



## Rehabilitation of the Iraqi Specialized Institute for Engineering Industries Baghdad Governorate

### FINAL PROGRAMME NARRATIVE REPORT

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## I. PURPOSE

The present project intended to assist Iraq in its endeavors for the reconstruction of its economic infrastructure. It specifically provided support for the rehabilitation of the Specialized Institute for Engineering Industries (SIEI), which due to the war and subsequent sanctions has suffered extensive damage, including the total or partial destruction of its laboratories and production workshops. The successive conflicts have also hindered its technical capacities and access to new information on modern technologies, international standards and quality assurance systems.

Under this project, assistance was provided to rebuild the capacity of the SIEI to assist the Iraqi industries with the application of national standards and adaptation of international standards to their needs, to carry out proper quality assurance activities and testing of industrial products and to seek international recognition of its competence through accreditation. The project provided assistance in:

- Training a substantial number of SIEI managerial and technical staff on standardization, quality assurance, and conformity assessment (testing, inspection and certification) subjects;
- Acquiring appropriate instrumentation, equipment and reference materials for its testing/calibration laboratories and production workshop; and
- Initiating testing and other product quality assurance activities for the local manufacturing industry, service sector and consumers.

The project included significant emphasis on technology transfer related to operational techniques, procedures and policies issues.

### a. Project Outcome

- Enhanced capacity of the SIEI/Ministry of Industry to respond to the needs of the manufacturing industry, service sector, and consumers and to facilitate industrial development in Iraq.
- Industry has access to improved services that would enable precision manufacture and quality improvement of their products.

### b. Immediate Objectives

- A comprehensive framework developed for the SIEI to support the development of industries in Iraq through the provision of technical and information support, quality assurance, and conformity assessment services (testing, inspection, certification, etc.).
- The managerial and technical staff of the SIEI has acquired the knowledge and skills necessary to meet the needs of the manufacturing industry, service sector, and consumers.
- The SIEI laboratories, production workshop, and library are rehabilitated to adequately respond to the demands of the manufacturing industry, service sector, and consumers.

### **c. National Development Strategy**

- Pillar One: Strengthening the foundations of economic growth: *Economy diversification (third element) - Developing the institutional structure to promote industrial sector competitiveness.*
- Pillar Two: Revitalize the private sector particularly through the creation of an enabling environment (6.5. Manufacturing sector): *(i) Achieving a significant increase in the annual production of industrial enterprise in comparison with 2002; and (ii) Strengthening standardization and quality assurance services.*
- Pillar Three: *Improving the quality of life.*

### **d. International Compact for Iraq**

Economic Reform Goal (4.3): Create an enabling environment for investment, public and private, domestic and foreign, as a driver for sustainable and diversified economic growth and job creation; create the conditions for maximizing the benefits from foreign aid and investment and integration into the global economies. More specifically, the project will contribute to the Goal (4.3.4) - Regional and International Economic Integration.

### **e. Main Expected Outputs**

The project's main outputs were:

- A comprehensive framework developed for the SIEI to support the development of the industries in Iraq through the provision of technical and information support, quality assurance and conformity assessment services (testing, inspection, certification, etc.).
- The managerial and technical staff of the SIEI has acquired the knowledge and skills necessary to meet the needs of the manufacturing industry, service sector and consumers.
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Section "Results" provides the detailed activities implemented and outputs achieved.

### **f. Key Beneficiaries**

The project has benefited the following categories of beneficiaries:

- The primary beneficiary of the project was the Specialized Institute for Engineering Industries (SIEI), which benefited from enhanced capacity both in terms of skills development and in terms of equipment for testing and calibration laboratories, production workshop, information facilities, etc.
- The secondary beneficiaries of the project were the line Ministry for the SIEI (Ministry of Industry) and the apex institutions dealing with Standards, Accreditation, Metrology and Testing in the country (Central Organization for Standardization and Quality Control – COSQC, etc.).

- The tertiary beneficiaries were the local manufacturing and service facilities that benefited from having access to standards information, calibration and testing facilities, and inspection and certification services.

**g. Primary implementing partners**

The project was implemented in line with the existing institutional framework, with the Ministry of Industry (MoI) and the SIEI as the main partners for the implementation of the project.

The project involved a strong collaboration with the line ministry through the establishment of a Project Steering Committee. The latter had the responsibility of: (i) advising the project on strategic directions/decisions and support activities to be provided; (ii) ensuring the effective cooperation between all key stakeholders; and (iii) advising on the effectiveness of the ongoing activities, including any adjustments that need to be made to the annual work plan.

## **II. ASSESSMENT OF PROJECT RESULTS**

**a. Key outputs achieved**

Below presented are the key outputs achieved (See also Section IV - Indicator Based Performance Assessment):

***Output 1:***

***A comprehensive framework developed for the SIEI to support the development of the industries in Iraq through the provision of technical and information support, quality assurance and conformity assessment services (testing, inspection, certification, etc.).***

Under this output, the project has:

- Evaluated, reviewed, and updated the policies and procedures that address the operation of the SIEI and its related activities and services (testing & calibration, product certification, import/export inspection, product design, training, etc.).
- Reviewed and updated the legal and regulatory framework covering the institutional setting and the mandate of SIEI, to fit the international best practice.
- Carried out a sensitization/awareness programme for representatives of SIEI/MoI, the public and private sector, and structures cooperating with SIEI (Central Organization for Standardization and Quality Control - COSQC, etc.) on the role of standardization and conformity assessment in the compliance of local products with international standards and market requirements and protection of consumers from sub-standard products.
- Conducted a specific training programme for the SIEI/MoI, representatives of the Central Organization for Standardization and Quality Control (COSQC), and the private sector, on the development of national and international standards, adaptation of international standards to local needs, and inspection and certification of industrial products and systems.

- Evaluated the internal and external communication policies of SIEI and developed: (i) recommendations to generate better understanding of the institute’s objectives throughout the Iraqi industries; (ii) Publicity material (promotional brochures, web pages, etc.) aimed at increasing SIEI services visibility among industries and consumers.

**Output 2:**

***The managerial and technical staff of the SIEI has acquired the knowledge and skills necessary to meet the needs of the manufacturing industry, service sector and consumers.***

The project has allowed for know-how transfer in quality (SMTQ) and manufacturing and managerial skills to several SIEI staff. The focus was on the following areas:

- Knowledge and skills in the fields of standardization, quality assurance, and conformity assessment services (testing and material analysis, inspection, certification, etc.).
- Knowledge and skills in the fields of modern welding technologies, general industrial maintenance, and production workshop management, etc.
- Knowledge and skills in the fields of project management; leadership, preparing business plans and feasibility studies; network administration, etc.

At the end of the project cycle, the project had trained 229 beneficiaries as provided in the following tables:

<b>Total Number of Training Programmes</b>	<b>33</b>
Abroad	24
In Iraq	9
<b>Total Number of Trainees</b>	<b>229</b>
Female	123
Male	106

**Management Training Courses**

<b>Training/Course</b>	<b>No. of Participants</b>
CONFAR: Industrial Feasibility Studies	2
Success in Management and Effective Organization	6
Strategy and Strategic Marketing	5
Organizing the Structure of SIEI and Staff Posting Seminar	5
Leadership and Management Skills Training (top management)	5
Leadership and Management Skills Training (SIEI mid-management)	31

### Technical Training Courses

<b>Training/Course</b>	<b>No. of Participants</b>
Pipe Fitting and Pipe Welding (incl. certification)	8
Tig (Tungsten Inert Gas) Welding Process	2
Steel Structures and High Pressure Pipe Design and Welding	12
Industrial Visit to FESTO/ Academy and Technology	5
Library Management Training	2
Microsoft Office Training	27
Training on AutoCAD (Software Application For Computer-Aided Design)	13
Training on CNC Machines	4

### Laboratory Testing Training Courses

<b>Training/Course</b>	<b>No. of Participants</b>
XRD X-Ray Diffraction Operation - Analysis - Characterization	7
Laboratory Accreditation: ISO/IEC 17025 Principles of Quality Management in the Laboratory & Principles and Requirements of ISO/IEC 17025 Standard	8
Electrical Inspection and Testing of Cables and Circuit Breakers	7
NDT Level 2 on PT (Penetrant Testing) and MT (Magnetic Particle Testing )Methods	5
NDT Level 2 on RT (Radiography) and UT (Ultrasonic Testing) Methods	6
Metrology and Calibration: Fundamental Concepts, Dimensional, Mass, Force, Equipment Calibration	8
NDT Level 3 on PT (Penetrant Testing), MT (Magnetic Particle Testing ), RT (Radiography) UT (Ultrasonic Testing) and Methods	2
Training on Atomic Absorption Spectrophotometer	10
Training on Density meter	5

### Standardization Training Courses

<b>Training/Course</b>	<b>No. of Participants</b>
Awareness Training on Quality Management Principles – ISO 9000 (Quality Management Systems), ISO 14000 (Environmental Management Systems), ISO 18000 (Occupational Health and Safety Management Systems)	9
Quality Management Systems ISO 9001 – Lead Auditor Training	8
Environmental Management Systems ISO 14001 – Internal Auditor Training	8
Lead Auditor Training	8

**Number of SIEI technical staff who obtain an internationally recognized certificate per subject**

<b>Subject</b>	<b>Number</b>
6-G certification in Pipe Welding	2
Approved TIG Welder as per 287-1:2004	2
NDT/Level 2 in MT	5
NDT/Level 2 in PT	5
NDT/Level 2 in RT	3
NDT/Level 2 in UT	3
NDT/Level 3 in MT	2
NDT/Level 3 in PT	2
NDT/Level 3 in RT	2
NDT/Level 3 in UT	2
Internal Auditor in ISO 14001	8
Lead Auditors in ISO 9001	5
Lead Auditors in ISO 9001	8

**Output 3:**

*The SIEI laboratories, production workshop and library are rehabilitated to adequately respond to the demands of the manufacturing industry, service sector and consumers.*

The project has acquired appropriate equipment, instrumentation/tools, and reference materials for the SIEI testing/calibration laboratories and production workshop, and assistance has been provided in preparing the laboratories towards international accreditation of their services. The following labs were upgraded:

- ✓ Chemicals testing Laboratory
- ✓ Metrology /Calibration Laboratory
- ✓ Mechanical testing Laboratory
- ✓ Materials testing Laboratory
- ✓ NDT testing Laboratory

The project has also established the SIEI new Metrology lab which offers calibration services for dimensional, pressure, force, temperature, and mass measuring instruments.

The project has further rehabilitated and provided the SIEI library with up-to-date facilities, engineering and technical periodicals, test reports, etc. to serve the industrial information needs of the local industries.

**b. Project Outcomes**

- The project interventions have led to the rehabilitation of the SIEI testing laboratories and skill's upgrading of both its managerial and technical staff. Currently, the SIEI's laboratories are able to carry a wide-range of material testing services, including

nondestructive testing. It became one of the largest laboratories in the industry fully capable of testing materials of all shapes, sizes and quantities.

- ✓ The Materials and Mechanical Testing Laboratories of SIEI have been internationally accredited against the requirements of ISO/IEC 17025.
- ✓ The newly SIEI's organizational structure is providing more visibility for each its departments and improving the communication among them.
- ✓ The institute's new business is currently under implementation leading to increasing quality of services and revenues.
- ✓ The SIEI staff is able to perform internal and external auditing in ISO 9001 and ISO 14000.
- ✓ As part of the strategic goals of SIEI towards the constant improvement and sustainable development of its business, the SIEI has achieved the ISO 14001-2004 certification.
- ✓ Measurement services performed by the Materials and Mechanical Testing Laboratories of SIEI against the requirements of ISO/IEC 17025 are internationally traceable and acceptable.

### **c. Reference to how the project related to the UN Assistance Strategy to Iraq and MDGs**

UNIDO's rehabilitation of the Specialized Institute for Engineering Industries in Baghdad was designed as an integral part of the framework of the Joint UN-Iraq Assistance Strategy, Economic Reform and Diversification Sector Outcome team. It has direct linkage to supporting economic recovery through rebuilding the capacities of the SIEI and technical support services to assist the Iraqi industry improving their manufacturing process, product quality, enhancing their competitiveness and protecting the safety of the consumers. The project is also an integral part of the Iraqi National Development Strategy (NDS), which aims at revitalizing the private sector (Manufacturing Sector).

The project is directly contributing to the attainment of the UNs MDGs for Iraq through: *Goal 7* - Ensure environmental sustainability through development and implementation of SIEI Environmental Management System as per the ISO 14001:2004 standard requirements. And *Goal 8* - Develop a global partnership for development by enhancing accessibility to new technologies.

## **III. EVALUATION**

The project independent evaluation is on-going and the final report is expected by end March 2013.

## **IV. INDICATOR BASED PERFORMANCE ASSESSMENT**

The following Results Framework table provides a detailed overview of the core components of the SIEI project.

#### IV. Result Framework Table

<b>Project Title:</b>	Rehabilitation of the Specialized Institute for Engineering Industries							
<b>NDS/ICI priority/ goal(s):</b>	<p><u>NDS Goals</u>  Pillar One: Strengthening the foundations of economic growth.  Pillar Two: Revitalize the private sector particularly through the creation of an enabling environment.  Pillar Three: Improving the quality of life.</p> <p><u>ICI Economic Reform Goal</u>  To create an enabling environment for investment, public and private, domestic and foreign, as a driver for sustainable and diversified economic growth and job creation; create the conditions for maximizing the benefits from foreign aid and investment and integration into the global economies.</p>							
<b>UNCT Outcome:</b>	Enabling environment created for Sustaining Economic Reform and Development							
<b>Sector Outcome:</b>	Economic Reform and Diversification Sector Outcome 1: Improved policies, strategies and related institutional developments that are sensitive to the MDG's, social inclusiveness, gender equality and pro-poor economic growth.							
<b>Outcome 1:</b>	Enhanced capacity of the SIEI/Ministry of Industry to respond to the needs of the manufacturing industry, service sector and consumers and to facilitate industrial development in Iraq.				<b>NDS / ICI Priorities:</b>			
					<ul style="list-style-type: none"> <li>• Strengthening the foundations of economic growth;</li> <li>• Revitalize the private sector particularly through the creation of an enabling environment.</li> </ul>			
<b>Outputs</b>	<b>UN Agency Specific Output</b>	<b>UN Agency</b>	<b>Partner</b>	<b>Indicator(s)</b>	<b>Source of Data</b>	<b>Baseline Data</b>	<b>Indicator Target</b>	<b>Achievements (Results)</b>
<u>Output 1.1:</u>	1.1.1 A clear policy and legal framework is defined for the role of the SIEI as a leading institute for technical support, quality assurance, and conformity assessment services in Iraq.	UNIDO	- MoI - SIEI	SIEI policy and legal framework agreed upon by all stakeholders.	Policy and legal regulatory framework texts.	Existing legal/policy framework.	SIEI policy and legal framework agreed upon by all stakeholders.	<ul style="list-style-type: none"> <li>• Assessment conducted, recommendations made and final report submitted to the SIEI management for consideration/ implementation.</li> <li>• Organization of SIEI restructured based on UNIDO expert recommendations.</li> <li>• Department farm duties indentified based on the organization -</li> </ul>

Outputs	UN Agency Specific Output	UN Agency	Partner	Indicator(s)	Source of Data	Baseline Data	Indicator Target	Achievements (Results)
								restructuring. <ul style="list-style-type: none"> <li>Business plan developed for the year 2010 to 2014.</li> </ul>
Output 1.1:	1.1.2. SIEI managerial and technical staff comprehends the international developments in standardization, quality assurance, and conformity assessment services.	UNIDO	- MoI - SIEI - COSQC	Number of SIEI technical and managerial staff trained on standardization, quality assurance and conformity assessment matters.	<ul style="list-style-type: none"> <li>Training reports</li> <li>Progress reports</li> <li>M&amp;E</li> </ul>	Data on current level of understanding /awareness on standardization and quality assurance services among managerial and tech. staff - (no. of courses conducted, staff attitude towards quality & standards, etc.)	<ul style="list-style-type: none"> <li>10 engineers</li> <li>5 managerial staff</li> </ul>	<ul style="list-style-type: none"> <li>Awareness Training on ISO 14000, ISO 18000, and ISO 9000 conducted in Amman, Jordan from 10<sup>th</sup> to 15<sup>th</sup> of April 2010.  <b>Training Participation Certificates awarded.</b>  <i>Number of Trainees: 9 (5-M, 4-F)</i>  <i>(Eng. =6 , Manager = 2, technician = 1)</i> </li> <li>Training on ISO/IEC 17025 (Laboratory accreditation) conducted in Beirut, Lebanon from 15<sup>th</sup> to 18<sup>th</sup> of October 2010.  <b>Training Participation Certificates awarded.</b>  <i>Number of Trainees: 8 (1-M, 7-F)</i>  <i>(Eng. =6 , Managers = 2)</i> </li> <li>Training on Equipment Calibration, Method Validation, and Establishment of Quality Control conducted in Beirut, Lebanon from 15<sup>th</sup> to 18<sup>th</sup> of October 2010.  <i>Number of Trainees: 8 (1-M, 7-F)</i>  <i>(Eng. =6 , Managers = 2)</i> </li> </ul>

Outputs	UN Agency Specific Output	UN Agency	Partner	Indicator(s)	Source of Data	Baseline Data	Indicator Target	Achievements (Results)
								<ul style="list-style-type: none"> <li>• Training on ISO 14001 (Environmental Management System Internal Auditing Training) conducted in Amman, Jordan, from 27<sup>th</sup> Feb to 2<sup>nd</sup> March, 2011. <b>Internal Auditors Certificates awarded.</b> <i>Number of Trainees: 8 (2-M, 6-F)</i> <i>(Eng.=5, Managers=2, technician = 1)</i></li> <li>• Training on ISO 9001 lead auditor, conducted in Amman/Jordan from 5<sup>th</sup> to 9<sup>th</sup> Feb, 2012. <b>Lead Auditor Certificates awarded.</b> <i>Number of Trainees: 8 (1-M, 7-F)</i> <i>(Eng. =4, Managers=3, technician = 2)</i></li> </ul> <p><b>Development and implementation of SIEI Environmental Management System as per the ISO 14001:2004 standard requirements.</b></p>

Outputs	UN Agency Specific Output	UN Agency	Partner	Indicator(s)	Source of Data	Baseline Data	Indicator Target	Achievements (Results)
								<ul style="list-style-type: none"> <li>• Documentation of the system and implementation completed and included: Environmental policy and objectives, environmental aspects and impacts, legal &amp; other requirements, control of documents, operational control, waste management, emergency preparedness and response, monitoring and measurement, internal audit, management review, non-conformities and corrective and preventive actions, control of records, training, awareness, and competence, operational control work instructions.</li> <li>• Completing awareness training material and conducted awareness sessions for staff.</li> <li>• Conducting a cycle of internal audit - completed.</li> <li>• Conducting a management review meeting - completed</li> <li>• Applying for certification made in June 2012.</li> <li>• Certification was granted in August 2012 in ISO 14001.</li> </ul> <p><b>Summary:</b>  - Number of Trainees: 41 (11-M, 30-F)  - Beneficiary Department: Labs and QM  - (Eng.= 25 Managers =11 , technician = 5)</p>

Outputs	UN Agency Specific Output	UN Agency	Partner	Indicator(s)	Source of Data	Baseline Data	Indicator Target	Achievements (Results)
								<p><i>5 Staff members became certified lead Auditors in ISO 9001. Currently the total number of certified staff is 6 instead of 2 previously.</i></p> <p><i>8 Staff members became certified lead Auditors in ISO 14001. No certification was granted previously.</i></p> <p><i>8 Staff members became certified internal Auditors in ISO 14001. No certification was granted previously.</i></p>
<u>Output 1.1:</u>	1.1.3. The role and services of the SIEI promoted among the Iraqi industries.	UNIDO	- MoI - SIEI	<ul style="list-style-type: none"> <li>Nr. of promotional materials developed.</li> </ul>	<ul style="list-style-type: none"> <li>Brochures and other promotional materials.</li> </ul>	<ul style="list-style-type: none"> <li>Existing promotional materials</li> </ul>	<ul style="list-style-type: none"> <li>Existing promotional materials</li> </ul>	<ul style="list-style-type: none"> <li>Developed and issued the SIEI technical brochure describing its services. English and Arabic versions developed.</li> <li><b>500 copies</b> distributed to SIEI-main customers such as the Ministry of Industry, Electricity, Health and the private sector.</li> <li>Developed and issued the laboratory services specific promotional technical brochures. English and Arabic versions developed.</li> </ul>

Outputs	UN Agency Specific Output	UN Agency	Partner	Indicator(s)	Source of Data	Baseline Data	Indicator Target	Achievements (Results)
								<p><b>1250 copies</b> distributed to SIEI-main customers such as the Ministry of Industry, Electricity, Health, Baghdad Municipality, Ministry of Education as well as the private sector.</p> <ul style="list-style-type: none"> <li>The high demands lead for the need to re-issue an updated version of the services specific technical brochure again in English and Arabic.</li> </ul> <p><b>750 copies</b> distributed to SIEI-main customers such as the Ministry of Industry, Electricity, Health, Baghdad Municipality, Ministry of Education as well as the private sector.</p>
<p><u>Output 1.2:</u> The managerial and technical staff of the SIEI has acquired the knowledge and skills necessary to meet the needs of the</p>	<p>1.2.1. A comprehensive training programme for enhancing the knowledge and skills of the SIEI managerial and technical staff is defined.</p>	<p>UNIDO</p>	<p>- MoI - SIEI</p>	<ul style="list-style-type: none"> <li>Training programme defined.</li> </ul>	<ul style="list-style-type: none"> <li>Progress reports</li> <li>SIEI records</li> <li>M&amp;E</li> </ul>	<ul style="list-style-type: none"> <li>Existing training framework</li> </ul>	<ul style="list-style-type: none"> <li>Training programme on: <ul style="list-style-type: none"> <li>- Quality</li> <li>- Production</li> </ul> </li> </ul>	<p>SIEI human resources skills gap analyzed and overall training program identified for both management and technical subjects.</p> <p>Industry survey carried out to identify the needs of enterprises in Iraq for training and consultancy services for ISO 9001:2008, ISO 14001:2004, and OHS 18001:2007.</p>

Outputs	UN Agency Specific Output	UN Agency	Partner	Indicator(s)	Source of Data	Baseline Data	Indicator Target	Achievements (Results)
manufacturing industry, service sector, and consumers.								
<u>Output 1.2</u>	1.2.2. A number of the SIEI quality department engineers acquire the knowledge and skills in the fields of standardization, quality management, and conformity assessment services (testing and material analysis, inspection, certification, etc.).	UNIDO	- MoI - SIEI	<ul style="list-style-type: none"> <li>• Number of SIEI staff trained.</li> <li>• Level of expertise achieved</li> </ul>	<ul style="list-style-type: none"> <li>• Training reports</li> <li>• Progress reports</li> <li>• SIEI records</li> <li>• M&amp;E</li> </ul>	-	<ul style="list-style-type: none"> <li>• 12 engineers from SIEI Quality Department.</li> </ul>	<p>Training on CONFAR III, took place in Amman, Jordan from 15<sup>th</sup> to 26<sup>th</sup> Nov 2009.</p> <p><b>Training Participation Certificates awarded.</b>  <i>Number of Trainees: 2 (2-F) (Eng =2)</i>  Based on Expert recommendation as well as SIEI request during PSC meeting, trainings on NDT have been arranged to fulfill current market demands.</p> <p>Training on NDT/level 2 on MT and PT methods, took place in Rabat, Morocco from 16<sup>th</sup> May to 2<sup>nd</sup> June and from 10<sup>th</sup> to 27<sup>th</sup> October, 2011. (5+5) <b>Certificates awarded for NDT/level 2 in PT and MT.</b> (all in both methods)  <i>Number of Trainees: 5 (5-M) (Eng. =5)</i></p> <p>Training on NDT Level 2 on the RT and UT methods took place in Rabat, Morocco -</p>

Outputs	UN Agency Specific Output	UN Agency	Partner	Indicator(s)	Source of Data	Baseline Data	Indicator Target	Achievements (Results)
								<p>from 4<sup>th</sup> to 22<sup>nd</sup> July and from 12<sup>th</sup> to 31<sup>st</sup> December, 2011.  <b>(3+3) Certificates awarded for NDT/ level 2 in UT and RT.</b>  <i>Number of Trainees: 6 (6-M)</i>  <i>(Eng. =6)</i></p> <p>Training on NDT Level 3 on the PT, MT, RT, and UT methods took place in Vienna and Kiev from 2<sup>nd</sup> July to 10<sup>th</sup> August 2012.  <b>(4+4) Certificates awarded for NDT/ level 3 in PT, MT, UT, and RT.</b>  <i>Number of Trainees: 2 (2-M) (Eng. =2)</i></p> <p>Training on Metrology took place in Amman, Jordan from 26<sup>th</sup> June to 7<sup>th</sup> July, 2011.  <b>Training Participation Certificates awarded.</b>  <i>Number of Trainees: 8 (3-M, 5-F)</i>  <i>(Eng. =7, Managers=1)</i>  6 SIEI staff members and 2 from COSQC.</p> <p>Training on ‘Electrical Inspection and Testing For Cables and Circuit Breakers’ took place in Baghdad, Iraq from the 6<sup>th</sup> to the 17<sup>th</sup> of March, 2011.  <b>Training Participation Certificates awarded.</b>  <i>Number of Trainees: 7 (2-M, 5-F)</i>  <i>(Eng. =5, technician = 2)</i></p>

Outputs	UN Agency Specific Output	UN Agency	Partner	Indicator(s)	Source of Data	Baseline Data	Indicator Target	Achievements (Results)
								<p>Training on Electrical XRD X-Ray Diffraction Operation - Analysis - Characterization took place in Baghdad, Iraq from 24<sup>th</sup> April to 5<sup>th</sup> May, 2011.  <b>Training Participation Certificates awarded.</b>  <i>Number of Trainees: 7 (1-M, 6-F)</i>  <i>(Eng. =4 , Managers=3)</i></p> <p>Training on general IT knowledge, took place in Baghdad, Iraq from 15<sup>th</sup> to 24<sup>th</sup> November, 2011.  <b>Training Participation Certificates awarded.</b>  <i>Number of Trainees: 27 (7-M, 20-F)</i>  <i>(Eng. =8 , Managers=1 technician = 18)</i></p> <p>Training on AutoCAD took place in Baghdad, Iraq from 31<sup>st</sup> Jan to 12<sup>th</sup> Feb 2012.  <b>Training Participation Certificates awarded.</b>  <i>Number of Trainees: 13 (4-M, 9-F)</i>  <i>(Eng. =13)</i></p> <p>Training on Steel Structures and High Pressure Pipes Design and Welding took place in Baghdad, Iraq in Feb and April 2012.  <b>Training Participation Certificates awarded.</b>  <i>Number of Trainees: 12 (6-M, 6-F)</i>  <i>(Eng. =12)</i></p>

Outputs	UN Agency Specific Output	UN Agency	Partner	Indicator(s)	Source of Data	Baseline Data	Indicator Target	Achievements (Results)
								<p>Training on Atomic Absorption - Graphite took place in Baghdad, Iraq in May 2012.  <b>Training Participation Certificates awarded.</b>  <i>Number of Trainees: 10 (2-M, 8-F)</i>  <i>(Eng. =12)</i></p> <p>Training on Anton Paar density meter took place in Baghdad, Iraq in May 2012.  <b>Training Participation Certificates awarded.</b>  <i>Number of Trainees 51-M,4-F)</i>  <i>(Eng. =12)</i></p> <p><b>Summary:</b>  - <i>Number of Trainees: 104 (47-M, 57-F)</i>  - <i>Beneficiary Department: Labs and Projects</i>  <i>(Eng.= 79 Managers =5, technician = 20)</i></p> <p>5 staff members were certified in NDT/Level 2 in MT. Currently the total number of the certified staff is 9 instead of 4 previously.</p> <p>5 staff members were certified in NDT/Level 2 in PT. Currently the total number of the certified staff is 9 instead of 4 previously.</p>

Outputs	UN Agency Specific Output	UN Agency	Partner	Indicator(s)	Source of Data	Baseline Data	Indicator Target	Achievements (Results)
								<p>3 staff members were certified in NDT/Level 2 in RT. Currently the total number of the certified staff is 7 instead of 4 previously.</p> <p>3 staff members were certified in NDT/Level 2 in UT. Currently the total number of the certified staff is 7 instead of 4 previously.</p> <p>2 staff members were certified in NDT/Level 3 in MT, PT, RT, and UT. Currently the total number of certified staff is in all methods. In the past, no one was certified.</p>
<u>Output 1.2:</u>	1.2.3. A number of the SIEI Production Department engineers acquire the knowledge and skills in the fields of heat treatment, modern welding technologies, general industrial maintenance, and production workshop management, etc.	UNIDO	- MoI - SIEI	<ul style="list-style-type: none"> <li>• Number of SIEI staff trained.</li> <li>• Level of expertise achieved.</li> </ul>	<ul style="list-style-type: none"> <li>• Training reports.</li> <li>• Progress reports.</li> <li>• SIEI records.</li> <li>• M&amp;E</li> </ul>	-	<ul style="list-style-type: none"> <li>• 8 engineers from the SIEI Production Department</li> </ul>	<ul style="list-style-type: none"> <li>• Overall training program for the SIEI Production Department defined, including potential training institutes.</li> <li>• Training programme on advanced welding technology and pipe fitting completed in Amman, Jordan in June 2010. <b>2 6G Certificates awarded</b> (Technician = 8)</li> </ul>

Outputs	UN Agency Specific Output	UN Agency	Partner	Indicator(s)	Source of Data	Baseline Data	Indicator Target	Achievements (Results)
								<ul style="list-style-type: none"> <li>• Training programme on TIG welding completed in Beirut, Lebanon in October 2010. 2 Welder as per 287-1:2004 Certificates awarded. <i>Number of Trainees: 2 (2-M)</i> <i>(Technician = 2)</i></li> <li>• Training on purchased production workshop equipments/CNCs took place in Baghdad, Iraq in June 2012. <i>Number of Trainees:4 (4-M)</i> <i>(Eng. = 4)</i> <i>(Eng. = 8 , Technician = 11)</i></li> </ul> <p><b>Summary:</b>  - <i>Number of Trainees: 15 (15-M)</i>  - <i>Beneficiary Department: Production Workshop</i>  <i>(Eng. = 4 , Technician = 11)</i></p> <p>2 technicians were 6G certified in Pipe Welding. No certification was granted previously.</p> <p>2 technicians were approved as TIG Welders as per 287-1:2004. No certification was granted previously.</p>

Outputs	UN Agency Specific Output	UN Agency	Partner	Indicator(s)	Source of Data	Baseline Data	Indicator Target	Achievements (Results)
<u>Output 1.2:</u>	1.2.4. A number of the SIEI Management Department engineers acquire the knowledge and skills in the fields of project management; preparing business plans, and feasibility studies; network administration, etc.	UNIDO	- MoI - SIEI	<ul style="list-style-type: none"> <li>Number of SIEI staff trained</li> <li>Level of expertise achieved</li> </ul>	<ul style="list-style-type: none"> <li>Training reports.</li> <li>Progress reports.</li> <li>SIEI records.</li> <li>M&amp;E</li> </ul>	-	<ul style="list-style-type: none"> <li>8 engineers from SIEI Management Department.</li> </ul>	<ul style="list-style-type: none"> <li>1<sup>st</sup> training program on “Management for success” organized in Vienna, Austria from 6<sup>th</sup> to 10<sup>th</sup> Jan, 2010 with the participation of 6 SIEI Executive Managers. <i>Number of Trainees: 6 (5-M, 1-F) (Managers=6)</i></li> <li>2<sup>nd</sup> training on (Strategy and Strategic Marketing) took place in Vienna, Austria in April 2010 with the participation of 5 SIEI Executive Managers. <i>Number of Trainees: 5 (3-M, 2-F)</i> <i>Number of Trainees: 5 (3-M, 2- (Managers=5)</i></li> <li>3<sup>rd</sup> training on Organizing the Structure of SIEI and Staff posting completed in Vienna, Austria in December 2010 with the participation of 4 SIEI Executive Managers. <i>Number of Trainees: 5 (3-M, 2-F) (Managers=4, Eng=1)</i></li> <li>Training on Leadership Management for 3 DG’s of the: <ul style="list-style-type: none"> <li>- DG from Ministry of Transportation.</li> <li>- DG from Ministry of Railways.</li> <li>- DG from Ministry of Education</li> </ul> </li> <li>Two Executive Managers of SIEI completed in November 2010, Vienna, Austria.</li> </ul>

Outputs	UN Agency Specific Output	UN Agency	Partner	Indicator(s)	Source of Data	Baseline Data	Indicator Target	Achievements (Results)
								<p><i>Number of Trainees: 5 (5-M) (Managers=5)</i> Completed in November 2010, Vienna, Austria.</p> <p><i>Number of Trainees: 5 (5-M) (Managers=5)</i></p> <ul style="list-style-type: none"> <li>• Training on business planning and negotiations skills for heads of the administrative departments completed in September 2010, Beirut, Lebanon. <i>Number of Trainees: 8 (5-M, 3-F)(Managers=5, Eng.=3)</i></li> <li>• Training Leadership &amp; Management Skills for the Heads Deputies of the administrative departments completed in September 2010, Beirut, Lebanon. <i>Number of Trainees: 8 (1-M, 7-F)(Managers=1, Admin. staff.=7)</i></li> <li>• Second Training Leadership &amp; Management Skills for the administrative staff members took place completed in 23-27 May 2011, Beirut – Lebanon. <i>Number of Trainees: 8 (4-M, 4-F) (Managers=5, Admin. staff.=3)</i></li> </ul>

Outputs	UN Agency Specific Output	UN Agency	Partner	Indicator(s)	Source of Data	Baseline Data	Indicator Target	Achievements (Results)
								<ul style="list-style-type: none"> <li>• Third Training Leadership &amp; Management Skills for the administrative staff members took place completed in 4-8 June 2011, Beirut, Lebanon. <i>Number of Trainees: 7 (5-M, 2-F)</i> <i>(Eng=5, Admin. staff.=2)</i></li> </ul> <p><b>Summary:</b></p> <ul style="list-style-type: none"> <li>- <i>Number of Trainees: 52(31-M,21-F)</i></li> <li>- <i>Beneficiary Department: Labs, QM, Projects, Executive Managers</i> <i>(Eng.= 9 Managers =31, Admin. staff = 12)</i></li> </ul>
<b>Outcome 2:</b>	Industry has access to improved services that would enable precision manufacture and quality improvement of their products.			<p><b>NDS / ICI Priorities:</b></p> <ul style="list-style-type: none"> <li>• Strengthening the foundations of economic growth;</li> <li>• Revitalize the private sector particularly through the creation of an enabling environment.</li> </ul>				
<u>Output 2.1:</u> The SIEI laboratories, production workshop and library are rehabilitated to adequately respond to the demands of the	2.1.1. Gap analysis of SIEI capabilities and services conducted, including a detailed assessment of the equipment and training needs, and laboratory/production workshop/library set-up.	UNIDO	- MoI - SIEI	<ul style="list-style-type: none"> <li>• Clear definition of equipment specifications</li> <li>• Clear definition of training programmes for laboratory/ production workshop staff.</li> </ul>	<ul style="list-style-type: none"> <li>• Technical specification report</li> <li>• Training reports</li> </ul>	<ul style="list-style-type: none"> <li>• Inventory of existing equipment, tools, instruments, etc.</li> </ul>	<ul style="list-style-type: none"> <li>• Technical specifications and training programmes defined from requirements.</li> </ul>	<ul style="list-style-type: none"> <li>• Assessment of the SIEI existing laboratories/ production workshop carried out.</li> <li>• Technical specifications for identified equipment needs completed.</li> <li>• Final recommendation for the technical specification of the laboratories physical design has been finalized.</li> </ul>

Outputs	UN Agency Specific Output	UN Agency	Partner	Indicator(s)	Source of Data	Baseline Data	Indicator Target	Achievements (Results)
manufacturing industry, service sector, and consumers.								
<u>Output 2.1</u>	2.1.2 The SIEI has the required equipment and facilities to provide testing and calibration services to the manufacturing industry, service sector, and consumers, and to ensure consumer and domestic market protection against sub-standard goods.	UNIDO	- MoI - SIEI	<ul style="list-style-type: none"> <li>• Equipment procured, delivered, and installed</li> <li>• Increased number of products and materials tested</li> <li>• Number of testing and calibration laboratories made operational that are offering services to the industry.</li> <li>• Increased number of companies using the services of rehabilitated laboratories.</li> </ul>	<ul style="list-style-type: none"> <li>• Technical specifications</li> <li>• Purchase orders</li> <li>• Tender documents</li> </ul>	<ul style="list-style-type: none"> <li>• Inventory of existing equipment, tools, instruments, etc.</li> </ul>	<ul style="list-style-type: none"> <li>• Laboratories equipped and operational</li> </ul>	<ul style="list-style-type: none"> <li>• Tenders were launched for the purchase of laboratory testing equipments, offers were received and evaluated. Final selection of items to be purchased has been made based on SIEI needs in January 2011 (according to the allocated budget). Testing areas covered: chemicals testing, materials testing, mechanical testing, non-destructive testing, calibration and metrology. 26 testing equipments were selected, items delivered, and installed.</li> <li>• IT equipment delivered.</li> <li>• Lab Furniture delivered and installed.</li> <li>• Tender was launched for the construction work adjacent to the laboratories building to accommodate Metrology and Research &amp; development laboratories. Offers were received and evaluated. A contractor was assigned to perform the construction work. Work commenced in September, 2011 and was completed in March 2012.</li> </ul>

Outputs	UN Agency Specific Output	UN Agency	Partner	Indicator(s)	Source of Data	Baseline Data	Indicator Target	Achievements (Results)
								<p><b>This activity was not foreseen in the project document, but was added based on the PSC decision.</b></p> <p><b>Results/Summary:</b></p> <p><i>Quantity and quality of testing, calibration and material analysis have increased.</i></p> <p><i>Build area to accommodate additional laboratories and testing equipments improved.</i></p> <p><i>Laboratories furniture and fittings improved to reach the modern international standers in quality and safety measures.</i></p>
<u>Output 2.1</u>	2.1.3 Testing services of SIEI laboratories are internationally accredited.	UNIDO	- MoI - SIEI	<ul style="list-style-type: none"> <li>• Reduced product rejections.</li> <li>• Increased cross border trading</li> <li>• Laboratory services internationally accredited.</li> </ul>	<ul style="list-style-type: none"> <li>• Accreditation certificates and laboratory audit reports.</li> </ul>	-	<ul style="list-style-type: none"> <li>• 1-2 laboratories accredited</li> </ul>	<ul style="list-style-type: none"> <li>• Revising the organizational structure completed.</li> <li>• Revising, modifying, translating goals, objectives, and policies (in QM) completed.</li> <li>• Revising and amending the existing procedures completed.</li> <li>• Analysing the data of the equipment completed.</li> <li>• Calibration and uncertainty calculation of all equipment completed.</li> <li>• Selecting proficiency testing providers completed.</li> <li>• Training on uncertainty and calculating completed.</li> <li>• Calibration of the equipment for Hardness &amp; Spectrometer completed.</li> </ul>

Outputs	UN Agency Specific Output	UN Agency	Partner	Indicator(s)	Source of Data	Baseline Data	Indicator Target	Achievements (Results)
								<ul style="list-style-type: none"> <li>• Application of the standard test methods selected.</li> <li>• Participation and conduction of Proficiency Testing (PT) and review the results completed.</li> <li>• Review the communication process completed.</li> <li>• Training for internal auditors conducted</li> <li>• Implementation of procedures completed.</li> <li>• Performing of internal audit and finalizing corrective actions completed.</li> <li>• Conducting final management review completed.</li> <li>• Tender was launched in March 2012 for accreditation of the Material and Mechanical (Hardness) Testing laboratories of SIEI against the requirements of ISO/IEC 17025, offers were received and evaluated. Final selection has been made in May 2012.</li> <li>• Applying for accreditation made in June 2012. Labs were accredited in October 2012</li> </ul>

Outputs	UN Agency Specific Output	UN Agency	Partner	Indicator(s)	Source of Data	Baseline Data	Indicator Target	Achievements (Results)
<u>Output 2.1</u>	2.1.4. The SIEI production workshop is rehabilitated and equipped with proper mechanical tools and machines, comprising maintenance activities.	UNIDO	- MoI - SIEI	<ul style="list-style-type: none"> <li>• Production workshop facilities and equipment are functional.</li> <li>• Increased number of engineering undergraduates trained.</li> <li>• Maintenance activities commence.</li> </ul>	<ul style="list-style-type: none"> <li>• Production and maintenance reports.</li> </ul>	-	<ul style="list-style-type: none"> <li>• Production workshop for facilities and equipment.</li> </ul>	<ul style="list-style-type: none"> <li>• Workshop equipments purchased, delivered, and installed.</li> </ul> <p>Equipments delivered:</p> <ul style="list-style-type: none"> <li>- CNC Turning Centre</li> <li>- CNC 4-axis Vertical Machining Centre</li> <li>- Stick/TIG Welding Power Source</li> <li>- CNC Plasma Cutting Machine</li> <li>- Cylindrical Grinding Machine</li> </ul>
	2.1.5. The library of the SIEI is rehabilitated and provided with up-to-date facilities, engineering and technical periodicals and books, test reports, etc. to serve the information needs of the local industries.	UNIDO	- MoI - SIEI	<ul style="list-style-type: none"> <li>• Library facilities and infrastructure are functional</li> <li>• Availability of librarians/ library staff</li> <li>• Availability of appropriate and relevant books and other materials</li> <li>• Increased interest in the library services/number of customers using the library services.</li> </ul>	<ul style="list-style-type: none"> <li>• Library lending reports.</li> <li>• Library inventory.</li> <li>• Staff reports.</li> </ul>	<ul style="list-style-type: none"> <li>• Current library inventory.</li> </ul>	<ul style="list-style-type: none"> <li>• Library facilities</li> </ul>	<ul style="list-style-type: none"> <li>• Upgrading needs of the SIEI library identified.</li> <li>• Proposal for upgrading the library presented to and approved by the SIEI management.</li> <li>• Required equipment specified.</li> <li>• Training programme for national staff took place in Canada in February 2011.</li> <li>• 121 books, publications, delivered.</li> <li>• Furniture delivered.</li> <li>• IT equipment delivered.</li> </ul>

**ANNEX 1**  
**PROCURED LABORATORIES AND**  
**PRODUCTION WORKSHOP EQUIPMENTS**

No.	PO. No.	Supplier	Description
1	15002802	CROMWELL	CNC Turning Centre / HASS ST-20T + tooling and Spare parts
2	15002802	CROMWELL	CNC 4-axis Vertical Machining Centre (VMC)/HASS MINIMILL + tooling and Spare parts.
3.	15002802	CROMWELL	Stick/TIG Welding Power Source/LINC V270-SX + Stick/TIG Welding Power Source Accessory Sets/ ZZZKEN1318 + Welding Booth Modules/CEO-SMBSY + Welding Fume Extraction System/ FLEXFLUMESYST + Welding Rod Keeper/KEEN-K450
4	15002956	DEVOTRA	CNC Plasma Cutting Machine
5	15002978	EAGLE - Scientific	Cylindrical Grinding Machine/Jones & Shipman Model 1000U
6		<del>CROMWELL</del>	Chemical lab equipments: 1- Viscometer for liquids 2- Density meter 3- Platinum crucible (6 Pieces) 4- Gloss meter
7		<del>GUINTECH</del>	Chemical lab equipments : Atomic Absorption Spectrophotometer
8	15002889	DEVOTRA	Metrology Lab equipments: Force transducers
9	15002804	EAGLE - Scientific	Metrology Lab equipments 1- Gauge block comparator 2- Gauge block set, Grade K, ISO 650 3- Gauge block set, Grade O, ISO 650 4- Granite surface plate + stand 6- Set of weights class E2, 1 mg-20 g 7- Set of Weight Class F1, 1 mg-20Kg 8- Set of Weights, Class F2, 1 mg - 20 kg 9- Set of Weights, Class M1, 1mg -20kg 10 -Thermo-Hygrograph 11- Standard barometer
10	15002900	INTERTECH-Scientific	Mechanical Lab equipments 1- Impact testing machine 2- Portable Hardness tester for metals 3- Thermo Couple thermometer 4- Deep cooling bath
11	15003234	BERAY	Material Lab equipments: Optical microscope
12	15002895	INTERTECH-Scientific & SILIVERWING	NDT lab equipments: 1- Ultrasonic Flaw Detector 2- Plating Thickness Gauge 3- Automated X-ray Film Processor 4- Magnetic Plating Thickness Gauge 5- Magnetic Particle Inspection Kit

**ANNEX 2:**  
**SELECTED EQUIPMENT/LAB PHOTOS**

**CNC Turning Centre - Production Workshop**



**Impact Testing Machine – Mechanical Lab**



**Plasma Cutting Machine – Production Workshop**



## *Chemical Laboratory*

### Lab Setup



### Atomic Absorption Spectrophotometer



### Viscometer



## *Technical Library*



### ***Extension of the Laboratories Building***

The extension to the existing laboratories building was constructed to accommodate the Metrology, and Research and Development laboratories. The construction work was carried out from October 2011 to February 2012.

Additionally, 160 square meters were added to the overall laboratories building which was mainly constructed adjacent to the existing building.

**Existing Laboratories Building**



**Construction Begins**



**New Building**



**New Building**



**ANNEX 3**  
**TRAINING PHOTOS**

**Electrical Inspection and Testing For Cables and Circuit Breakers - Baghdad, Iraq**



**Metrology Training - Amman, Jordan**



**NDT Training - Rabat, Morocco**



**ISO Training – Amman, Jordan**



### **Pipe Welding and Pipe Fitting Training - Amman, Jordan**

- 4 trainees for pipe fitting and 4 for pipe welding.
- Certification awarded and 2, 6G positions for pipe welding.



### **Leadership & Management Skills for Administration Unites Heads - Beirut, Lebanon**

