Complementary Technical Advisory Services' project component also made a strong contribution to improving education planning and management in Jordan by allowing MoE to request support in specific priority areas – from teacher professional development and education sector financing to developing a GIS platform and implementing the MoE ICT strategy. Some proposed areas of support under this project component were prematurely cancelled and some consultancies were less impactful than others. Capacity gaps also remain in certain areas addressed – notably on the exploitation of the GIS platform to its full potential. But these can be addressed in the new project, and the overall impact of the technical advisory services is nonetheless assessed to be strong.

The project's contribution to improving education management and planning in Jordan should also be seen within the wider education sector and national context. UNESCO is currently supporting the MoE in developing a five-year Education Sector Plan (ESP), which should be finalized by the end of 2017. The enhanced EMIS should strengthen the implementation of the ESP by providing the basis for the effective monitoring of key indicators and the assessment of education sector performance – although this will of course require further capacity building of key MoE stakeholders in the new project. The effective use of education sector data is also a key priority identified as part of the wider Education Reform for a Knowledge Economy (ERfKE) initiative. Finally, given the large investments being made by international donors in Jordan's education sector (particularly in the areas of school-building and budgetary support to bolster the country's resilience to the impacts of the large influx of Syrian refugees), MoE is under considerable pressure to provide data to justify funding requests and demonstrate achievements.<sup>1</sup> The OpenEMIS project – and particularly its aggregation and dissemination of data on Syrian refugees in Jordanian schools – has made a strong contribution to allowing MoE to meet these demands.

#### 4.1.2. ASSESSMENT OF DEVELOPMENT OBJECTIVE INDICATOR

**Indicator 1: Timely, relevant, integrated education data available on demand for decision support**

<sup>1</sup> Interview with Constanza Farina, Director of UNESCO Amman Office, 27 December 2017

<b>Basis for assessment</b>	
<ul style="list-style-type: none"> <li>• Secondary data</li> <li>• Interviews with key project stakeholders and implementation and sub-contracted partners</li> <li>• Field observation visits and interviews with beneficiaries at project implementation sites</li> </ul>	
<b>Assessment</b>	
<p>This indicator has been partially achieved: timely, relevant and integrated education data is available through the enhanced EMIS, although its systematic exploitation for decision support and evidence-based policy-making is yet to be fully realized.</p> <p>The education data available through the OpenEMIS platform is timely in that the system is updated with data from the 2016-2017 school year (and data collection for the 2017-2018 school year appears to be progressing well); relevant in that an extensive scoping phase and continuous customization of the system ensured the type and format of data is coherent with the Jordanian education system and meets MoE requirements; and integrated in that the OpenEMIS system is linked to a series of other relevant public-sector databases.</p> <p>That said, the core MoE EMIS team's limited capacity for producing custom reports and indicators for other MoE departments means that much of this data cannot in practice be said to be available on demand for the MoE at large. Consequently, the extent to which it is used to systematically support decision-making – beyond responding to ad hoc requests for data and the generation of a limited number of simple reports – is limited.</p>	
<b>Key activities</b>	<b>Achievements of key activities</b>
All	N/A

## 4.2. IMMEDIATE OBJECTIVE: TO ESTABLISH A GOVERNMENT-OWNED, COST-EFFECTIVE EDUCATION DECISION SUPPORT SYSTEM

### 4.2.1. ASSESSMENT OF IMMEDIATE OBJECTIVE

**The project made a strong contribution to its immediate objective of establishing a government-owned, cost-effective Education Decision Support System, without fully realizing it in practice.**

The OpenEMIS platform has been adapted to the Jordanian education system and fully customized to meet the needs of MoE, its roll-out across the country has been completed and the system is fully operational. A variety of reporting and data visualization tools are available, and the system is integrated with several other public-sector databases. The enhanced EMIS can be said to be government-owned in the sense that commitment to using the system appears to be strong at all levels.

Yet while the core MoE team can manage some components of OpenEMIS independently, MoE does not have the capacity to autonomously sustain the use of the system – meaning that it cannot be said to be completely government-owned. In particular, the core MoE EMIS team is not yet self-sufficient in fully exploiting the system's various reporting functionalities, so the extent to which the EMIS is being exploited to its full potential for evidence-based policy-making in MoE is limited.

While there are some costs to maintaining OpenEMIS, the OpenEMIS platform is more cost-effective than the previous EDUWAVE system, which cost MoE up to JD 500,000 per year to run and had much reduced functionality.<sup>2</sup>

#### 4.2.2. ASSESSMENT OF IMMEDIATE OBJECTIVE INDICATOR

Indicator 2: Evidence of appropriate use of education decision-support system for improved planning and management
<b>Basis for assessment</b>
<ul style="list-style-type: none"> <li>• Secondary data</li> <li>• Interviews with key project stakeholders and implementation and sub-contracted partners</li> <li>• Field observation visits and interviews with beneficiaries at project implementation sites</li> </ul>
<b>Assessment</b>
<p>This indicator has been partially achieved: there are many examples of the OpenEMIS platform being used to respond to ad hoc requests for data and generating a limited number of basic reports, as well as of workflows being used to facilitate some MoE administrative procedures; however, there is little evidence of the EMIS being used systematically for evidence-based policy formulation.</p> <p>The Head of the MoE Strategic Planning Department reported that the most important ways in which his department uses EMIS data is to determine whether a single-shift school should be upgraded to a double-shift school (through an indicator derived from the number of students in relation to the number of teachers and the sizes of classrooms), and to determine whether more schools need to be built in a particular area (through observing the number of double-shift schools in that area).<sup>3</sup></p> <p>The CSF EMIS Programme Advisor and Developer provided a number of examples of how EMIS data is regularly used to respond to ad hoc requests for data, including requests from the MoE Infrastructure Department for data about school buildings and infrastructure when they receive maintenance requests from schools, and regular requests from the MoE Donor Coordination Unit for data on Syrian refugees in schools. He also described how the QRC EMIS team had recently responded to a request from the Ministry of Youth for data on running water in school buildings in order to inform planning for holding youth camps in public school facilities. In terms of reporting, the CSF Developer noted that whenever the Minister for Education or senior MoE official visits a school, EMIS data is used to generate an 'Educational Status Report' compiling various data on the particular school.<sup>4</sup> The decision to use the OpenEMIS system as the repository for official data on Syrian refugees in Jordanian schools and the OpenEMIS system's role in assisting the Ministry of Finance in its disbursement of 20JD to every schoolchild on behalf of the King are further examples of the OpenEMIS system being used to respond to ad hoc data requests, albeit on a country-wide scale.</p> <p>At the Field Directorate level, staff interviewed reported using EMIS data to facilitate decision-making around allocating scholarships and aid to students, as well as around when to build new</p>

<sup>2</sup> Interview with Nilhan Siam, Jordan EMIS Programme Advisor/CSF 29 November 2017

<sup>3</sup> Interview with Dr. Abdullah Hassoneh, Head of MoE Strategic Planning Department, 28 November 2017

<sup>4</sup> Interview with Nilhan Siam, Jordan EMIS Programme Advisor/CSF 29 November 2017

classrooms and school buildings.<sup>5</sup> At the school level, OpenEMIS does not appear to play a prominent role in planning or management, although several principals reported that the system helps them to communicate with parents by being able to easily look up every student's grades. Some principals also reported using EMIS data to recommend students for scholarships.<sup>6</sup>

Yet numerous key project stakeholders interviewed reported that the EMIS is not being used systematically for evidence-based policy formulation, planning and management at the central level. This is partly due to a lack of capacity among the core MoE EMIS team. While core MoE EMIS team members have been given training in how to build custom reports, dashboards and visualizations, capacity is still relatively weak in this regard and the MoE EMIS team is as yet still not able to go beyond the limited number of pre-defined reports and dashboards and create custom reports for each MoE department.<sup>7</sup> The same is true for the development of custom indicators and KPIs that would facilitate the monitoring of sector performance at a more systematic and strategic level.

The weak link between the core technological aspects of the OpenEMIS system and the use of educational data to drive evidence-based decision-making in MoE may be related to the decision to transfer responsibility for the EMIS system from the Policy and Planning Department to the QRC. QRC is focused on data collection (for which it had responsibility under the previous EDUWAVE system) and the technical IT aspects of the OpenEMIS system, but largely lacks the capacity and perspective for generating custom reports and indicators and linking EMIS data to planning and decision-making processes.<sup>8</sup> At the same time, due to a combination of staff turnover, lack of capacity and lack of engagement with the OpenEMIS project among certain key stakeholders, the Policy and Planning Department is also not able to generate reports and drive the integration of EMIS data in MoE planning and decision-making processes.<sup>9</sup> A reported reluctance in QRC and the Policy and Planning Department to work with each other only serves to weaken the link between the core technological aspects of the system and the raw data on one hand, and reporting and the strategic use of data for evidence-based decision-making on the other.

Key activities	Achievements of key activities
All	N/A

<sup>5</sup> Interview with Liwa Bani Obeid Field Directorate, 28 November 2017; interview with Madaba Field Directorate, 29 November 2017

<sup>6</sup> Interview with Principle Um Tofayl Secondary School, Amman, 26 November 2017; interview with Principle, Al Hoson Secondary School, Irbid, 28 November 2017

<sup>7</sup> Interview with UNESCO Amman Project Team, 19 November 2017; Interview with Dr. Omar Al-Jarrah, Chair of OpenEMIS Technical Steering Committee, 29 November 2017

<sup>8</sup> Interview with UNESCO Amman Project Team, 27 November 2017; ROM Monitoring Report (June 2017); Support to Jordanian EMIS System – Phase 2 (September 2017 – August 2020); Project Document (May 2017)

<sup>9</sup> Interview with UNESCO Amman Project Team, 27 November 2017

## 4.3. OUTPUTS/DELIVERABLES

### 4.3.1. OVERALL ASSESSMENT OF EXPECTED RESULTS

#### 4.3.1.1. ER1: Comprehensive scoping of MoE needs for a more robust Education Decision Support System

**This Expected Result has been achieved.** An initial needs assessment included consultations with a wide range of stakeholders (MoE Planning, Research and Development Directorate, Queen Rania Center, Educational Training Center, Examinations and Tests, Vocational Education, General Education, selected field directorates and schools), as well as a wide range of external stakeholders), as well as a technical review comprising of a comprehensive IT infrastructure assessment from the central (ministry) to the school level. The EMIS project team continued to accommodate MoE's evolving needs for the EMIS throughout the lifetime of the project.

#### 4.3.1.2. ER2: Open and user-friendly access to education data and indicators for better informed decision-making at all levels

**This Expected Result has been achieved in principle, but is not quite happening in practice.** The OpenEMIS system has extremely rich data on a range of education sector components, along with the tools for accessing, analyzing and sharing this data. Yet because these tools are not being utilized to their full potential, the link between education data and better-informed decision-making at all levels is relatively weak (see Indicator 7). Moreover, the core MoE EMIS team lacks the capacity to transform data into useful indicators – including the development of KPIs.<sup>10</sup>

As such, education data from OpenEMIS is currently largely used to generate a limited number of reports and to respond to ad hoc requests for information, rather than being used systematically to drive better-informed decision-making at all levels.

#### 4.3.1.3. ER3: New effective, easy to upgrade EMIS pilot-tested and rolled out across all MoE institutions

**This Expected Result has been achieved.** The EMIS was successfully pilot tested in 64 schools, with feedback from the pilot test used to refine and further customize the system (see Indicator 9). Following MoE approval the enhanced EMIS was rolled out throughout the entire country during the second semester of the 2015-2016 school year – resulting in the eventual training of more than 110,000 OpenEMIS users (see Indicator 10). The roll-out also included the training of key MoE staff in various aspects of OpenEMIS administration, management and usage.

The extensive consultation process during the scoping stage and protracted customization of the system to be coherent with the Jordanian education system and meet the needs of various MoE stakeholders ensured that the resulting EMIS is an effective tool for supporting evidence-based policy formulation. The system is easy to upgrade both in the sense that custom fields, workflows, reporting templates, visualizations and connections to other systems can easily be added, and in the sense that the OpenEMIS platform is constantly being updated with improvements and new features.

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<sup>10</sup> Interview with Dr. Omar Al-Jarrah, Chair of OpenEMIS Technical Steering Committee, 29 November 2017; Interview with Dr. Mahmoud Smadi, Statistics Consultant, 29 November 2017; Support to Jordanian EMIS System – Phase 2 (September 2017 – August 2020): Project Document (May 2017)

#### 4.3.1.4. ER4: Fully-integrated Decision Support System with data from EMIS and other relevant public-sector databases in place

**This Expected Result has been achieved.** At the close of the project MoE is in possession of a fully-operational education decision support system (see also Indicator 5). This includes pre-existing education datasets from the legacy EDUWAVE system as well as up-to-date educational data for the 2016-2017 school year (see Indicator 6).

The OpenEMIS system has also been successfully integrated with other relevant public-sector databases, including the Civil Service and Passports Department Database (CSPD) and the Examinations Data Management Information System (EXAMIS) (See Indicator 11). The development of an OpenEMIS Generic Application Programming Interface (API) allows OpenEMIS to connect with other public-sector databases and systems in the future.

#### 4.3.1.5. ER5: An EMIS system fully compliant to beneficiaries' needs and international standards in place

**This Expected Result has been achieved.** An extensive initial scoping, consultation and needs assessment phase ensured that the OpenEMIS platform was fully customized to the Jordanian education system and met the requirements of key MoE stakeholders. This was reinforced through the iterative pilot testing phase and by the EMIS project team's accommodation of requests for additional features and customization throughout the lifetime of the project. Moreover, the open and customizable nature of the OpenEMIS platform means that the system can easily be updated to comply with MoE's future needs – from the creation of new KPIs or dashboards to linking OpenEMIS with other public-sector databases.

The project is replete with examples of the latest international standards being adhered to in the design and implementation of the OpenEMIS system – from the technical specifications of the servers that host the system to the protocols for programming and software development. There are also examples of consultancy services rendered under the 'Complementary Technical Advisory Services' project component drawing on international best practice, such as the utilization of UNESCO Institute for Education Planning and UNESCO Institute for Statistics methodology in the setting up of the National Education Account in Jordan.

### 4.3.2. ASSESSMENT OF EXPECTED RESULTS INDICATORS

Indicator 3: OpenEMIS operational and owned by the government
<b>Basis for assessment</b>
<ul style="list-style-type: none"><li>• Secondary data</li><li>• Interviews with key project stakeholders and implementation and sub-contracted partners</li><li>• Field observation visits and interviews with beneficiaries at project implementation sites</li></ul>
<b>Assessment</b>
<p>This indicator has been partially achieved: OpenEMIS is fully operational (see Indicator 10) and is owned by the government in the sense that all the required hardware and software systems, data and data collection processes (see Indicator 6), linkages with other systems (see Indicator 11) and reporting functionalities (see Indicator 7) are in place.</p> <p>At the central level, MoE is assessed to possess the necessary hardware for supporting the system, including 'optimum' servers (although the provision and quality of IT infrastructure at the field directorate and school level is less consistent – a fact that was observed during field visits to</p>

<p>four schools as part of this evaluation).<sup>11</sup> The system can also be said to be owned by the government in the sense that commitment to using the system appears to be strong at all levels, from the Minister of Education to the field directorates and schools interviewed as part of this evaluation. This observation is also confirmed by an EU monitoring exercise carried out in June 2017.<sup>12</sup></p> <p>However, the government cannot be said to have ownership of OpenEMIS in the sense of MoE being able to independently sustain the system following the closure of the project and withdrawal of UNESCO support (see Indicator 4).</p>	
<b>Key activities</b>	<b>Achievements of key activities</b>
All	N/A

<b>Indicator 4: OpenEMIS administration team with the capacity to sustain the use of the system</b>
<b>Basis for assessment</b>
<ul style="list-style-type: none"> <li>• Secondary data</li> <li>• Interviews with key project stakeholders and implementation and sub-contracted partners</li> <li>• Field observation visits and interviews with beneficiaries at project implementation sites</li> </ul>
<b>Assessment</b>
<p>This indicator has been partly achieved: the administration team can manage some components of OpenEMIS independently, but MoE does not have the capacity to autonomously sustain the use of the system.</p> <p>QRC is reported as being able to competently manage OpenEMIS core, which is the component of the system related to data and workflows pertaining to schools.<sup>13</sup> QRC is also driving and closely monitoring the on-going data collection activities.<sup>14</sup> The QRC EMIS core team is also able to use the system to produce basic reports and respond to ad hoc data requests (see Indicator 2 above).</p> <p>That said, the secondary data consulted as part of this evaluation as well as interviews with key project stakeholders indicate that MoE lacks the capacity to autonomously sustain the use of the system from both a technical and practical perspective.</p> <p>From a technical perspective, an internal UNESCO capacity assessment of the core QRC EMIS team entitled 'Support to Jordanian EMIS System – Phase 2 (September 2017 – August 2020): Project Document' conducted in May 2017 found that they had a generally weak command of tools for system development, system design for linkages to other relevant data systems, system design for data reporting, data utilization for key education management fields, and database administration – as well as of the Linux programming language on which the whole system is based (although it should be noted that selected members of the core QRC EMIS team subsequently received additional training in several of these areas under the Accelerated Capacity Development</p>

<sup>11</sup> Support to Jordanian EMIS System – Phase 2 (September 2017 – August 2020): Project Document (May 2017)

<sup>12</sup> ROM Monitoring Report (June 2017)

<sup>13</sup> Interview with Nilhan Siam, Jordan EMIS Programme Advisor/CSF, 29 November 2017

<sup>14</sup> Interview with UNESCO Amman Project Team 27 November 2017

Plan (ACPD).<sup>15</sup> The CSF developer confirmed that at the end of the project, despite the efforts of the ACDP, the core QRC EMIS team still have weaknesses in underlying components of the system such as programming and database management and hence are unable to autonomously master the OpenEMIS platform (see Indicator 21).<sup>16</sup> This was confirmed by the Director of the MoE EMIS Division.<sup>17</sup> The Chair of the EMIS Technical Steering Committee also noted some remaining technical capacity gaps in the core QRC EMIS team, including in building indicators, adding APIs, and environment management.<sup>18</sup>

From a practical perspective, MoE is not yet self-sufficient in fully exploiting the system's various reporting functionalities – including the generation of custom reports and the use of dashboards. The UNESCO Amman Project Team reported that the QRC EMIS team has not yet been able to go beyond the limited number of pre-defined report templates to generate custom reports for each department,<sup>19</sup> while the Chair of the EMIS Technical Steering Committee noted that MoE is currently only using one of the many dashboards that are built into the system.<sup>20</sup> Both of these observations are echoed in the internal UNESCO capacity assessment of the core QRC EMIS team conducted in May 2017. The capacity of MoE to sustain the use of the system in MoE decision-making processes is therefore limited.

Key activities	Achievements of key activities
All	N/A

#### Indicator 5: Launch of an integrated education decision support system with data from OpenEMIS and other relevant public-sector databases

##### Basis for assessment

- Secondary data
- Interviews with key project stakeholders and implementation and sub-contracted partners
- Field observation visits and interviews with beneficiaries at project implementation sites

##### Assessment

This indicator has been achieved: at the close of the project MoE is in possession of a fully-operational education decision support system. This includes pre-existing education datasets from the legacy EDUWAVE system as well as up-to-date educational data for the 2016-2017 school year (see Indicator 6). As is usual with any large primary data set, the 2016-2017 data is reported to contain some gaps, errors and outliers.<sup>21</sup> A statistics consultant has been retained by UNESCO

<sup>15</sup> Support to Jordanian EMIS System – Phase 2 (September 2017 – August 2020): Project Document (May 2017). Note that some activities implemented under the ACDP drew on a different funding source.

<sup>16</sup> Interview with Nilhan Siari, Jordan EMIS Programme Advisor/CSF, 29 November 2017. P

<sup>17</sup> Interview with Marwan Turman, Head of EMIS and E-Learning Division, QRC, 5 December 2017

<sup>18</sup> Interview with Dr. Omar Al-Jarrah, Chair of OpenEMIS Technical Steering Committee, 29 November 2017

<sup>19</sup> Interview with UNESCO Amman Project Team, 19 November 2017

<sup>20</sup> Interview with Dr. Omar Al-Jarrah, Chair of OpenEMIS Technical Steering Committee, 29 November 2017

<sup>21</sup> Interview with Dr. Mahmoud Smadi, Statistics Consultant, 29 November 2017

to develop a capacity development plan for data utilization which will form a component of the upcoming second phase of the project, of which data cleaning will be a key aspect.	
The OpenEMIS system has also been successfully integrated with other relevant public-sector databases, including the Civil Service and Passports Department Database (CSPD) and the Examinations Data Management Information System (EXAMIS) (See Indicator 11).	
<b>Key activities</b>	<b>Achievements of key activities</b>
All	N/A

## 4.4. YEAR 1 ACTIVITIES

### 4.4.1. OVERALL ASSESSMENT OF YEAR 1 ACTIVITIES

Activities in Year 1 of the project were largely aligned with the first two project components: 'Component 1: Comprehensive scoping of MoE needs for a robust Education Decision Support System' and 'Component 2: Consolidation and Expansion of the Jordan OpenEMIS indicators automation, reporting and data visualization features.' These two project components correspond to Expected Results 1 and 2.

The indicators for Year 1 activities do not provide a very helpful basis for evaluating the contribution of project activities towards the intended outcomes. That said, it can nonetheless be assessed that the objectives of the first year of the project – namely the comprehensive scoping of MoE requirements in relation to OpenEMIS, the migration of existing data to OpenEMIS, and the development of data visualization and reporting tools and training of key MoE officers in their use – were generally achieved.

### 4.4.2. ASSESSMENT OF YEAR 1 INDICATORS

<b>Indicator 6: OpenEMIS loaded with existing education data</b>	
<b>Basis for assessment</b>	
<ul style="list-style-type: none"> <li>• Secondary data</li> <li>• Interviews with key project stakeholders and implementation and sub-contracted partners</li> </ul>	
<b>Assessment</b>	
<p>This indicator has been achieved: relevant historical datasets were migrated from EDUWAVE to OpenEMIS, and the data was also cleaned. Historical Statistical Yearbooks were also migrated to OpenEMIS. Reports on data migration and cleaning were submitted to the EMIS Steering Committee and endorsed.</p> <p>A precursor to OpenEMIS being loaded with existing education data was the completion of a comprehensive needs assessment (see the first key activity below). The project logframe does not include an indicator related to this, but the activity is highly relevant to the achievement of Expected Result 1: Comprehensive scoping of MoE needs for a robust Education Decision Support System. Four relevant reports were submitted to the EMIS Steering Committee and endorsed (EMIS Needs Assessment Report, Refining Key Performance Indicators Report, EMIS IT Infrastructure Report, Staff Training Plan).</p>	
<b>Key activities</b>	<b>Achievements of key activities</b>

<p>Policy and planning activities including policy development, project scoping, detailed needs assessment and gap analysis, data collection analysis to assess the needs and capabilities of government institutions for improved planning and management of the education system</p>	<p>This activity corresponds largely to 'Project Component 1: Technical reviews, needs assessments and inventories of human, technical, institutional capacities of procedural issues'.</p> <p>The technical review component comprised a comprehensive IT infrastructure assessment from the central (ministry) to the school level, including a network connectivity assessment.</p> <p>The needs assessment included consultations with a wide range of stakeholders (MoE Planning, Research and Development Directorate, Queen Rania Center, Educational Training Center, Examinations and Tests, Vocational Education, General Education, selected field directorates and schools, as well as a wide range of external stakeholders). The scope of the needs assessment included data quality and tools, data quality issues, education sector KPIs and data gaps, analysis of MoE business processes in relation to EMIS, and reporting requirements.<sup>22</sup></p>
<p>Data migration of existing data to OpenEMIS system to enable immediate use of the data</p>	<p>EDUWAVE data from the previous three school years was successfully migrated to OpenEMIS, including school profiles, school education programmes and shifts, academic structures (sections, grades, subject classes), student directory, teachers and teaching relations, staff positions, non-teaching staff (in school), school infrastructure, student and staff attendance, and student marks.</p> <p>The EMIS team also undertook a programme of extensively cleaning all the migrated historical datasets such that the data could be used as a baseline for education sector KPIs. The development and implementation of the data cleaning methodology also presented an opportunity to strengthen the capacity of the MoE staff involved in statistical techniques for data cleaning and normalization.<sup>23</sup></p> <p>Discussions were also held with other partners to migrate relevant thematic datasets collected under joint programmes to OpenEMIS – including UNICEF and JEN (on WASH data on hygiene and sanitation in public schools), UNRWA (to link their EMIS data with MoE OpenEMIS data), and UNHCR (on refugee data).<sup>24</sup></p>

**Indicator 7: OpenEMIS used with other data visualization and reporting tools to generate key planning and management reports**

**Basis for assessment**

- Secondary data
- Interviews with key project stakeholders and implementation and sub-contracted partners
- Field observation visits and interviews with beneficiaries at project implementation sites

<sup>22</sup> EMIS Interim Narrative Report, Feb 2017, p. 9

<sup>23</sup> EMIS Interim Narrative Report, Feb 2007, p. 26

<sup>24</sup> EMIS Interim Narrative Report, Feb 2017 p. 25

<b>Assessment</b>	
<p>Note that this indicator corresponds closely to 'Project Component 2: Consolidation and expansion of the Jordan OpenEMIS indicators automation, reporting and data visualization features.'</p> <p>This indicator has been achieved in principle: all of the processes and enabling factors for OpenEMIS to be used with other data visualization and reporting tools to generate key planning and management reports are in place. MoE staff and beneficiaries are using EMIS data visualization and reporting tools to answer requests for information and generate reports in certain contexts. However, capacity gaps among MoE staff mean OpenEMIS data visualization and reporting tools are not being used to their full extent to generate key planning and management reports.</p>	
<b>Key activities</b>	<b>Achievements of key activities</b>
<p>Data analysis for data validation and quality assurance, business intelligence cube and query development, interactive online dashboard of key education data, publication of educational statistical report, education programme monitoring of key performance indicators, development of education profiles to monitor and disseminate key data on the status of education in the country</p>	<p>The EMIS team developed an online data visualization and reporting tool in both English and Arabic, which allows access to education sector indicators and data reports (including tables, graphs and maps). Calculation of indicators was also made more user-friendly.</p> <p>Business intelligence tools were also designed that cater for all the technical needs of MoE for visualization and data analysis.</p> <p>A function called OpenEMIS dashboard was enabled for custom data visualization, which allows MoE to build custom dashboards and share them with end-users.</p> <p>An online User Acceptance Test (UAT) environment was enabled to allow MoE to test and accept proposed changes to the OpenEMIS system, in line with international best practice.</p> <p>Three interactive dashboards were rolled out on the EMIS website (Education System Overview; Indicator Mapper; Data Entry Monitor), and a series of eight additional thematic dashboards were also developed.<sup>25</sup></p>
<p>Use of OpenEMIS system to generate advocacy materials for dissemination and visibility of the education data</p>	<p>The EMIS team began developing school profiles that are connected to real-time OpenEMIS datasets, which will allow stakeholders (the ministry, schools and families) to access a series of pertinent education sector indicators.</p> <p>OpenEMIS data also contributed to an Education Sector Assessment (ESA) conducted in early 2017, from which a variety of shorter policy briefs will be developed.<sup>26</sup></p> <p>The final status of this activity could not be determined.</p>

### **Indicator 8: A team of key of MoE officers trained in use of education data for better planning and management**

#### **Basis for assessment**

- Secondary data

<sup>25</sup> EMIS Interim Narrative Report, Feb 2017 p. 33-34

<sup>26</sup> EMIS Interim Narrative Report, Feb 2017 p. 36

<ul style="list-style-type: none"> <li>• Interviews with key project stakeholders and implementation and sub-contracted partners</li> <li>• Field observation visits and interviews with beneficiaries at project implementation sites</li> </ul>	
<b>Assessment</b>	
<p>This indicator has been achieved in principle: the project included extensive training and capacity-building of key MoE officers in the use of education data for better planning and management.</p> <p>That said, there still appears to be a capacity gap in the MoE – both in relation to the ownership and management of the system, and in its use for informing and driving better planning and decision-making.</p>	
<b>Key activities</b>	<b>Achievements of key activities</b>
OpenEMIS capacity building for education planners, administrators and IT support in data analysis for use in planning	Trainings and workshops held in Year 1 of the project included: (1) training 12 MoE staff from the Directorate of Planning, Research and Development and Queen Rania Center on using data visualization and reporting tools as well as data cleaning and indicator normalization; (2) training 17 MoE staff on updating and maintaining the data visualization interface; (3) a set of advanced trainings on the use of EMIS data for GIS school mapping, financial and budget analysis, simulation models and education cost projections. <sup>27</sup>

## 4.5. YEAR 2 & 3 ACTIVITIES

### 4.5.1. OVERALL ASSESSMENT OF YEARS 2 & 3 ACTIVITIES

Activities in Years 2 and 3 of the project were largely aligned with the third project component: 'Component 3: OpenEMIS enhancement, pilot-test, consolidation and deployment'. This project component correspondent to Expected Result 3.

Both of the indicators for Years 2 and 3 were achieved: the pilot test was successfully completed and OpenEMIS was subsequently scaled up to cover the entire country. Other key activities and achievements during this phase included the full customization of the OpenEMIS platform to the Jordanian education system and to meet the MoE's requirements, the comprehensive training of all OpenEMIS users (from key MoE staff to more than 110,000 teachers), and the launch of data collection for the 2016-2017 school year. Although not featured in the logframe indicators or activities for Years 2 and 3, the upgrading of MoE hardware infrastructure and subsequent verification of its ability to handle the requirements for running OpenEMIS was also an important component of this phase.

While all of these activities contributed towards the achievement of the indicators for Years 2 and 3, a series of factors emerged during this phase that negatively impacted on the project timeline in the first instance, and ultimately on the key objective of MoE being able to take full ownership of OpenEMIS by the end of the project (see 'Indicator 3: OpenEMIS operational and owned by the government' and 'Indicator 4: OpenEMIS administration team with the capacity to sustain the use of the system').

The first factor was the political decision to transfer responsibility for the EMIS from the Central Planning Department to Queen Rania Center for Education Technology, which occurred just after the completion of the pilot phase and before the full roll-out. This institutional uprooting of the OpenEMIS project caused time to be lost as responsibilities and decision-making processes within MoE became unclear. Moreover, being strongly focused on information technology, QRC lacked the capacity and perspective to be an effective counterpart on the reporting, planning and decision-support aspects of the EMIS –

<sup>27</sup> EMIS Interim Narrative Report. Feb 2017. p. 23

leading to a capacity gap and loss of momentum in these key areas (although several members of the Planning Department were eventually transferred to QRC).

The second factor was the emergence of two areas of activity which drew substantial time and resources away from the core project activities and objectives: providing EMIS data to the Ministry of Finance so it could be used to monitor the disbursement of JD20 to every Jordanian student on behalf of the King, and the configuration of the EMIS system as the repository for official data on Syrian refugees in Jordanian schools. While both activities represent considerable achievements, and validate the utility and functionality of OpenEMIS, fulfilling them drew time and resources away from the key objective of building the capacity of the core MoE team to take ownership of OpenEMIS.

The third factor is the multitude of requests for customization of the OpenEMIS platform that extended beyond the initial customization and pilot test phase (and indeed continue up to the present day). This resulted in the development of a very rich system which became more difficult for key MoE staff to master, while the process of accommodating these constant requests also drew time and resources away from core capacity-building activities.

#### 4.5.2. ASSESSMENT OF YEARS 2 & 3 INDICATORS

<b>Indicator 9: OpenEMIS piloted in 50+ schools</b>	
<b>Basis for assessment</b>	
<ul style="list-style-type: none"> <li>• Secondary data</li> <li>• Interviews with key project stakeholders and implementation and sub-contracted partners</li> </ul>	
<b>Assessment</b>	
<p>This indicator was achieved: the EMIS was successfully pilot tested in 64 schools (before this a closed pilot test was conducted in two schools). Feedback from the pilot test was used to further refine and customize the system.</p> <p>Extensive customization of the EMIS platform to fit the context of the Jordanian education system as well as to meet the evolving priorities and requirements of the MoE took place throughout the pilot phase and beyond.</p>	
<b>Key activities</b>	<b>Achievements of key activities</b>
OpenEMIS customized and adapted to meet the specific needs of the government	<p>A great deal of effort was invested in customizing the generic UNESCO OpenEMIS platform to meet the needs of the MoE ahead of the pilot test – including the customization of data entry forms and adapting the system architecture to the Jordanian educational system and administrative structures.</p> <p>In addition, two EMIS sub-modules were added on Teacher's Professional Development Tracking and Quality Assurance for Early Childhood Education.</p> <p>Numerous other additional data entry and management modules were also incorporated after the initial customization phase, while the survey data collection module was also expanded to be able accommodate specific workflows in relation to schools, teachers and staff, and students.</p> <p>A substantial workstream was also opened up at this stage at the request of the EMIS Steering Committee on the collection of data on</p>

	Syrian Refugees and the subsequent embedding of this data into the core EMIS system. <sup>28</sup>
OpenEMIS piloted in a representative sample of schools	As Indicator 9.

#### Indicator 10: OpenEMIS scaled up to cover all schools, students, teachers and staff

##### Basis for assessment

- Secondary data
- Interviews with key project stakeholders and implementation and sub-contracted partners
- Field observation visits and interviews with beneficiaries at project implementation sites

##### Assessment

This indicator was achieved: the Minister of Education approved the roll-out of the enhanced EMIS throughout the country during the second semester of the 2015-2016 school year.

The roll-out took place in three phases. In Phase 1, 40 regional-level trainers trained 608 field level trainers. In Phase 2, these field level trainers trained more than 13,000 staff at the school level (two teachers from each school). In Phase 3, the two teachers from each school trained all other staff in his/her school, resulting in the training of more than 110,000 OpenEMIS users.

Key MoE staff were also trained in numerous aspects of system administration, management and usage. OpenEMIS data validation and quality assurance processes were developed and implemented, and OpenEMIS helpdesk was established.

Data collection for the 2016-2017 school year was launched in August 2016. Some difficulties were encountered during data collection, due in large part to the decision to switch responsibility for the EMIS (and hence data collection activities) from the Central Planning Department to Queen Rania Center for Education Technology.

Key activities	Achievements of key activities
OpenEMIS scaled up to cover all education institutions in the country	<p>Following the extensive cascade training outlined above, the enhanced EMIS was officially launched at an event at the Queen Rania Center for Education Technology in August 2016, which also announced the launch of EMIS data collection operations for the 2016-2017 school year.</p> <p>Two notable achievements from the roll-out of OpenEMIS were the use of EMIS data by the Ministry of Finance to monitor the disbursement of JD20 to each student from the King, and the use of EMIS to collect and provide official data on Syrian refugees in schools.</p>
OpenEMIS data validation and quality assurance processes operationalized	Data validation and quality assurance processes were developed, operationalized and successfully tested during the pilot phase. These processes also underwent an independent audit by Amman Arab University ICT faculty.

<sup>28</sup> EMIS Interim Narrative Report, Feb 2017 p9. 41-43

<p>Teams of education planners, administrators, IT support personnel all provided appropriate training to sustain the administration of OpenEMIS. Training of trainers carried out to enable cascade training from national level to subnational levels</p>	<p>Training provided to key MoE staff included: (1) training EMIS system administrators and maintenance team; (2) training IT maintenance team; (3) training DEPR staff as trainers on the OpenEMIS interfaces; (4) training of data entry staff and users on record-keeping, basic IT skills, OpenEMIS data entry and user interfaces and basic statistical literacy; and (5) school-based management training for supervisors, principals, school board members and teachers on use of OpenEMIS for decision-making.</p>
<p>An OpenEMIS helpdesk established within the MoE for support to users within the country</p>	<p>An online Support Service Desk was established to provide support to the central MoE team working on OpenEMIS.</p>

#### 4.6. YEAR 3 & 4 ACTIVITIES

The core EMIS-focused activities in Years 3 and 4 were aligned with the fourth project component: 'Component 4: OpenEMIS expansion or connectivity to additional data sources'. This project component corresponds to Expected Result 4. At the request of MoE and with the support of the EU, Years 3 and 4 also saw the initiation of a set of 'Complementary Technical Advisory Services' which sat outside of the core OpenEMIS workstream. This is reflected in the addition of a fifth project component, 'Project Component 5: Specialized policy-level technical advisory services', which corresponds to Expected Result 5.

Two evaluations conducted in the final year of the project indicated that MoE was further away than anticipated from being able to take full ownership of the enhanced EMIS following the close of the project and the withdrawal of UNESCO. As such, in the final six months of the project an additional set of activities were launched under the auspices of an 'Accelerated Capacity Development Plan (ACDP)', which aimed to accelerate knowledge transfer and intensively build the capacity of key MoE stakeholders at the central and regional levels to take ownership of the enhanced EMIS following the end of the project.<sup>29</sup>

Both of the indicators for Years 3 and 4 for the remaining activities relating to the core OpenEMIS roll-out and implementation were achieved: the OpenEMIS platform was successfully integrated with a series of other relevant public databases and key MoE staff received training in data analysis and the use of the enhanced EMIS. In spite of this, the capacity of key MoE staff to manage and utilize the enhanced EMIS to its full potential continued to lag behind in Years 3 and 4 due to the knock-on effect of factors that emerged in Years 2 and 3 that detracted from the capacity-building and knowledge transfer aspects of the project. The addition of the 'Complementary Technical Advisory Services' project component, while highly useful to MoE and well-received in its own right, also drew time and resources away from knowledge transfer and capacity building activities relating to the core OpenEMIS workstream.

Indicators related to the 'Complementary Technical Advisory Services' were largely achieved: MoE received the requested technical support and associated deliverables in the areas of teacher professional standards and development, education sector finance, implementing a GIS platform to support school mapping and planning, and implementing the MoE ICT strategy. One indicator relating to the development of a vocational education work plan for implementing decisions stemming from the

<sup>29</sup> Note that some activities implemented under the ACDP drew on a different funding source.

National Conference on Human Resource Development Strategy (HRD) could not be achieved due to the postponement of the HRD Strategy; instead, UNESCO provided a consultant who prepared on-demand technical notes for the Minister and provided strategic advice on TVET. Finally, it should be noted that while a GIS platform for supporting school mapping and planning was established and is fully operational, MoE appears to lack the capacity and resources to utilize the tool to its full potential to support decision-making.

<b>Indicator 11: OpenEMIS integrated with other public databases to establish an education decision-support system</b>	
<b>Basis for assessment</b>	
<ul style="list-style-type: none"> <li>• Secondary data</li> <li>• Interviews with key project stakeholders and implementation and sub-contracted partners</li> <li>• Field observation visits and interviews with beneficiaries at project implementation sites</li> </ul>	
<b>Assessment</b>	
<p>This indicator has been achieved: OpenEMIS is integrated with a series of other relevant public databases.</p> <p>Discussions are ongoing with the Ministry of Finance on the linking of OpenEMIS with the Government Finance Management Information System (GFMIS).</p> <p>An Application Programming Interface (API) was developed to allow for the future integration of OpenEMIS with other public databases and platforms.</p>	
<b>Key activities</b>	<b>Achievements of key activities</b>
Data integration activities to establish a complete and useful education decision support system, including OpenEMIS data, other public data and the development of mobile apps to support data use	<p>OpenEMIS was successfully integrated with:</p> <ul style="list-style-type: none"> <li>• The Civil Service Database and Passports Department (CSPD), allowing for the verification of every new student and staff record entered into EMIS against CSD data.</li> <li>• The Examinations Data Management Information System (EXAMIS), allowing examination results from national tests and the national Tawjihi examinations to be loaded to OpenEMIS, as well as facilitating additional workstreams around examination administration.</li> </ul>

<b>Indicator 12: Education simulation modelling capacity building and training provided to government officers</b>	
<b>Basis for assessment</b>	
<ul style="list-style-type: none"> <li>• Secondary data</li> <li>• Interviews with key project stakeholders and implementation and sub-contracted partners</li> </ul>	
<b>Assessment</b>	
<p>This indicator has been achieved: a Jordan Education Simulation Model (JESM) was delivered to MoE.</p>	
<b>Key activities</b>	<b>Achievements of key activities</b>
Education data analysis and management training to senior education staff in	Eight end-users of the JESM were trained and a restitution workshop was held in December 2016 involving key management staff from MoE.

the use of the education decision-support system	
Education and policy planning activities to support strategic planning based on data	

Indicator 13: Availability of a reviewed National Teacher Professional Standards	
<b>Basis for assessment</b>	
<ul style="list-style-type: none"> <li>Secondary data</li> </ul>	
<b>Assessment</b>	
This indicator has been achieved: 'Teacher status and professional standards policies' were delivered by SOFRECO to MoE in March 2017.	
<b>Key activities</b>	<b>Achievements of key activities</b>
Technical Advisory Services to support operationalization of MoE Teacher Policy Framework	<p>A SOFRECO expert undertook three missions between March and November 2016, consulting with a range of national government and non-government stakeholders and working closely with the MoE Education Training Center (ETC).</p> <p>The expert gave two presentations to HE the Minister, and organized a study tour to Georgia in August 2016 to enable MoE to learn from teacher professional development reform processes in Georgia.</p>

Indicator 14: Availability of generic frameworks for teacher professional development and teacher induction and in-service programmes	
<b>Basis for assessment</b>	
<ul style="list-style-type: none"> <li>Secondary data</li> </ul>	
<b>Assessment</b>	
This indicator has been achieved: 'Teacher continuous professional development policies' were delivered by SOFRECO to MoE in March 2017. A 'Teacher evaluation and appraisal system' and 'Career paths and ranking system for teachers' was delivered in April 2017.	
<b>Key activities</b>	<b>Achievements of key activities</b>
Technical Advisory Services to support operationalization of MoE Teacher Policy Framework	As for key activities under Indicator 13.

Indicator 15: Availability of an Education Sector Financing report	
<b>Basis for assessment</b>	
<ul style="list-style-type: none"> <li>Secondary data</li> </ul>	
<b>Assessment</b>	

This indicator has been achieved: an 'Analysis of Government Expenditure' report was delivered by an international expert to MoE in August 2016.	
<b>Key activities</b>	<b>Achievements of key activities</b>
Technical Advisory Services for the Rationalization of the Government of Jordan Education Financing and Expenditure Framework	The 'Analysis of Government Expenditure' report outlined the key trends in the current financing of Jordan's education sector. The analysis found that 62.2% of total education financing is directed toward the basic education, 15.3% toward secondary education, 11.1% toward higher education, and 6.3% toward general administration costs.

<b>Indicator 16: Availability of National Satellite Account for Education</b>	
<b>Basis for assessment</b>	
<ul style="list-style-type: none"> <li>• Secondary data</li> </ul>	
<b>Assessment</b>	
This indicator has been achieved: the foundations for a National Education Account were set up.	
<b>Key activities</b>	<b>Achievements of key activities</b>
Technical Advisory Services for the Rationalization of the Government of Jordan Education Financing and Expenditure Framework	<p>The setting up of the National Education Account involved consultation workshops with focal points from MoE, Ministry of Finance, Directorate of Statistics, and the Ministry of Planning.</p> <p>The Jordan NEA followed international best practice from UNESCO International Institute for Education Planning and the UNESCO Institute for Statistics. A set of documents for maintaining the NEA were drawn up and translated into Arabic.</p>

<b>Indicator 17: Availability of a cost simulation model</b>	
<b>Basis for assessment</b>	
<ul style="list-style-type: none"> <li>• Secondary data</li> </ul>	
<b>Assessment</b>	
This indicator has been achieved: a Jordan Education Simulation Model (JESM) was delivered to MoE.	
<b>Key activities</b>	<b>Achievements of key activities</b>
Education simulation modelling to assist in evaluating options, planning and forecasting	<p>The JESM is a strategic planning tool allowing MoE to explore, analyses and project the impact of a wide variety of socioeconomic parameters on the education system.</p> <p>Eight end-users of the JESM were trained and a restitution workshop was held in December 2016 involving key management staff from MoE.</p>

<b>Indicator 18: Availability of a GIS platform to map education inequities, support decision-making for rationalization of the school network and teacher allocation across schools</b>	
<b>Basis for assessment</b>	
<b>Assessment</b>	
This indicator has been partially achieved: a GIS platform – the Jordan Spatial Education Decision Support System (JSEDSS) – is available and fully operational, although MoE appears to lack the capacity to utilize the tool to its full potential to support decision-making. <sup>30</sup>	
<b>Key activities</b>	<b>Achievements of key activities</b>
Technical Advisory Services and Capacity Development Tools in GIS-based school mapping for equity and rationalization of the education facilities network across Jordan	The JSEDSS supports a wide variety of workflows in relation to school mapping and school planning, providing MoE with a tool to make evidence-based decisions on the rationalization of the school network system.

<b>Indicator 19: Availability of a workplan for implementation of MoE ICT strategy</b>	
<b>Basis for assessment</b>	
<ul style="list-style-type: none"> <li>• Secondary data</li> <li>• Interviews with key project stakeholders and implementation and sub-contracted partners</li> </ul>	
<b>Assessment</b>	
This indicator has been achieved: an 'ICT Strategy Implementation Plan' was delivered to MoE.	
<b>Key activities</b>	<b>Achievements of key activities</b>
Technical Advisory Services on the operationalization of the MoE ICT strategy	Four National Experts provided technical advisory services to MoE on the operationalization of the recently approved ICT Strategy in the teaching and learning process – with a particular focus on e-learning.

<b>Indicator 20: Availability of a MoE VE work plan for implementation of the decisions stemming from the National Conference on Human Resource Development Strategy</b>	
<b>Basis for assessment</b>	
<ul style="list-style-type: none"> <li>• Secondary data</li> </ul>	
<b>Assessment</b>	
This indicator was not achieved due to the postponement of the National Human Resources Development Strategy, although a consultant still provided MoE with support and strategic advice on TVET-related issues.	

<sup>30</sup> Interim Narrative Report p. 83. See also interview with Ms. Safa Al-Beirut

Key activities	Achievements of key activities
Technical Advisory Services for the incorporation of the National Conference on Human Resources outcomes into MoE Vocational Education strategies and plans	Due to the postponement of the National Human Resources Development Strategy, a consultant hired by UNESCO instead prepared ad hoc technical notes for the Minister and provided strategic advice on TVET.

**Indicator 21: 80% of MoE EMIS officers at central and regional level satisfactorily trained on their EMIS tasks**

Basis for assessment	
<ul style="list-style-type: none"> <li>• Secondary data</li> <li>• Interviews with key project stakeholders and implementation and sub-contracted partners</li> </ul>	
Assessment	
<p>This indicator cannot be verified. However, interviews with numerous stakeholders, including with the Director of the MoE EMIS and E-learning Division, indicate that at the close of the project MoE EMIS officers at the central level require further training and capacity building support to be able to satisfactorily carry out their EMIS tasks.<sup>31</sup></p>	
Key activities	Achievements of key activities
Accelerated Capacity Development Plan implemented	<p>The Accelerated Capacity Development Plan aimed within the final six months of the project to accelerate knowledge transfer and strengthen MoE capacity at both the central and regional levels to take full ownership of the enhanced EMIS and use it to its full potential following the phase-out of UNESCO.</p> <p>Specific areas of activity included: (1) Enabling the core EMIS team to perform its function and streamline its operation; (2) supporting the expansion of EMIS use within central ministry services; (3) expanding OpenEMIS features; (4) improving the quality, efficiency and timeliness of EMIS field operations; and (5) supporting the EMIS IT basement.</p>

## 4.7. OECD DAC CRITERIA

### 4.7.1. RELEVANCE

**The project was highly relevant to the beneficiaries' needs**, originating from a direct request from MoE in September 2011 to UNESCO for technical assistance in identifying gaps in the existing EMIS system and improving it. The previous EDUWAVE system contained numerous technical weaknesses and bugs, had very weak reporting functionality and was not able to generate indicators, and was licensed to MoE by the vendor under commercial terms whereby MoE had to pay up to JD 400,000 per year in licensing and maintenance costs as well as additional fees whenever modifications or upgrades

<sup>31</sup> Interview with Marwan Turman, Head of EMIS and E-Learning Division, QRC, 5 December 2017

were required.<sup>32</sup> Previous missions by GOPA (2008), USAID (2011) and the World Bank (2011) identified EDUWAVE as an Achilles' heel in MoE, and as partly responsible for MoE's extremely weak capacity for evidence-based policy-formulation and decision-making. In contrast to EDUWAVE, the UNESCO OpenEMIS system is license- and royalty-free, fully customizable, has strong reporting functions, and is designed to be fully owned by countries adopting the system.

**The project model was contextually appropriate and responsive to the needs of beneficiaries, although the time and resources needed to train key MoE stakeholders and build capacity on the management and use of the system was underestimated.** An extensive consultation, scoping, design and pilot-testing phase ensured that the OpenEMIS platform reflected the context and structure of the Jordanian education system, while customization of the EMIS to meet the various data collection, workflow and reporting requirements of MoE took place continuously throughout the lifetime of the project. The basic project model – from design to implementation to capacity building – was appropriate to the context. However, the project model underestimated the time and resources that would need to be dedicated to the capacity-building component of the project. Delays in the implementation phase meant that the capacity-building component was further squeezed. Attempts to accelerate capacity building and knowledge transfer in the final six months of the project significantly boosted MoE's capacity to manage and use various aspects of the system. However, at the close of the project MoE does not have the capacity to autonomously manage the OpenEMIS platform and use it to its full potential.

**The project made a strong effort to adapt and respond to changes in the internal and external context.** The most significant internal change was the decision following the conclusion of the pilot-testing phase by the then-Minister for Education to transfer responsibility for the OpenEMIS project from the Policy and Planning Department to QRC. The project team responded to this change by advocating for the transfer of four Policy and Planning Department employees to the QRC to smooth this transition. A second important change in the internal context was the mismatch between UNESCO and MoE's initial conception of the EMIS as primarily a tool for storing and reporting on educational data and statistics, versus the subsequent requirement from key MoE stakeholders that the OpenEMIS platform also incorporate numerous Enterprise Resource Planning (ERP) features to facilitate various internal MoE processes. The project team responded to this requirement by building a series of custom workflows into OpenEMIS – including around student and teacher transfers and examinations administration.

The most significant change in the external context was the strong focus that emerged on modifying OpenEMIS to be able to collect, aggregate and disseminate data on Syrian refugees in Jordanian schools. The project team responded to this change by dedicating time and resources to addressing this issue in Project Years 2 and 3. The MoE's requirement for technical advice and support in a series of areas outside of the core EMIS workstream – including GIS, education sector financing and teachers' professional development – was accommodated through the incorporation of the additional 'Complementary Technical Advisory Services' project component.

#### 4.7.2. EFFICIENCY

**A series of internal and external factors negatively influenced the implementation of the core EMIS elements of the project, resulting in delays. Yet given the high importance of addressing these factors, such delays would seem to be reasonable.** The project was originally forecast to last 33 months, from 1 February 2014 to 31 October 2016 – but was eventually extended by 13 months. Due to delays with the implementation and customization of the EMIS, the main capacity building

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<sup>32</sup> Interview with Nilhan Siam, Jordan EMIS Programme Advisor/CSF, 29 November 2017. Further details on the legacy EDUWAVE system's weaknesses can be found in the 'Context and Justification' section of the EU Original EMIS Project Document (2013).

component did not start until around six months before the original project end date – leading to the extension of the overall project timeline and the implementation of the ‘Accelerated Capacity Development Program’ component.

The most significant internal factor was the decision following the conclusion of the pilot-testing phase by the then-Minister for Education to transfer responsibility for the OpenEMIS project from the Policy and Planning Department to QRC. The disruption caused by this uprooting of the project was compounded by the subsequent lack of clarity on individual and departmental roles and responsibilities in relation to the EMIS in MoE, as well as a lack of capacity in QRC in key skills required for managing and using OpenEMIS to its full potential. Second, the mismatch between UNESCO and MoE’s initial conception of OpenEMIS and the subsequent requirements of key MoE stakeholders in relation to the system (outlined above) also negatively affected the project’s implementation. The additional time and resources spent customizing OpenEMIS to accommodate a variety of different workflows had a detrimental effect on the capacity building component, delayed project delivery overall, and resulted in a platform that is more complex and difficult to maintain and manage than initially envisioned. The internal factors referred to above – namely the coopting of the EMIS to provide data on Syrian refugees and the addition of the ‘Complementary Technical Advisory Services’ module – also negatively influenced the project’s implementation by drawing resources away from the core EMIS implementation and capacity building.

**The UNESCO core project team’s resources appear to have been used efficiently, but there were some inefficiencies in how CSF resources were deployed.** The CSF developers being based in Singapore meant that opportunities for knowledge-transfer to key QRC staff and on-the-job capacity building were limited.<sup>33</sup> Contact between CSF and QRC appears to have been largely through UNESCO, resulting in inefficient communications processes and limited on-the-job training and knowledge-transfer.<sup>34</sup> QRC staff praised the quality and efficiency of project activities delivered by PALCO, a Jordanian company contracted by UNESCO on various aspects of the installation and maintenance of the hardware associated with OpenEMIS.<sup>35</sup>

**The amount of work delivered under the project is considerable, and as such cost efficiency is assessed to be good.** The recent EU ROM report is worth quoting in this regard: “The customization of OpenEMIS to the Jordanian education system and the sheer amount of data that was processed from 43 field directorates, approximately 8,000 schools, 100,000 schoolteachers and more than 1 million pupils is remarkable and required substantial resources from both the Implementing partner UNESCO and the Beneficiary MoE.”<sup>36</sup> A consultant contracted by the EU who is familiar with the OpenEMIS project since its inception also remarked on the wide scope of what has been delivered.<sup>37</sup>

#### 4.7.3. EFFECTIVENESS

**UNESCO’s planning, management and coordination of the project was adequate overall, although certain areas could have been improved.** The initial design of the project appears to have underestimated the sheer scale of the task of implementing OpenEMIS in a country of Jordan’s size and the corresponding capacity building needs. It is also an open question whether the UNESCO project

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<sup>33</sup> Interview with UNESCO Amman Project Team. 19 November 2017. Interview with Marwan Turman, Head of EMIS and E-Learning Division, QRC. 5 December 2017.

<sup>34</sup> Interview with UNESCO Amman Project Team. 19 November 2017, ROM Monitoring Report (June 2017)

<sup>35</sup> Interview with Marwan Turman, Head of EMIS and E-Learning Division, QRC. 5 December 2017

<sup>36</sup> ROM Monitoring Report (June 2017)

<sup>37</sup> Interview with Dr. Joachim (Joe) Friedrich Pfaffe, EU consultant. 6 December 2017

team could have done more to resist or limit the MoE's many requests for additional features or functionalities in the interests of ensuring that the EMIS that was handed over to MoE at the end of the project was one it could independently manage and use. That said, once it became apparent that MoE capacity to use OpenEMIS had progressed far more slowly than anticipated, measures were taken to accelerate capacity building and knowledge transfer. Outputs from some of the missions and consultancies delivered under the 'Complementary Technical Advisory Services' do not appear to always have met beneficiary or donor expectations,<sup>38</sup> although the extent to which this reflects UNESCO's management of the various consultants contracted to deliver the services is difficult to assess. All MoE stakeholders reported that UNESCO coordination with MoE had been adequate, although on the donor side a key stakeholder felt that the EU should have been more systematically consulted and invited to meetings and events.<sup>39</sup>

**The project M&E strategy suffered from some weaknesses.** The project logframe is very weak. The majority of the 21 indicators are expressed more as aspirations or aims rather than measurable and verifiable indicators of success. The link between activities, indicators, expected results/outputs and overall objectives is also unclear and often overlapping. The result is that the logframe is not an effective tool for project management or for monitoring and assessing progress towards expected results and outcomes. Assumptions and risks are also weakly formulated and appear not to have been properly assessed. Due to these deficiencies, the logframe appears to have been largely discarded and replaced by a detailed action plan consisting of over 60 activities as the key project management tool. As such, project implementation seems to have become very activity-driven rather than objective-driven. Monitoring was therefore mainly focused on the implementation of activities rather than on the achievement of objectives.<sup>40</sup> MoE also appears to have been a weak counterpart for the project's M&E strategy and did not systematically produce expected progress reports on OpenEMIS implementation.<sup>41</sup>

**Beneficiaries were overall satisfied with the services delivered, but recognize the need for additional capacity building.** All key MoE stakeholders interviewed felt that the implementation of OpenEMIS had been a success, yet all emphasized that additional capacity building and knowledge transfer is necessary to enable MoE to manage and use the system to its full potential. Key MoE stakeholders also reported that they were satisfied with the services delivered under the 'Complementary Technical Advisory Services' module, although the previous EU ROM report, the UNESCO EMIS project narrative report and a key EU stakeholder reported that quality had been variable across these ad hoc consultancies. A key QRC stakeholder, while generally satisfied with the way the project had been managed and delivered, highlighted two key weaknesses: the delays in implementing and customizing the system to meet MoE requirements, and the fact that training and knowledge transfer was carried out sporadically in an ad hoc manner rather than implemented systematically with predetermined curricula, written materials, and time allocated for direct supervision and on-the-job training.<sup>42</sup>

**An unintended negative consequence of the pressure to respond to external demands on the EMIS was a dependency by the core MoE EMIS team on the UNESCO project team.** MoE came under heavy pressure from other government department and donors to provide data on Syrian refugees in Jordanian schools. As QRC lacked the capacity to utilize the EMIS to provide the required

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<sup>38</sup> ROM Monitoring Report (June 2017); Interview with Jacob Arts, EU Programme Manager – Education and Youth Cooperation Section, 5 December 2017

Interview with Jacob Arts, EU Programme Manager – Education and Youth Cooperation Section, 5 December 2017

<sup>40</sup> This issue was also raised in the ROM Monitoring Report (June 2017)

<sup>41</sup> Interview with UNESCO Amman Project Team, 19 November 2017

<sup>42</sup> Interview with Marwan Turman, Head of EMIS and E-Learning Division, QRC, 5 December 2017

data, the urgency of meeting these demands meant the UNESCO EMIS project team often had to step in as the primary point of contact for EMIS data and reporting requests.<sup>43</sup> An EU consultant who periodically required EMIS data in order to monitor education sector performance also reported that, as QRC were not able to respond to his requests for EMIS data, the UNESCO project team became his primary interlocutors for EMIS data requests.<sup>44</sup>

#### 4.7.4. IMPACT

**The project is well-positioned to generate meaningful change in the future.** With the implementation of the EMIS complete and the system fully operational, future support can focus strongly on building MoE capacity to autonomously manage and utilize the system to its full potential. An important impact of the project in the medium term will be the utilization of the EMIS to generate and monitor KPIs during the implementation of the upcoming Education Sector Plan. The EMIS should also support MoE in continuing a positive and constructive relationship with donors by allowing it to respond effectively to requests for data and demonstrate evidence-based decision-making.

#### 4.7.5. SUSTAINABILITY

**The core IT and data collection aspects of the EMIS are likely to be sustainable into the future, although use of the EMIS for evidence-based policy-making needs to be further reinforced before it is sustainable.** The OpenEMIS platform is now successfully established and data collection procedures across field directorates and schools are in place and likely to be sustainable. Further support will be required to strengthen the link between the core IT and data collection activities and reporting, such that the systematic incorporation of EMIS data into decision-making becomes sustainable.

#### 4.8. GENDER

A significant proportion of central MoE staff who have received training and capacity-building on OpenEMIS are women. At the school level, most principals and teachers who have received training on OpenEMIS and are largely responsible for OpenEMIS data collection are women.

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<sup>43</sup> Interview with UNESCO Amman Project Team 19 November 2017

<sup>44</sup> Interview with Dr. Joachim (Joe) Friedrich Pfaffe, EU consultant, 6 December 2017

## 5. LESSONS LEARNED

- 1. The design of the project underestimated the magnitude of implementing OpenEMIS in a country of Jordan's size and the corresponding capacity building needs of MoE.** The full customization of OpenEMIS to the Jordanian context and MoE requirements, roll-out across the country and linking of the system to other public-sector databases took much longer than initially anticipated. MoE's institutional capacity to absorb the OpenEMIS technology was also lower than expected. Efforts towards the end of the project to intensively build MoE capacity and accelerate knowledge transfer were not sufficient to ensure that MoE was able to independently manage and utilize OpenEMIS to its full potential by the close of the project.
- 2. A disconnect between UNESCO/MoE's initial conception of the EMIS and the subsequent vision of other key MoE stakeholders for the system's purpose and functionality delayed and complicated OpenEMIS implementation.** The initial idea behind OpenEMIS was that it would be primarily a tool for aggregating, analyzing and reporting on educational data and statistics to provide a basis for and strengthen evidence-based policy- and decision-making. However, from the pilot-testing phase onwards the UNESCO project team had to accommodate repeated requests from MoE that OpenEMIS be customized to support various MoE internal processes and workflows – from student and teacher transfers to examinations administration. The expansion of the scope of OpenEMIS to accommodate numerous Enterprise Resource Planning (ERP) features led to the creation of a system that is more complex to manage and use than initially anticipated, and drew time and resources away from building MoE capacity on the core data analysis and reporting aspects of OpenEMIS.
- 3. A lack of clearly defined roles and responsibilities within MoE in relation to the EMIS negativity impacted project implementation and sustainability.** MoE's decision early in the project to transfer responsibility for OpenEMIS from the Policy and Planning Department to QRC caused delays to the project timeline and a lack of clarity around departments' and individuals' roles and responsibilities in relation to OpenEMIS within MoE. The decision also served to weaken the link between the core data storage and management aspects of OpenEMIS and the use of educational data to drive evidence-based policy-making: QRC is focused on data collection and management of the IT aspects of OpenEMIS, but lacks the capacity and perspective for generating custom reports and indicators and linking EMIS data to planning and decision-making processes. At the same time, due to a combination of staff turnover, lack of capacity and lack of engagement with the OpenEMIS project among certain key stakeholders, the Policy and Planning Department is also not able to generate reports and drive the integration of EMIS data in MoE planning and decision-making processes.
- 4. The project adapted well to unanticipated external developments, but these had an unavoidable negative impact on project implementation.** The need to respond to out-of-scope external requests in relation to the EMIS – most notably the requirement to modify OpenEMIS to collect and disseminate data on Syrian refugees in Jordanian schools and to support the Ministry of Finance in the one-off disbursement of government funds to every Jordanian student in a public school – drew time and resources away from core OpenEMIS implementation and capacity-building activities. Yet meeting these requests served to increase OpenEMIS visibility and credibility among key MoE and donor stakeholders. The same is true for the addition of the 'Complementary Technical Advisory Services' project component in the final year of the project – which provided important support to MoE in a series of key strategic areas and reinforced UNESCO's credibility at the policy level, but impacted negatively on the core EMIS workstream.

5. **Top-level MoE engagement and support is crucial for the successful implementation and sustainability of a large-scale technical assistance project such as OpenEMIS.** The decision by the former Minister for Education to transfer responsibility for the EMIS from the Policy and Planning Department to QRC left the EMIS institutionally adrift and without clear ownership and oversight of the project within MoE. This negatively impacted on the project timeline and left the UNESCO project team without the most suitable interlocutors for building capacity on the data utilization and reporting functions of OpenEMIS. The current Minister for Education's reportedly stronger direct engagement with the EMIS provided a boost to the implementation of OpenEMIS activities in the final year of the project (notably data collection for the 2017-2018 school year), and provides a positive foundation for the next phase of the project.

## 6. RECOMMENDATIONS

Any future iteration of the project should:

- 1. Continue building QRC's capacity to maintain and manage the core IT aspects of the OpenEMIS platform, but identify a more suitable MoE counterpart for strengthening the link between EMIS data and its utilization for evidence-based policy formulation.** QRC will continue to house the physical OpenEMIS hardware and technological infrastructure, and will require additional capacity building to be able to independently maintain and manage the system. QRC is also likely to have primary responsibility for driving EMIS data collection. However, QRC lacks the capacity to use EMIS data to develop and monitor indicators and generate custom reports for various MoE departments. As such, a more suitable MoE counterpart should be identified to take responsibility for utilizing EMIS data for evidence-based policy formulation. Given the currently weak capacity of the Policy and Planning Department in this regard, this is likely to entail identifying suitable counterparts across other MoE departments or supporting the set-up and capacity building of a new, dedicated MoE unit or sub-department for evidence-based policy formulation.
- 2. Incorporate broader institutional support for building a culture of evidence-based policy making in MoE.** Even with a bolstered QRC capacity to manage and maintain the system and the identification of suitable MoE interlocutors for strengthening the utilization of EMIS data, effectiveness and impact will still be limited without broader efforts to support the development of an institutional culture of evidence-based policy making throughout MoE. Such activities might include providing key MoE departments (outside of QRC and the Policy and Planning Department) with training and capacity building on best practices in evidence-based policy-making, and supporting cross-departmental sharing of data and collaboration on reporting and indicator monitoring.
- 3. Conduct a comprehensive stakeholder consultation to ensure cross-MoE consensus on the primary features and functionalities of the OpenEMIS platform, and clarify institutional roles and responsibilities in relation to the EMIS.** While a key advantage of OpenEMIS is that it can be continually modified and customized, the project should urgently seek to establish cross-MoE consensus on the primary features and functionalities of OpenEMIS. With the system considered 'settled', support can focus on capacity building and optimizing the use of EMIS data to its full potential, rather than on continued modifications and customization. The project should likewise seek to establish clearly-defined departmental and individual roles and responsibilities in relation to the EMIS. The results of these processes could usefully be encapsulated in a written charter to serve as a common point of reference.
- 4. Incorporate change management, communications and stakeholder management workstreams into the core project management component.** Sustainably embedding the EMIS into a newly-established culture of evidence-based policy formulation in MoE will require a more holistic project management approach that goes beyond the mere coordination of technical assistance. A change management module will help to smooth the path for the broader utilization and embedding of the EMIS across MoE, a communications plan will disseminate clear messaging around the uses and benefits of OpenEMIS, and a stakeholder management plan will ensure buy-in and support from key MoE stakeholders.
- 5. Ensure the project is coordinated and aligned with other donor support to MoE relating to planning, M&E, research and evidence-based policy making.** OpenEMIS capacity building and support for evidence-based policy making should be carefully coordinated with the development and monitoring of indicators for the upcoming Education Sector Plan, as well as other relevant donor

initiatives such as the DFID Educational Research Programme and the broader ERfKE framework. Coordination with donors on approaches to supporting the integration of Syrian students in Jordanian schools – and likely data needs – will also help to anticipate external demands on the EMIS.

## 7. ANNEX 1: LIST OF SECONDARY DATA

The table below lists the documents and secondary data that was reviewed as part of the evaluation:

Document	Source
<b><i>EU project documents</i></b>	
Original EMIS Project Document (2013)	EU
Revised EMIS Project Document – Amendment 1 (2014)	EU
Revised EMIS Project Document – Amendment 2 (2016)	EU
Revised EMIS Project Document – Amendment 3 (2017)	EU
<b><i>Evaluations and assessments</i></b>	
Support to Jordanian EMIS System – Phase 2 (September 2017 – August 2020): Project Document (May 2017)	UNESCO
ROM Monitoring Report (June 2017)	EU
<b><i>Narrative reports</i></b>	
EMIS Interim Narrative Report (February 2017)	UNESCO
Project Brief Update (September 2017)	UNESCO

## 8. ANNEX 2: LIST OF INTERVIEWS WITH KEY PROJECT STAKEHOLDERS

The table below lists the key project stakeholders and implementing and sub-contracted partners with whom interviews were conducted as part of the evaluation:

Name	Position
<b>Key stakeholder: Ministry of Education</b>	
<b>Key project counterparts</b>	
HE Sami Salaytah	MoE Secretary General for Administration and Financial Affairs
Eng. Firyal Aqel	Director of DCU (Development & Cooperation Unit)
<b>Planning &amp; Research Department</b>	
Dr. Saleh Al-Khalayleh	Director of the Planning Department
Dr. Abdullah Hassoneh	Director of the Strategic Planning Directorate
Eng. Safa' Beiruti	Head of the school mapping unit/Planning department
<b>Queen Rania Alabdullah Center for Technology in Education</b>	
Marwan Turman	Head of EMIS & eLearning Division/QRC
<b>Key stakeholder: EU Delegation</b>	
Job Arts	Attaché/Programme Manager Education and Youth Cooperation Section
Dr. Joe Pfaffe	EU Education Consultant
<b>Key stakeholder: UNESCO Amman</b>	
Costanza Farina	Director of UNESCO Amman Office
Yukiko Matsuyoshi	Education Chief
Pierre Chapelet/Sa'eda Ramzi/Yuji Utsumi	Project Manager & Project Team
<b>Key stakeholder: EMIS Sub-Technical Committee &amp; Individual Consultants</b>	
Dr. Omar Al-Jarrah	Chairman of JUST University (Jordanian University of Science & Technology); Chair of OpenEMIS Technical Steering Committee.
Dr. Mahmoud Smadi	Associate Professor/Department of mathematics & Statistics/JUST University; Statistical Consultant

**Implementation partner: Community Systems Foundation**

Nilhan Siam

Jordan EMIS Programme Advisor/CSF

**Sub-contracted partner: PwC**

Nawwar Abdul Majeed

Project Manager/ PwC

## 9. ANNEX 3: LIST OF FIELD OBSERVATION VISITS AND INTERVIEWS

The table below lists the locations for field observation visits and people with whom interviews were conducted in Field Directorates and schools as part of the evaluation:

Name	Position
<i>Middle Region – Amman Governorate</i>	
<b>Liwa Al-Jamma Field Directorate</b>	
Rodainah Salamat	EMIS Officer in Field Directorate
<b>Um Tofayl Secondary School</b>	
Aysha Shurbaji	EMIS Officer in the school
<i>Middle Region – Zarqa Governorate</i>	
<b>Zarqa 2 Field Directorate</b>	
Alaa Alzyood	Zarqa 2 Field Directorate, Resources Department
<b>Iskan Alhashmiya Mixed, Double-shift School</b>	
Maysoon Ali Omari	Principle, Second Shift
Mervat Taib Alosan	Computer teacher, EMIS Officer
<i>North Region – Irbid Governorate</i>	
<b>Liwa Bani Obeid Field Directorate</b>	
Kholoud Shaawatah	Head of Planning, Field Directorate
<b>Al-Hoson Secondary School</b>	
Rania Shraideh	EMIS Officer in the school
<i>Middle Region – Madaba Governorate</i>	
<b>Madaba Field Directorate</b>	
Mohammad Al Thawabieh	Head of Planning, Field Directorate
<b>Khadija Bent Khuwailed Primary School</b>	
Areej Khalil Alqaisi	Principle
Zikra Fayed Quteish	Computer Teacher, EMIS Officer

# 10. ANNEX 4: BENEFICIARY INTERVIEW GUIDELINES

## ENGLISH

*Introduction to the evaluation and the context of the interview,*

1. Could you please tell me in your own words what you understand about EMIS? What is it? How does it work? Why is it important?
2. Do you feel that EMIS has been well-explained to you and that you understand the system and its uses?
3. Were you consulted on the design of the current EMIS? Was there an opportunity for you to have input into what the system should look like and do?
4. How do you personally interact with EMIS? What are your responsibilities in relation to the system?
5. Did you receive training on using EMIS? Was this training helpful? Is there any way you think the training could be improved?
6. If you have a problem with the system or there is something you don't understand, how do you resolve it? Is there someone you can go to for help?
7. Do you feel that you have sufficient knowledge and understanding to use EMIS effectively? What are the things you understand well about the system, and things you don't understand so well? Who would you ask if there is something you don't understand? Have you sought help on any aspect of using EMIS before? What was it and who did you go to for help? Were you able to resolve the issue?
8. How much time do you spend using or updating EMIS? Per day? Per week? Does this interfere with your other work? Would you say that EMIS has any negative impacts on your job? If so, what are they?
9. Do you find the system user-friendly? Do you experience any problems using the system? Is there any way you think it could be improved?
10. How does your field directorate/school use EMIS? Can you give me some examples of how you have used it for decision-making? Or how the system has been useful to you in doing your work?
11. In your job, what are the most important types of data that you need to make decisions? Do you use EMIS to get this data? Are there other systems or means for obtaining this data?
12. What kind of data does EMIS provide on students? How do you update and use this data?
13. What kind of data does EMIS provide on teachers and staff? How do you update and use this data?
14. What kind of data does EMIS provide on the school and its facilities? How do you update and use this data?
15. Do you feel that EMIS is useful? Do you think it improves and strengthens the education system in Jordan? If you met a colleague from another country where they do not have an EMIS, would you recommend it to them? Why/why not?
16. Are there any particular things that you feel make it difficult to successfully implement and run an EMIS such as this in Jordan? What are they? How could the system be better suited to the local context in Jordan?

## ARABIC

الإطار العام للتقييم والمقابلات الميدانية:

١. كيف تعرف نظام المعلومات التربوي EMIS؟ ما المقصود به وكيف يعمل وما أهميته؟
٢. هل فتر النظام بشكل جيد لك؟ وبالتالي، أتعرف جيدا ما هو هذا النظام التربوي وما استخداماته؟
٣. هل أشرت في تصميم نظام الـ EMIS الحالي؟ هل تسنى لك إبداء الرأي في كيفية تصميمه (ما سيبدو عليه وما استخداماته)؟
  ٤. كيف تستخدم هذا النظام؟ ما هي المسؤوليات المناطة لك؟
  ٥. هل تلقيت تدريباً حول كيفية استخدام هذا النظام؟ هل كان التدريب مفيداً؟ براك، كيف يمكن تحسين هذا التدريب؟
  ٦. إن واجهتك مشكلة عند استخدامك للنظام ولم تسطع فهم أمر معين به، كيف تقوم بحل المشكلة؟ هل تلجأ لأحد للمساعدة؟
    ٧. هل أنت على اطلاع وفهم كامل للنظام بحيث يمكنك من استخدامه بفعالية؟
      - ما هي الأمور التي ترى أنك على معرفة ودرجة بها وتلك التي لا تفهمها جيداً؟
      - ممن تطلب المساعدة في حل تعذر عليك فهم أمر معين في هذا النظام؟ هل طلبت المساعدة مسبقاً؟ ما هي المشكلة ولبن لجأت وهل تمكنت من حلها؟
      ٨. ما معدل الوقت الذي تمضيه يوماً وأسبوعياً في استخدام هذا النظام أو تحتيته؟
        - هل يتضارب استخدامك للنظام وأداء مهامك الأخرى في العمل؟
        - هل للنظام تأثيرات سلبية على عملك؟ ما هي؟
      ٩. براك، هل النظام سهل الاستخدام؟ هل تواجه أي مشاكل في استخدامه؟ كيف يمكن تحسينه؟
        ١٠. كيف تستخدم مدير يتك/مدرستك/مدرستك هذا النظام؟ هل من أمثلة حول استخدامك له في صنع القرار؟ أو هل استفدت من النظام في عملك؟
          ١١. في عملك، ما هي أهم البيانات التي تحتاجها لصنع القرارات؟ هل تستعمل هذا النظام لإستخراج هذه البيانات؟ هل من أنظمة أو وسائل أخرى للحصول على هذه البيانات؟
          ١٢. ما البيانات التي يزداد النظام بها الطلاب؟ كيف تقوم بتحديث واستخدام هذه البيانات؟
          ١٣. ما البيانات التي يزداد النظام بها المعلمين وطاقم العمل في المدرسة؟ كيف تقوم بتحديث واستخدام هذه البيانات؟
          ١٤. ما البيانات التي يزداد النظام بها المدرسة؟ كيف تقوم بتحديث واستخدام هذه البيانات؟
          ١٥. براك، هل تعتبر أن النظام مفيداً؟ هل يحسن ويعزز من النظام التعليمي في الأردن؟ هل توصي باستخدامه في البلدان الأخرى؟ لماذا؟
          ١٦. هل من صعوبات تعيق وتطبيق هذا النظام بفعالية في الأردن؟ ما هي؟ كيف لهذا النظام أن يتلائم والسباق المحلي في الأردن؟

## 11. ANNEX 5: OECD DAC CRITERIA INDICATIVE QUESTIONS

Criteria	Indicative questions
<b>Relevance</b>	<ul style="list-style-type: none"> <li>• When it was designed to what extent were the overall objectives of the project and those of each component consistent with the needs of the country and the beneficiaries' requirements?</li> <li>• To what extent was the project model contextually appropriate and responsive to the needs of the beneficiaries? How has this model gained resonance with or generated support from local stakeholders (government, private sector, communities)?</li> <li>• As the context continuously changed was the Programme and each component/activities still relevant? Were the changes made in response sufficient?</li> <li>• Was it appropriate to have a country project of six components and multiple activities? Were the components and activities integrated or not, and if not, should they have been?</li> <li>• Which activities of the project should be flagged for further exploration or analysis?</li> <li>• To what extent has the project fostered coordination with other funders/initiatives and integration with other providers of similar activities?</li> </ul>
<b>Efficiency</b>	<ul style="list-style-type: none"> <li>• Did any external/internal factors positively or negatively influence the project's implementation? Were any problems or bottlenecks encountered? If so, what were they?</li> <li>• Were the outputs delivered in a timely manner? Where applicable, were delays experienced by the project reasonable, given the local context?</li> <li>• What measures were taken to ensure that resources were efficiently used?</li> <li>• Was the project overall, and each component/activity, cost efficient (funding, personnel, installations and resources?)</li> </ul>
<b>Effectiveness</b>	<ul style="list-style-type: none"> <li>• How well did UNESCO plan, manage, and coordinate the project overall?</li> <li>• To what extent were the objectives achieved? What major factors influenced the achievement or non-achievement of the objectives? How well were the objectives designed initially and what can be improved for the design of future projects?</li> <li>• Did the context in Jordan affect delivery of the project? Did UNESCO plan well for potential changes?</li> <li>• Were there examples of innovation and best practice?</li> <li>• How effective and useful was the project's M&amp;E strategy? How adequate were data collection tools to obtain useful and valid/reliable data? To what extent were data supporting project related decision-making and allowing the program to make timely adjustments?</li> <li>• To what extent were beneficiaries (direct and indirect) satisfied with the services delivered?</li> <li>• What were the positive and negative, primary and secondary short-term effects produced by the project, directly or indirectly, intended or unintended?</li> </ul>

<b>Impact</b>	<ul style="list-style-type: none"> <li>• To what extent is the project positioned to generate meaningful change in the future, considering that the impacts of such interventions are often longer term in nature?</li> <li>• What are possible short- and medium-term positive/negative impacts of the project?</li> <li>• How can positive aspects be maximized or replicated/scaled up in the future?</li> <li>• To what extent are differences in impact explained by variations in implementation?</li> </ul>
<b>Sustainability</b>	<ul style="list-style-type: none"> <li>• Will the benefits from the project continue into the future and what is the probability of continued longer-term benefits?</li> <li>• What aspects of the project are likely to be most sustainable into the future?</li> </ul>