

INDUSTRIAL RESEARCH INSTITUTE

2009 ANNUAL REPORT

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IRI in Brie f

- Established in 1953, the Industrial Research Institute (IRI) is a Lebanese institution for studies, industrial research and scientific testing and analysis.

It is a Conformity Assessment Body; it delivers quality system certification, product certification and certification of persons.

autonomy.

The activities and services of the Institute are organized to realize the following aims:

-To conduct studies and research relevant to the establishment of new industries.

-To investigate and disseminate information about available raw materials with a view to defining their use and establishing the best means for their exploitation.

-To provide, on an international scientific level, reliable services in testing and analysis and to grant certificates of quality or conformity with standards and purchase specifications.

-To provide specialized technological, management and economic consulting services to existing industries and industrial development schemes.

- To maintain close co-operation with official institutions, industrial organizations, and development boards both on the national and international levels in matters relating to the industrial development of the country.

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IRI is a not-for-profit institution, declared of public utility by D/L n° 10059 dated 17 August 1955, linked to the Ministry of Industry by Law n° 642/1997, with administrative and financial

Foreword of His Excellency Abraham Dedeyan

Minister of Industry



The Industrial Research Institute (IRI) was established in 1953 in order to provide professional services to industries, governments, institutions and individuals. It was also aimed at being one of the driving engines of the industrial sector growth in Lebanon, by introducing technology to the industrial institutions and developping its export capacity. Providing special industrial consultancies, supporting new industrial start ups and promoting capital investment in local industries, are also among its objectives.

The institution is characterized by its interaction with scientific developments with full confidence, comprehensive visions and future aspirations. Since responsibility is the

common feature of the entire IRI staff, the director general, Bassam Frenn, competently fulfilled these remarkable objectives. His sense of initiative raised up the IRI into a prominent and innovative research institute.

In addition to the advanced and sophisticated services offered by the IRI laboratories, the ELCIM and LCPC provide seminars, consultancy and applied sessions. In parallel, a natural and deep-rooted relation was esatblished between me and the young and dynamic IRI community. The reason must be because I came to the minsitry of Industry from a background of engineering, industry, business and contracting. I am determined to provide the new generation with the opportunity to assume an effective role in shaping a strategic vision that would lay the bases of a promissing future.

Based on this conviction, I supported the IRI's role and provided the necessary



incentives (financial and moral) to relieve it from the conventionel red tape that often hinders public institutions. I have also bolstered the autonomy of its activities within the frame of a flexible mechanism that increasingly lead towards achieving beneficial projects.

Since I took office at the ministry of Industry, I made it a priority to urge the IRI management to establish communication cahnnels with the industrialists, expand the scope of knowledge and information exchange to reach factual solutions liable to be immediately and directly implemented. This approach requires setting up constant training sessions, participating in rehabilitation programs and international workshops. The IRI succeeded

> in networking with reliable international partners to exchange and stimulate expertise and potential.

> At the IRI, the achievements come in sequence. Last but not least, the IRI membership in the EUROLAB and the recognittion of the German accreditatioin authority, which is one of the most respectable and highly credible European institutions.

> Lastly, the key to the success of this institution is the hard, serious and productive work and the dedication of the IRI staff. This is the IRI I know.

I wish the IRI a successful future.

Preface of IRI Director General



Being fully aware of how it reflects on Lebanon having an Industrial Research Institute that can contribute to the continuous process of building up the national industry, we have established within the Institute a scientific structure unmatched in the entire region, hence, broadening the scientific awareness and the testing perspectives, while interacting with advanced research centers. This global exposure enhanced the international trust in the Industrial Research Institute up to the United Nations via its UNIDO organization which for example entrusted in the institute to execute important scientific missions in some African countries.

Growth and Development was channeled over four basic fields to cover: laboratory activities and

Pardon..."We work for you"

Almost one dozen years of hard work have elapsed at the Industrial Research Institute. Fruitful years whereby the harvest was plentiful and the watchful eyes were fully awake to safeguard the growth of the activities of the institute to outreach far beyond the local requirements into the realm of globalization. Not hindered by difficulties or obstacles, though they were many, setting ahead of us a motto that we must measure up with the highest international similar scientific entities benefiting from the latest technologies and scientific endeavors set worldwide. testing methodologies, standards and technical specifications, industrial modernization and the assistance to national industries in the field of cleaner production thus elevating its competitiveness economically on both the near and far prospective while operating in more environmental friendly conditions.

However, our ambition extends far beyond the fundamentals, while fulfilling them. The Institute assumes the role of the real advocate of national industrial production. The real protection assumed by the Institute is based on reducing production costs, ensuring quality components in the products, monitoring the international quality specifications, preventing foreign competition aimed at goods lacking quality elements and providing quasi free services that barely covers their costs.

The Institute provides scientific research studies for both the public and the private sectors on both the national and international levels, crossing the boundaries thus finding the means of sustenance and auto finance; it hosts "the European-Lebanese Center for Industrial Modernization", which has evolved from phase 2 to phase 3. It also enclosed "Elcim-2", which has become an autonomous entity and "the Lebanese Center for Cleaner Production."

In this context, the IRI would like to express its gratitude to the ministry of Finance for releasing the IRI allocated funds that has been withheld for years. We hope that the future will bear more positive cooperation.

We also hope to achieve broader positive results with the new Board of Directors of the Lebanese Industrialists Association (ALI) by setting a cooperation framework serving the interests of the ALI, the IRI, the industrialists and the Lebanese economy.

In 12 years, the span of the IRI reached the entire Middle East, Africa (north, middle and south) region and Europe, working, discussing and interacting with research institutes and science communities, finalizing memorandums of understanding with universities, striking mutual recognition agreements, organizing seminars, meetings and workshops...

Inventions, creation of new equipment, registering copyright of creations with European entities...

These are a few of our fruits. Standing steadfastly against offenses, in a country where the institutions in general have suffered from serious problems for over 40 years, it was odd to see an institution accomplishing a success similar to that of IRI.

Bassam Frenn



Success unveils failure. Energy exposes laziness, yet boldness slays honesty. Success becomes a threat when held in the eyes of those limited in vision.

We invested a dear part of our lives in building a comprehensive, harmonized and dedicated scientific team. Our 2009 report is nothing but a reflection of our whole hearted and dedicated efforts.

Pardon... we worked for you.

IRI se rvic e s and a c tivitie s



Labora to ries Activity

The activity of the laboratory constitutes the IRI daily assignment. The average growth rate of these activities amounts to 12.5% since 2006. The overwhole number of 175000 test and analysis covers all the sections.

The importance of these laboratories activity increases year after year; it is the IRI daily assignment since it is the basis to achieve quality and value in products or to check its safety in varioue fields.

Aside from the horizontal expansion in equipments and laboratories, the vertical expansion is also growing, be it in the increasing number of tests and analyses, raising its daily average from 60 to 82, or in the addition of new types of tests and analyses, or in the expanding list of tests applied in countries receiving Lebanese manufactured exports.

TESTS and ANALYSES

Annual Growth Rate

The IRI laboratories made a quantum leap in quality and quantity during the year 2009; in fact, 174592 tests and analyses were conducted in all sections. The increase amounts to 24968 procedures compared to 2008. The increase represents 16.9 %. The annual growth rate reached 12.5% since 2006.

The activities of the laboratories were as follows:

1-The Chemical laboratories:

27205 tests and analyses were conducted in 2009, i.e. an increase of 6029 compared to 2008 reflecting a 28.5% growth rate and a 31.13% annual average since 2006.

2-The bacterial laboratories

14339 tests and analyses were conducted in 2009, i.e. an increase of 2023 compared to 2008 reflecting a 16.4% growth rate and a 32.6% annual average since 2006.

3-The textile, leather and rubber la bora torie s

3999 tests and analyses were conducted in 2009, i.e. an increase of 767 compared to 2008 reflecting a 23.7% growth rate and a 24.1% annual average since 2006.

4-Oil and paint

1933 tests and analyses were conducted in 2009, i.e. an increase of 463 compared to 2008 reflecting a 31.5% growth rate.

5-Soil and Civil Engieneering

50814 tests and analyses were conducted in 2009,

TESTS & ANALYSES



NUMBER OF TESTS	200	6-2009		
Laboratories	2006	2007	2008	2009
Wet & Physical Chemistry	12,016	16,861	21,176	27,205
Microbiology	6,156	9,713	12,316	14,339
Textile & Leather	2,057	3,165	3,232	3,999
Paint & Petroleum	2,092	2,661	1,470	1,933
Civil Engineering & Soil	47,200	36,161	41,444	50,814
Electrical	46,370	58,255	58,886	65,061
Bread (CLBW)	6,687	9,967	11,100	11,241
Total	122,578	137.074	149.624	174,592

representing 29.1% of the IRI laboratory activity. The increase amounted to 9370 compared to 2008 reflecting a 22.6% growth rate and a 2.5% annual average since 2006.

6-Electrical laboratories

The electrical laboratories covers the major part of the IRI laboratories activity with 65061 tests and analyses conducted in 2009, i.e. an increase of 6175 compared to 2008 reflecting a 10.5% growth rate, the annual growth rate reached around 12% since 2006.

7-The flour, bread and cereals la bora tories

11241 tests and analyses were conducted in 2009, compared to 11100 tests conducted the year before, i.e. an increase of 141 tests representing 1.4% and reflecting a growth rate of 18.9% since 2006.

WORK AUTHORITIES REPORTS

Laboratory	Number of reports (2007)	Number of reports (2008)	Number of reports (2009)
Wet and Physical Chemistry	1,549	1,956	2,337
Microbiology	740	1,005	1,409
Bread (CLBW)	584	560	464
Paint and Petroleum	125	170	329
Textile	128	100	115
Total	3,126	3,791	4,654





NUMBER OF TESTS

Laboratory	Regular	Customs	Total
Bread (CLBW)	11,100	-	11,100
Chemistry (Wet)	11,028	1,037	12,065
Chemistry (Physical)	8,734	377	9,111
Microbiology	11,337	979	12,316
Paint and Petroleum	894	576	1,470
Textile	795	2,437	3,232
Total	43,588	5,706	49,294



STATISTICS

Type of Product	Number of samples	Number of tests
Grains	176	1,229
Flour	1,143	12,354
Bread	8	63
Raw and dry pasta, cereal flakes	38	206
Dairy products	353	1,632
Meat and meat products	344	1,953
Ready to eat cooked foods-snacks	99	417
Nuts, nut products and coffee	423	2,176
Oils and fats	527	2,505
Vegetables, fruits and processed vegetables	215	2,319
Spices and condiments	49	123
Sugars and syrups	85	312
Jam, honey	66	300
Salt	40	68
Chocolates, biscuits, and cocoa	368	1,972
Sweets	45	113
Water	623	4,101
Rose water and orange blossom	8	25
Non alcoholic beverages	595	2,735
Alcoholic beverages	260	1,003
Eggs and sauces	633	2,204
Animal feed	25	110
Fertilizers and compost	15	45
Pesticide residue and chemicals	202	597

STATISTICS - CONTINUED

Type of Product	Number of samples	Number of tests
Halawa and Tahineh	531	614
Cosmetics, soaps and shampoos	746	3,949
Detergents	123	580
Disinfectants	6	19
Textile and textile products	206	1,696
Diapers, gauze, and napkins	637	3,345
Paper and paper products	25	27
Plastics, leather and rubber	251	657
Swabs	46	66
Herbs	20	127
Antibiotics	6	12
Pharmaceutical products	4	25
Ores, soil, sand and glass	234	506
Steel bars	546	4,363
Aluminum	64	425
Metals	174	493
Cement	162	846
Paint	15	135
Extinguishers	6	12
Chemical products	15	190
Petroleum products	438	1,796
Total	10,585	58,717

EXPORT TO ARAB COUNTRIES, EUROPE AND THE UNITED STATES

Product	Number of reports
Beer including sealing	54
Alcoholic beverages	8
Non-alcoholic beverages	98
Juices	2
Rose water	1
Honey	5
Dairy products	1
Nuts and nuts products	10
Chocolate, sweets	2
Tahineh, Halawa and olive oil	82
Herbs	2
Vegetables and processed vegetable products	1
Detergents	16
Cosmetics	141
Napkins, Toilet paper and facial tissues	64
Industrial products	3
Total	490



Importing

REPORTS AND ATTESTATION FOR IMPORT (CUSTOMS DECLARATION)

Field		Number of Files
Cosmetics	Forbidden components 430 Provisionally allowed 65	3,530
Food/Food products	Preservatives 67 Emulsifier, thickener, stabiliz- ers 252 Antioxidants 180 Artificial Sweeteners 25 Colors 90	3,530
Detergents	Full Analysis: Powdered de- tergent, liquid dishwashing, olive oil soap	830
Baby Diapers	Full Analysis	483
Hydraulic oils	Full Analysis	591
Glass	Analysis and Inspection	230
Dairy products	Full Analysis	373
Paint/Paint products	Full Analysis	176
Soy and Corn oil	Full Analysis	88
Miscellaneous	-	550





External Inspection

The number of external inspection operations undertook by the IRI reached 35691 during 2009; this is an increase of 10085 compared to 2008, representing a 39.38%. The annual growth rates attained 54.4 % since 2006.

The external operations included the inspection and checking of the liquefied natural gas tanks (405 processes), control and calibration of oil reservoirs and standards (244 processes), boilers inspection (170 processes), monitoring the pressure (34872 processes).

The external inspection covered 50 000 imported gas cylinders.

Metrology Laboratory

The number of tests undertaken by the metrology laboratory scored 7484 made on 832 patterns. The analyses scored an annual growth rate of 42% since 2006. The number of samples used for testing increased by nearly 30%.

The tests spread as follows:

1-Heat: 164 samples / 1560 tests
2-Compression: 65 samples / 536 tests.
3-Strenght: 7 samples / tests.
4-Blocs: 491 samples / 4492 tests.
5-Dimensions: 38 samples / 304 tests
6-Electricity: 49 samples/ 392 tests
7- Others: 18 samples / 144 tests

EXTERNAL INSPECTION

Activitiy	2006	2007	2008	2009
LPG Storage Tanks Inspection	390	196	328	405
Fuel Tanks Inspection & calibration	86	196	188	244
Boiler Inspection	157	91	165	170
Other Pressure Vessels	9,090	179	24,925	34,872
Total	9,723	11,816	25,606	35,691
LPG Cylinders Locally Manufactured	47,866		5	
LPG Cylinders Imported				50,000

METROLOGY (CALIBRATION)

Technical Outlingto	20	2006		2007		2008		2009	
Technical Subjects	Item	Test	Item	Test	Item	Test	Item	Test	
Temperature	57	517	96	825	132	1,263	164	1,560	
Pressure	24	192	31	248	55	440	65	536	
Force	9	72	26	208	15	120	7	56	
Mass	173	1,528	302	2,676	283	2,504	491	4,492	
Length	10	80	53	424	21	168	38	304	
Electricity	90	720	65	520	136	1,032	49	392	
Others (Acoustic, Flow etc)	16	128	22	176	22	184	18	144	
Total	379	3,237	595	5,077	664	5,711	832	7,484	





The Lebanese Welding Center

14335 operations were performed in 2009, marking a decrease of 3325 (18.8%) relative to 2008. But it had an annual average growth of 10.6 percent since 2006

2007 2008 2009 2006 المركز اللبناني للتلحيم 10,601 11,275 17,660 14,335

Certification

Management Systems certificates

21 organizations received the ISO 9001 certificate, and two received the ISO 14000 certificate

	the Industrial Research Institute.				
QUALITY SYSTEM CERTIFIC	ATION				
ISO 9001 21 Certified Companies					
Château Kefraya since 2006	Nasri Karam & Sons since 2003	Château KSARA since 2003			
TUV Hellas since 2008	Rim Co. since 2002	Produits & Solutions Informatiques – PSI since 2002			
Medical Distributing & Manufacturing (MDM) since 2003	Holcim (Liban) SAL since 2003	El Youssef Medical Center since 2005			
LECICO since 2008	Holcim Béton since 2008	Harfouche for Trading & Industring EST. (Pastel Paints) since 2004			
Integrated Digital Systems since 2004	Nakhlé Zgheib & Co. since 2008	Bel Labtronic since 2004			
Lebanese International Technologies since 1999	Dora Flour Mills since 2004	Building Chemicals Company since 2008			
Chirak Printing Press since 2008	Betomix since 2009	Clinserv International since 2009			

ISO 14000 2 Certified Companies Société Libanaise des Ciments Blancs Holcim Liban SAL (SLCB) since 2009 since 2004



Product Certification

24 products produced by 8 organizations received the product quality certification from the Industrial Research Institute.

Certificates of the Lebanese Welding Center

24 products produced by 8 organizations received the product quality certification from

Certificates of Qualifications in cooperation with MOODY—France

These are certificates given to individuals qualifying them to audit the quality of systems and products. The Industrial Research Institute, in cooperation with MOODY— France gave the following certificates

PRODUCT CERTIFICATION

IRI Product Certification 24 Certified Products by 8 Companies					
Almaza -Almaza Beer alcoholic -Almaza non-alcoholic -Laziza non-alcoholic	Cimenterie Nationale -P 52.5 BTNA RMS -P 42.5 BTNA RMS -P 42.5 -PAL 42.5	Ciment of Sibline -P42.5 RMS (par lot) -PAL 42.5 -P 42.5			
Future Pipes -Concrete Pipes -Glass reinforced plastic pipes -Rubber gaskets	Holcim -P 42.5 BTNA RMS -PAL 42.5 Mer -PAL 42.5 Montagne -PAZ 42.5 -P 42.5	LECICO -Floor and wall tiles BIIb -Floor and wall tiles BIII -Sanitary ware			
Lematic -Refrigerators, freezers and bottle coolers	Sannine -Bottled mineral water 0.5L, 1.5L, 2L				

CERTIFICATION OF PERSONNEL

Moody Certification - France	
« Internal » Auditors	92
« IRCA » Auditors for auditing quality systems	85
« IEMA » Auditors for auditing environmental systems	3
« IRCA » Auditors for auditing alimentary systems	3

AUDITS, INSPECTIONS & OTHER

	2006	2007	2008	2009
Number of audit days for product certification	66 MD	54 MD	34 MD	28 MD
Number of audit days for quality system certification	28 MD	61 MD	45 MD	52 MD
Number of internal audit days	14 MD	22 MD	35 MD	67 MD
Number of days for inspection & other external work	2,882 MD	3,245 MD	3,201 MD	3,201 MD
Number of work days	262	295	291	291
TOTAL	≈ 13 employees /yr	≈ 13 employees /yr	≈ 14 employees /yr	≈ 13 employees /yr

- 92 Internal auditors
- 85 Systems quality auditors
- 3 Environmental systems auditors
- 3 Food safety auditors

Lebanese Welding Center	2006	2007	2008	2009
Welders certified by IRI	110	83	127	82
Inspectors in non-destructive testing	12	0	1	1

Custom Files

Since 2005, the IRI started the imported goods inspection of customs files. Within the scope of its duties, it was in charge of reviewing these files to assess the conformity of the imported goods with the compulsory Lebanese standard specifications.

The number of the annual files assessed rose from 6619 in 2005 to 23958 in 2009, reaching a 37.9% average annual growth rate. The number of files suject to assessment, analysis and compliance reached 17325, i.e. a 36% average annual increase.

In 2009, the number of non-compliant files reached 1073, 1038 of which were readjusted. The percentage of corrected files registered 96.7%.

The customs files were listed according to the goods' makeup: Electricity 43,2%, chemicals 38,6%, mechanicals 17.5%, soil (clay or ceramic) 9,3%, general files 5,7%, rebars 1% and compression 0,4%.

The customs files were categorised according to the major customs portals: Beirut Port 13527

file, representing 56.5%; the RH airport 22,2% and Masnaa 10,6%.

The daily file inspection average reached 82.3 file..

CUSTOMS FILES TOTAL DISTRIBUTION (%)



CUSTOMS FILES BY TYPE

Туре	E	Electrica	al	Soil			Chemical			М	echanic	al	Total		
Years	2005	2006	2007	2005	2006	2007	2005	2006	2007	2005	2006	2007	2005	2006	2007
Number	6,619	5,804	6,995	797	548	1,041	6,727	6,231	8,081	107	94	152	14,250	12,683	16,269
Not Subject *	1,558	1,174	1,842	45	133	117	1,394	1,801	2,637	8	22	38	3,005	3,132	4,623
Subject	5,061	4,632	5,153	752	415	924	5,333	4,430	5,444	99	72	104	11,245	9,551	11,636
Non-conformity	450	651	727	277	168	256	25	20	15	1	0	0	753	839	998
Corrective Action **	360	640	713	277	168	256	24	18	14	0	0	0	661	826	983

CUSTOMS FILES BY TYPE

Туре	Electrical		Electrical Soil		Chemical		Mechanical		Common Files		Rebars		Pressure		Total	
Years	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009
Number	8,752	10,344	2,023	2,229	7,898	9,249	273	420	1,213	1,360	313	263	112	93	20,584	23,958
Not Subject *	2,075	2,892	86	112	2,307	2,933	54	130	390	506	0	11	27	29	4,939	6,633
Subject	6,677	7,452	1,937	2,117	5,591	6,316	219	290	823	854	313	31	85	64	15,645	17,325
Non-confor- mity	646	674	231	358	23	41	0	0	IN,C, S,E	IN,C, S,E	0	232	0	0	899	1,073
Corrective Action **	606	656	231	358	13	24	0	0	IN,C, S,E	IN,C, S,E	0	0	0	0	850	1,038

* the goods were found not subject to the requirements of the mandatory technical Lebanese standards ** guidance provided by IRI to rectify non-conformity when possible

CUSTOMS FILES TOTAL DISTRIBUTION



CUSTOMS FILES BY ENTRY POINT

Location	Electrical Soil		Chemical		Mechanical		Common Files		Rebars		Pressure		Total			
Years	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009
Masnaa	404	315	29	26	1,565	1,826	64	244	72	70	13	1	24	21	2,171	2,530
Port	4,229	4,788	1,398	1,678	4,719	5,561	195	153	937	1,085	174	204	78	58	11,730	13,527
Airport	2,316	3,192	8	31	1,570	1,845	9	23	204	203	0	0	10	14	4,117	5,308
Tripoli	43	25	1	0	43	17	5	0	0	1	122	56	0	0	214	99
Tyr	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
Saida	0	0	1	0	1	0	0	0	0	0	4	2	0	0	6	2
Pre-shipment (port)	1,759	2,024	586	494	0	0	0	0	0	0	0	0	0	0	2,345	2,518
TOTAL	8,752	10,344	2,023	2,229	7,898	9,249	273	420	1,213	1,360	313	263	112	93	20,584	23,958
Average/Day	30.07	35.55	6.95	7.66	27.14	31.8	0.94	1.44	4.17	4.67	1.08	0.9	0.38	0.31	70.73	82.3

2005-2007

2008-2009

2008-2009

Services of the Institute and its activities outside Iebanon

UNIDO Assigns the Industrial Research Institute

for Technical Assessment Functions in Africa



In light of its determination to benefit from the capabilities of the Industrial Research Institute (IRI) and its scientific expertise as well as the skills of its technical and scientific personnel, the United Nations Industrial Development Organization (UNIDO) assigned the IRI for scientific missions in countries that UNIDO will select as part of its development programs for test centres and laboratories working in areas related to foodstuff.

In this context, experts from the IRI accepted UNIDO's invitation, and assessed fifteen scientific institutes working in food-related tests and specifications in Kenya, Tanzania, Uganda, Rwanda and Burundi.

UNIDO is also taking advantage of IRI's expertise in the area of foodstuff tests in the NORAD-UNIDO Program, in the capacity building of agricultural products produced in the above-mentioned African countries, and which is being done by building networks for the assessment of the quality of these products and their conformity to international standards.

A Scientific Library at the Service of Labora tories



The scientific library at the Industrial Research Institute is considered a mainstay for all laboratories, departments, and units. It adopts the necessary specifications and follows up the latest versions of international specifications in order to provide them to the technical directorates, departments, and units, in accordance with the international quality system.

The scientific library offers scientific, economic, and law journals, keeping the institute's staff updated on the latest developments and technologies in the world. This contributes to the Institute's development and progress in the various fields and allows it to acquire new knowledge.





The mission aims to identify the best methods and approaches to develop these laboratories both scientifically and technologically, as well as expanding the scope of their tests in order for them to meet the needs of the local food industry as well as the international directives for food security.

Based on the assessment, the full scope of the requirements for training, and restoration of the buildings and the infrastructure were identified, in addition to the shortage in the test equipment and the machinery. This is not to mention the training requirement for the laboratory personnel, in order to develop their abilities to design and implement the quality management system of the laboratory tests in accordance with the international certificate ISO 17025:2005, with a view to become internationally accredited.

The Institute Partic ip a tes in the National Standards Day in Algeria



On the occasion of the fourteenth Algerian National Standards Day held in the Algerian capital on 15/12/2009 under the sponsorship of the Algerian minister of Industry, the Algerian National Standards Body and international monitoring sides, along with Institut Algérien de Normalisation (IANOR), invited the director of technology and development at the Industrial Research Institute, Dr. Imad al-Hajj Shehade as an international expert in the conformity area, to deliver a lecture on pre-shipment control, its mechanisms, goals and benefits by addressing this mechanism based on the acquired implementation experience in Lebanon.

Shehade put forward the pre-shipment testing mechanism adopted in Lebanon and corroborated its benefits in facilitating the flow of goods between countries, in alleviating the excessive stocking of goods in the ports and guaranteeing the quality of the products since they were previously examined in the country of origin through a clear mechanism. Moreover, this will ensure the arrival of the products to the importing countries while in conformity with the country's safety and quality standards, which will guarantee the protection of the end consumers.

Dr. Shehade was then invited to take part in a radio interview on the official Frenchspeaking Algerian radio with the participation of the general director of the Algerian National Standards Body Muhammad Issawi, in order to explain to the listeners several issues related to the assessment of conformity in general.

Also during his presence in Algeria, Shehade held talks with official sides, especially ones interested in collaborating with Lebanon as a whole and with the Industrial Research Institute in particular.

Conformity a sse ssment of g a s cylinders produced in Turkey

Within the frame of its mission aimed at assessing the conformity of the gas cylinders geared up for the local market according to the required Lebanese specifications an expert from the IRI paid a field visit to a cylinders' factory in Turkey to supervise the manufacturing of the cylinders, undertake the necessary test and retrieve samples for testing and assess their conformity to the accredited Lebanese specifications (NL 401-2001). The examination and testing was undertaken according to internationally recognized and delicate testing procedures. Following the verification of the technical specifications conformity, the cylinders were tagged with Lebanese specifications data and information (NL 401-2001).

Needless to say that the IRI is controlling, testing and tagging all the local or imported cylinders designed for the Lebanese markets to check their rigidity, welding and the metal thickness, as well as other tests aimed at ensuring the safety of the consumer.





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Agreements and International Negotiations

MutualRecognitionAgreements on Conformity Assessment

The agreements signed between Lebanon through the Industrial Research Institute (IRI) - and friendly countries through their national bodies allow the manufacturer and/or the exporter to conduct conformity assessment in the country of origin where the goods were produced, through the national body entrusted with the implementation of said agreements (e.g. the IRI in Lebanon). This is conducted in accordance with the specifications or technical standards of the country of destination, before issuing the recognized certificate of conformity in that country, without the need to re-examine the product or conduct a conformity assessment a second time. This is applicable in both directions in case the agreement is only bilateral. The certificate of conformity is issued for each consignment separately, pursuant to an agreed mechanism under these agreements.

In fact, these agreements can help speed up and facilitate trade among states owing to two main factors:

I- Eliminating the need for goods to queue at the border pending the verification of their compliance with specifications or technical standards of the country of destination (the importing country), as the certificate of conformity attached with the goods would be sufficient as an 'entry permit' that facilitates the flow of exports.

II- Ensuring that the goods conform to the specifications or technical standards of the country of destination, prior to their being shipped from the manufacturing country of origin.

In practice, concluding these agreements goes through the following stages:

First: The conclusion of agreements:

Negotiations between the two national bodies charged with issuing certificates of conformity in each country are conducted, up to concluding the Mutual Recognition Agreement for Conformity Assessment between these two sides.

Second: The practical steps:

- The conclusion of the agreement is followed by the establishment of a joint committee from both sides. This committee is given the task of putting together a list of the major goods traded between the two countries. This list can be amended and updated when needed.

- Efforts are put in the line of unifying standards of the goods (in the chosen list) if feasable. A

unified mechanism for conformity assessment for these goods is then put in place, and adopted by both sides.

Third: Issuing certificates of conformity:

A unified format for the certificates of conformity is agreed upon and adopted by both sides, enabling each manufacturer or exporter to apply for a certificate of conformity issued by the national body in their respective countries. This will enable these goods to be exported to the country of destination without hurdles, i.e., without technical barriers on the border.

The status of agreements per country:

Agreements signed and enforced: Syria, Iraq. This is while noting that work is under way to amend the outdated agreement with Iraq.

Agreements signed and enforced: Jordan and Egypt

Memoranda of understanding, which are

$Mutual\,Recognition\,Agreements\,\,on\,\,Conform\,ity\,\,Asse\,ssm\,e\,nt$



practically protocols of cooperation up to mutual recognition agreements: Morocco, Turkey, Qatar and Iran.

International negotiations for the conclusion of mutual recognition agreements:

The Industrial Research Institute heads the National Committee tasked with the preparatory work aimed at concluding an agreement between Lebanon and the European Union in specific sectors, which is known in Europe as the Agreement on Conformity Assessment and Acceptance of Industrial Products (ACAAs). To this end, the Lebanese side has put in place a plan of action that was submitted to the Presidency of the Council of Ministers for approval and for subsequent implementation.

1)Agreements with international scientific institutions

Agreements with international regulatory and scientific institutions

Agreements with international regulatory bodies

Through agreements the IRI entrusts international regulatory bodies to conduct conformity assessment in the country of origin in accordance with a mechanism specified by the IRI and implemented by these bodies to verify the conformity of goods to Lebanese mandatory specifications prior to shipping from the country of origin into Lebanon.

This process is optional for importers who wish to conduct conformity assessment prior to shipping their goods. Otherwise, the IRI would conduct the conformity assessment upon the arrival of these goods to the Lebanese border.

To this end, the Institute concluded agreements and memoranda of understanding with such bodies as the Bivac (Veritas), SGS, TUV and work is under way to update and implement them.

Agreements with international scientific institutions

LNE: for the exchange of experiences, particularly in the field of metrology

CSTB-HQE



NF certificates for service oriented buildings



At a time when sustainable buildings have become a global issue, the Industrial Research Institute (IRI) gained the authority of delivering NF certificates for service oriented buildings, according to the High Quality Environmental standard (HQE) in all the Middle Eastern countries.

In September 2009, the Arab World Institute in Paris signed a deal between Centre Scientifique et Technique du Bâtiment (CSTB) in France, represented by its president, Bertrand Delcambre; the Industrial Research Institute (IRI) represented by its director, Dr. Bassam Frenn and Certivéa, the authority entitled to deliver certificates for service-oriented buildings, according to HQE technique, represented by its director, Patrick Nossent.

The agreement is aimed at taking up the NF certificates for service-oriented buildings according to the High Quality Environmental standard (HQE) and granting it to all the Middle



Eastern countries, while adapting it to the specific restrictions set by the environmental, climatic, socio-economic and cultural characteristic of each country.

The agreement is similar to another agreement signed in 2008 with VANZOLINI Foundation to transfer this technology to Brazil, under AQUA brand.

The agreements seek to increase the stimulus of environmental assessment methods and tools according to international regulations while streamlining the initiatives according to one standardized brand. It is also aimed at resuming work effectively in the frame of the Sustainable Buildings Allinace (SB Alliance), especially since the first indicators of public and common environmental impact has emerged throughout the world.

The concerned parties will benefit from the BRE GLOBA and Certivéa assessment method to develop a common international tool.

Validation and Development of Collaboration between the Industrial Research Institute and the Laboratoire National de Métrologie et d'Essais INE in France

In the context of the development of the relations established by the Industrial Research Institute with prominent international sides, the Institute renewed its collaboration with the Laboratoire National de Métrologie et d'Essais (LNE) in France, thus marking an occasion to validate and develop these relations in a more thorough way while taking into consideration the specificities related to each of the two institutions. In this context, the Institute developed and modernized its systems, apparatuses and human capacities to go in line with the international standards for its work, and has - since 2002 - instated a quality system adopted on the international level in regard to many laboratory tests. This will help render it the main partner of international laboratories such as LNE, which (based on its current policy), is seeking to export its knowhow outside of France to polarize new markets, not only in Lebanon but all around the Middle



East. Therefore, it has developed the agreement to render its services available to clients on the international scale, knowing that for years now, the Industrial Research Institute has been carrying out tasks outside of Lebanon by rehabilitating laboratories to be accredited on the international level or by implementing nondestructive testing and examination methods on metals among other technical tasks.

Local agreements

The Chambers of Commerce, Industry and Agriculture

The Industrial Research Institute (IRI) is seeking to sign 'protocols' with the chambers of commerce, industry and agriculture in all the governorates of Lebanon. These protocols will pave the way for further cooperation between the two sides, in particular in the areas of training in lab work, welding and other fields. They will also pave the way for the members of these chambers to conduct the necessary tests in the institute's laboratories, according to the mechanism determined by the 'protocols' to be agreed upon. The Institute will provide the members of the chambers with services within its scope of work.

The Association of Lebanese Industrialists

In accordance with the agreement with the Association of Lebanese Industrialists, the IRI grants a 50 percent discount over the accredited tests at the institute to the industrialists who have been members of the association for over than ten years. This is with the aim of helping them improve the quality of their products and to subsequently increase their exports. This is while noting that the institute's laboratories are internationally recognized and that its certificates are recognized in more than 120 countries. This increases the number of the IRI's members that benefit from this agreement to 119 industrialists in 2009.

Memorandum of understanding

Between The Industrial Research Institute and the United Nations Development Program Cooperate in the Field of Renewable Energy

The Director General of the Industrial Research Institute Dr. Bassam Frenn and the Representative of the United Nations Development Program (UNDP) Marta Ruedas signed in August 2009 a memorandum of understanding upon which both institutions cooperate in the field of renewable energy – particularly with regard to the equipment of the laboratory for testing the mirrors of the solar heater and its conformity with the adopted Lebanese or international specifications. The memorandum stipulates cooperation between the two institutions to spread the culture of renewable energy in order to encourage its use in Lebanon in all related fields - and particularly take advantage of the solar energy which Lebanon enjoys. The memorandum also includes the methods of continued cooperation between the Institute and the Lebanese Center for the Rationalization of Energy Consumption, which is funded by the Ministry of Energy and the United Nations Development Program.





Official visits, conferences and seminars



inside and outside Lebanon

Tenth Meeting of the Coordinating **Committee**

of Arab Research Institutes in the Arab Countries



At the invitation of the Arab Industrial Development and Mining Organization, and hosted by the Industrial Research Institute (IRI) in the Lebanese Republic, the tenth meeting of the Coordination Committee of Arab Research Institutes in the Arab Countries was held at the IRI headquarters in Beirut between the 2nd and 4th of November, 2009. The representatives of the following institutions took part in the meeting:

- 1. Hashemite Kingdom of Jordan
- 2. Kingdom of Saudi Arabia
- 3. The Republic of Sudan
- 4. Syrian Arab Republic
- 5. Great Socialist People's Libyan Arab Jamahiriya
- 6. Lebanese Republic
- 7. The State of Oatar
- 8. State of Kuwait
- 9. Arab Republic of Egypt
- 10. The Arab Industrial Development and Mining Organization



In his opening remarks at the beginning of the meeting, the Director General of IRI Dr. Bassam Frenn pointed out that applied research is the foundation stone of the knowledge industry and of the attempts to develop it, provided that these are associated with a policy of technology transfer, with the three being the main pillars of the development of our industries and products. Dr. Frenn also said that the fundamental link between applied research, and the bodies concerned with their results, i.e. the production institution, is the true indicator of the opportunities of development, creativity modernization and their utilizations.

Dr. Frenn was followed by the Director General of the Arab Industrial Development and Mining Organization Mr. Mohammed bin Yusuf, as represented by Mr. Mohammd al-Shawish who highlighted the relationship between scientific research and productive sectors, and said: in spite Frenn as chairman of the tenth meeting & tenth session of the Coordination Committee of Arab Research Institutes in the Arab Countries



of what the major Arab industrial institutions are doing in the telecommunications, petrochemical, pharmaceutical, fertilizer, electric and mining sectors, in terms of supporting research and development, and in addition to the vested interest by the Arab government in this regard, efforts are still limited and not fully effective in the production process. In truth, there is no clear interaction between research bodies and the productive sector, especially in the areas of small to medium industries, and traditional industries which are lacking in resources to keep up with modern developments, and also with the requirements of the market and competitiveness.

The meeting was concluded with a speech by his Excellency the Lebanese Minister of Industry Mr. Ghazi Aridi, delivered on his behalf by Dr. Bassam Frenn who said: The fate of our Arab

world and Arab peoples is largely linked to the extent of our ability to integrate with each other. This requires that strong relationships be woven at all levels and especially in the industrial field, provided we all work on building confidence among ourselves, and truly - and not just in words - build the Arab common market. This is in addition to economic and social integration among the Arab countries, in order to meet the requirements of modernity. In truth, industrial institutions only become able to compete when the correct industrial and technological structure is available, and when focus on research and development is a priority. Therefore, the role of research centers that assist in the utilization of technology in improving production capabilities comes to the forefront, in addition to setting up modern systems to encourage innovation and the rapid deployment of new technologies.



Frenn as chairman

After that, the IRI's Director-General Bassam Frenn was elected as chairman of the tenth meeting, and chairman of the tenth session of the Coordination Committee of Arab Research Institutes in the Arab Countries. Also, Mr. Abdul Hameed Thamri, Director of Research and Development of the Arab Industrial Development and Mining Organization was elected as the Rapporteur of the meeting.

The items of the agenda and the schedule of the meeting were agreed upon as follows:

The first work paper was entitled: the status of the implementation of the recommendations of the Ninth Meeting of the Coordination Committee of Arab Research Institutes in the Arab Countries

The second work paper was entitled: Technological progress and productivity growth in the manufacturing industries in Kuwait

The third work paper was entitled: Arab economic integration in the service of industrial development

The fourth work paper was entitled: Appropriate mechanisms for the creation of a comprehensive Arab project for Arab industrial research



The fifth work paper was entitled: Industrial Property

The second working session

In the second working session, a paper on future industries and nanotechnologies, "the Arab initiative for the advancement of nanotechnology sciences", was presented by Economic researcher Abdul Rahman Bin Jeddo, (supervisor of the industrial relations and technological development division of the Arab for Industrial Development and Mining Organization).

The paper tackled the goals and themes of the Arab initiative in the field of nanotechnology sciences, and the strategic vision as well as the requirements needed to accomplish this initiative. This was then followed by an extensive discussion on this initiative.

The meeting was concluded on Tuesday, 03/11/2009 and the recommendations were adopted as follows:

1) Emphasizing the organization's proactive role in cooperating with the committee's members, particularly in implementing practical steps and following up the execution of the projects approved by the committee.

2) Bilateral and multilateral communication among

the industrial research centers and institutions, in a manner that encourages cooperation in research and the sharing of experts and experiences. This is with the aim of enriching the experience of these institutions, which in turn improves performance and industrial growth, while keeping the organization in the loop in what regards these issues.

3) The organization must develop a database of recorded utility models in the world and which have passed the period of protection. This should then be made electronically available to the Arab states.

4) The member Arab countries must study their needs in terms of techniques and technologies protected by patent rights and intellectual property, before informing the organization of those in order to coordinate among members with a view to issue group licenses. The member states would benefit from these licenses in return for an adequate and fair fee.

5) Benefiting from the Egyptian Office for patents' accreditation by the World Intellectual Property Organization, as an International Searching Authority and International Preliminary Examining Authority of patents in both Arabic and English.

6) Emphasizing the need to pass national legislations in the Arab countries that guarantee the protection of geographical markers belonging to a specific area, climate conditions or special skills of manufacturers across all countries. These must be then registered internationally so that member Arab countries, to which the geographical markers that are linked to distinguished quality indicate, can benefit from them.

7) Working to inform the members of the committee regarding the results of ministerial

meetings on a regular basis, in order to enable them to contribute in implementing the decisions that serve the industrial research centers.

8) Giving the priority to the renewable energy industry, especially solar power, in generating electricity as part of the future industries. This industry can then be transferred and adopted in the Arab countries, at any stage of the manufacturing process.

9) Approving the proposal of the Arab initiative for nanotechnology and sciences, and referring it to the organization's ministerial council for the appropriate decision to be taken.

A- Promoting training material related to the sciences of nanotechnology and other modern sciences in Arab universities, research centers and other educational institutions.

B- Coordinating the Arab initiatives in the area of nanotechnology sciences.

10) The Organization must set up a special website for the Arab initiative for nanotechnology sciences, and assign a special Arab day to introduce nanotechnology sciences and encourage its inclusion in productive activities.

The eleventh meeting will be held in the Hashemite Kingdom of Jordan, and will be hosted by the Royal Scientific Society during the month of November, 2010.

At the end of the meeting, the participants thanked the Lebanese IRI headed by Dr. Bassam Frenn and his staff for hosting the meeting and doing everything possible to ensure its success. The Arab Industrial Development and Mining Organization led by Mr. Mohammed bin Yusuf and the staff members of its Research and Development division were also thanked for their efforts to make this meeting possible.

Zeaiter in Qatar: The Industrial Research

Institute Enjoys Human Competence

Earns trust of Arab States in Corroboration of its Scientific Credibility



During his official visit to Qatar early January 2009 and in the speech he addressed in Doha to Qatari Deputy Prime Minister and Minister of Industry and Energy Abdullah Attiya in the presence of the Lebanese delegation, Lebanon's ambassador to Qatar and officials in the Qatari Ministry of Industry, Minister of Industry Ghazi Zeaiter pointed to the importance of the Lebanese industrial sector and the role of the Industrial Research Institute. Zeaiter thus stated that the Institute "enjoys human competence qualified to carry out the tasks with experience and know-how."

He also condoned "the decision of Arab countries to spare Lebanese products from local laboratory testing and settle for the tests conducted by the Lebanese Industrial Research Institute based on the decisions of the extraordinary meeting of the Economic and Social Council held in Beirut." He considered that the decision conveyed the great trust placed in the work undertaken by the Institute and marked yet another testimony for its credibility, the preciseness of the work in its laboratories and the progressiveness of its tests that have earned the recognition of the European accreditation bodies.

Zeaiter then pointed out to the Qatari minister: "The Lebanese industrial sector was intentionally destroyed by the Israelis and suffered direct and massive damages.

Some plants were demolished in full and others partially. The size of the losses that affected the production sector in Lebanon was estimated at over two hundred million dollars. This attack on the factories aimed at destroying national economy and annihilating this productive and flourishing sector." Zeaiter added: "The capacities are limited and the aid reaching Lebanon was not allocated to the owners of the damaged factories by the state which left their case pending. This is now at the top of our list of priorities."

Zeaiter also called on the Qatari deputy prime minister to encourage "Qatari businessmen to invest in the Lebanese industrial sector and facilitate the exchange of goods between the two countries by removing the customs restraints, recognizing the conformity licenses and organizing fairs to introduce the national products to the public."

He assured: "The Ministry of Industry and its apparatuses, whether the Industrial Research Institute or the Lebanese Standards Institution, now enjoys the necessary human competence qualified to conduct the work with expertise and know-how. It is thus able to provide technical guidance and support to the private sector in order to modernize production and introduce new industries to the production world in Lebanon."

The IRI TAKES PART IN THE FIRST NATIONAL CONFERENCE

TO FACE NATURAL & AD HOC RISKS

Organized by the World Lebanese Cultural Union (WLCU) and the National Commission to Manage Disasters, the "First National Conference to Face Natural and ad hoc Disasters: Toward a Comprehensive National and Preventive Policy" was held on 5 & 6 November, 2009, at the Union of the Arab Chambers of Commerce, Industry and Agriculture, at Adnan Kassar building For Arab Economy, in Beirut.

The opening was attended by 300 Lebanese experts in natural and accidental disasters, representatives of the Lebanese Army high command, civil Defense, Lebanese Red Cross, National Council for Scientific Research, IRI, as well as the directors general of the ministries of Interior, Public Works, Energy, Water, Environment, Industry and Agriculture. Also attending were the ambassadors of the



mediterranean countries, like Turkey, Spain, Italy, France and Egypt. Represemntatives of the UNIFIL command working on demining areas in south Lebanon, academic experts, syndicates' members concerned with the management of disasters and emegencies from USJ, the Engineers Syndicate in Lebanon, the municipal unions in some Lebanese regions, the directors general of civil and voluntary and community organizations in Lebanon and representatives of international governmentgal association were also present.

The first session, entitled "Pattern Diagnosis of the Disasters that Lebanon has endured or could endure: Mankind and Disasters", was headed by Dr. Bassam Frenn, the IRI Director General.

Conference on "Prevention of the Threat of Earthquakes" at the Industrial Research Institute Frenn: Determined To Anticipate Market Needs



The safety of construction in Lebanon has constituted one of the main objects of concern of the Industrial Research Institute in light of the destructive Israeli attacks such as the one seen during the July 2006 war or the possibility of it being hit by earthquakes or seisms. This is especially true considering the fact that Lebanon is located between two dangerous fault lines whose movements could range in strength and reach lethal and destructive levels. Based on that, the Institute organized a conference on the "Prevention from the risk of earthquakes" on March 4, 2009.

The Industrial Research Institute and the Order of Engineers and Architects in Beirut organized a conference headlined "Preemptive development and construction against earthquakes, the adoption of international standards and their implementation based on the Lebanese concept" at the headquarters of the Institute, under the tutelage of the Ministries of Industry, Public Works and Transportation and with the participation of the Standards Institution, the UNESCO and the International Union of French-Speaking Scientists and Engineers. In this context, Bassam Frenn, the director general of the Industrial Research Institute who was representing the minister of industry, said that the Institute contributed to the issuance of a safe construction law and paved the way for other projects, including the study of the used construction material and the drawing of a system to grant conformity certificates to constructions based on the international Haute Qualite Environmentale HQE standard at the level of the implementation in participation with a European institution.



He indicated that Lebanon was located in a region of active seisms, the most powerful of which was in 1956, mentioning that: "This forces us to deploy all possible efforts in order to meet all the demands. The engineers of the Institute are following up on the new construction concepts to check the safety of the plans and can now rehabilitate buildings which were affected by an earthquake or by military acts. The greatest proof for this was the work we conducted following the July war." Frenn then hoped that the conference will mark a starting point for future projects to build an infrastructure based on preemptive construction standards and uphold people's safety pledging to maintain the status of the Institute as a "national, regional and international reference on the highest scientific and technical levels."

The Public Works Ministry

For his part, the general director of roads and buildings at the the Public Works Ministry, Fadi al-Nammar representing Minister Ghazi al-Aridi, stressed the importance of the Lebanese construction standards in "contributing to the deterrence of the risks of disasters and especially earthquakes up to certain degrees and in certain cases," pointing to the amendment of the law and the construction systems and the drawing up



of standards for anti-seismic designs. He added that the administration was on the brink of fulfilling all the conditions to ensure the good continuation of the work, indicating that the Public Works Ministry was seeking the instatement of a comprehensive plan to enhance readiness and the management of the disasters caused by seisms, which will require balance between the human and financial resources and the size of the expected disaster.

The Order of Engineers and Architects

As for the head of the Order of Engineers and Architects, Bilal Alayli, he stated that one of the main facets of the ethics governing engineering work was the protection of human life by understanding the way the buildings interact with seisms, corroborating the Order's efforts to enhance the skills and competence of the engineers "because the foundations of the constructions are the first line of defense against the threat of earthquakes."

The deputy chairman of the board of administration of the Standards Institution LIBNOR, Raymond Qurqumaz, the deputy chairman of the International Union of French-Speaking Scientists and Engineers, Elie Absi, and the head of the UNESCO department for the protection from natural disasters, Badawi al-Rahban, were among the speakers at the conference.

The Institute Participates in a Workshop on Maritime Transportation



On January 27, 2009, Minister of Public Works and Transportations Ghazi al-Aridi sponsored a workshop titled "Maritime Transportation: Growth Requirements". It was organized by First Protocol at the Gefinor-Rotana Hotel, in collaboration with the Beirut Port, in the presence of former Minister of Agriculture

Conformity to Specifications Protects Health, Environment, Consumers, and Producers;

The Institute Has Options that Facilitate the Entry of Imports after their Conformity to Specifications Talal al-Sahili, the Head of the Arab Business Advisers Federation Ayman Othman, The Chairman of the Chamber of Commerce and Industry and Agriculture in Beirut and Mount Lebanon Ghazi Qreitem, The Chairman of the Insurance Companies Association Abraham Matossian, the Chairman of the Lebanese Association for Franchises Charles Arbid, the Business Attache at the US Embassy Megan Macola, the Economic Advisor at the Moroccan Embassy Mohammad Al-Darwish, and other figures involved in the maritime transportation sector.

The Director General of the Industrial Research Institute Bassam Frenn was represented by the Financial & Administrative Director Selim Kfoury, who delivered a speech on his behalf under the title: "Technical Barriers and Facilitation Mechanisms":



The Lebanese economy relies on the foundations and principles of free economy, and Lebanon imports most of the materials, goods and products it consumes – which exceed 90 % of its needs without ensuring the conformity of these goods and products with certain specifications that have special and clear technical requirements to control the quality and level of imports in view of the following:

A) Protecting public health: Particularly in the field of foodstuff, in terms of ingredients, colorings, preservatives, containers, etc.

B) Protecting public safety and comfort: This includes many materials, goods and products, including children's toys, construction materials, auto parts, electrical appliances, electronic and mechanical devices, clothing, fabrics, etc.

C) Protecting the environment: This includes many raw materials used in manufacturing as well as other materials that subsist after being used, such as plastic bottles, refrigerated materials, recyclable industrial waste, etc.



D) Protecting consumers from deception: This includes all consumer goods.

E) Preventing unjust competition, especially for national industries which are already suffering from high manufacturing and labor costs compared to other Arab and Asian countries, according to the requirements of international trade agreements and the Euro-Mediterranean Partnership.

Based on this reality, the Lebanese State has resorted to preventive measures, including giving binding specification for goods related to public safety, health and the environment. The Institute of Industrial Research was tasked with implementing some of these measures, while other departments and ministries such as the Ministries of Health, Economy and Agriculture were tasked with implementing others, depending on the type of goods.

In addition, Mr. Kfoury explained the mechanism that the IRI conducts regarding the conformity assessment to the Lebanese standards.

The IRI at the 8th EURO MED meeting

The IRI director general, Bassam Frenn, took part to the 8th Euromed meeting held in Brussels, Belgium, on October 25th, 2009, and focused on standards, technical regulations and assessment of conformity.

The meeting was aimed at assessing the progress achieved since the last meeting of the task force in charge of preparing and implementing the conformity agreement and admitting the industrial products.

The cooperation between the CEN and the CENELEC, as well as the implementation of the Euromed convention for instotutions were also discussed during the meeting.

Upon the conclusion of the meeting, the cooperation and swift exchange of information related to dangerous products in the "MED-RAS" area, were also discussed.



The Institute Participates in the Meetings of the Committee Tasked with Assessing the Partnership Contract

between Lebanon and the European Community in Brussels

The Industrial Research Institute, represented by Dr. Imad Hajj Chehadeh, participated in meetings held by the committee tasked with assessing the outcome of the programmed activities in the framework of the partnership agreement between Lebanon and the European Community, as part of the annual regular meetings. Dr. Chehadeh presented an abstract about the activities of the Institute in terms of conformity assessment procedures, starting with accrediting its various activities and developing its staff and technical apparatus and the results of the ACAA's Committee chaired by the Director General of the Institute Dr. Bassam Frenn. He said that the recommendations of the Committee were submitted to the Lebanese Council of Ministers in a report along with an action plan expected to be ratified by the Council of Ministers. The Lebanese delegation included delegates from the Ministry of Foreign Affairs and Ministry of Economy and the Ministry of Finance and other institutions involved in the partnership agreement.

Partic ia pation in a Workshop About solar e nergy in Tunisia

The Regional Center for Renewable Energy and Energy Efficiency (RCREEE), in collaboration with the Secretariat General of the Arab League and the National Agency for Energy Conservation (Tunisia), organized a workshop focused on accreditation and measurement classification of water heating systems by means of solar energy. The wokshop was held in Tunis, between 17 and 18 November, 2009.

Lebanon was represented by a delegation including, Dr Imad Hajj shehadeh, from IRI, Pierre Khoury, the director of the Lebanese Center to rationalize energy consumption. The delegation seized the opportunity to assess the situation of the neighboring Arab countries in the field of solar energy as a renewable energy.

The visit included several meetings with all the Arab delegations to discuss the potential cooperation in this regard. The visit also included a field visit to one of the major solar boiler plants in Tunisia (SOFTEN).

With regard to the IRI, the workshop was an opportunity to examin the scope of tests and experiments in the pionneering countries and the possible integration with some countries within the strategy of setting up the energy laboratory that will be launched in mid 2010.

The Industria lResearch Institute in Malaysia

Partic ip a te s In Conference on Non-Destructive Testing

The Industrial Research Institute participated in an international conference and exhibition headlined "Non-destructive testing and its role in industrial protection: its growth and performance" organized by the Malaysia Nuclear Agency, with the participation of the International Committee for Non-Destructive Testing and under the tutelage of the International Atomic Energy Agency in the Malaysian capital Kuala Lumpur from July 20 until July 21.

The Industrial Research Institute was represented in the event which showcased the latest equipment and technologies in the sector by the director of the Lebanese Welding Center Engineer Tarek al-Hakim and the director of the training unit at the Lebanese Welding Center Taher Wehbe, in the presence of international experts from all around the world and institutions involved in non-destructive testing.

The two representatives of the Institute also participated in a scientific seminar on July 22 and 23 addressing the international certification process based on the international standards ISO 17024 and ISO 9712 certificates which



tend to the structuring of the institutions issuing the certificates to those operating in the sector of non-destructive testing and the ways to implement them while benefitting from the Australian experience in this regard, as the lecturer was from the Australian Institute for Non-Destructive Testing.

The representatives of the Institute then conducted a field visit at the Malaysian Agency laboratories on July 24, 2009 in order to check their capacities, the available technologies they have and the research they are carrying out in that area.

The Role of Small and Medium-sized Enterprise s

in Activating the Economy of Euro-Mediterranean Countries

The Head of the Economic and Administrative Studies Department at the Industrial Research Institute, Bassam Kabalan, and representatives from the Ministries of Economy and Industry and the Lebanese Kafalat Foundation, participated in a conference aiming to inform Euro-Mediterranean countries about "the effectiveness of small and medium enterprises in the development of European economies and their role in stimulating and developing the Euro-Mediterranean economies." This conference was held on the 7th and 8th of December 2009 in Cairo.

The conference was organized and sponsored by the European Union represented by TAIEX (Technical Assistance and Information Exchange), in addition to the Egyptian Ministry of Economy, and included representatives from most European and Euro-Mediterranean countries.

The conference addressed issues pertaining to the Euro-Mediterranean agreement on small and medium-sized enterprises (SME).

Among the recommendations of the conference was the adoption of the Euro-Mediterranean Agreement and its implementation mechanism by taking into account the needs of small and medium-sized enterprises in Euro-Mediterranean countries. These needs were divided into four parts:

- 1. Assessing human capacity;
- 2. Acquiring funding;
- 3. Accessing markets;
- 4. Innovation.

The conference also included 30 drafts for amending clauses pertaining to the aforementioned priorities and their development, provided the European Union studies these amendments to approve and endorse the agreement which will be adopted by the Euro-Mediterranean countries in another workshop.

The participants in the conference raised some issues and expressed their viewpoints on the agreement and its content in various countries, in addition to the performance indicators that govern it and the effectiveness of such indicators in the economies of these countries.

The Industrial Research Institute is Briefed on the Activities of the Technical Packaging Centre in Tunisia



Dr. Joseph Matta and Mr. Robert Hajj from the Industrial Research Institute visited the Technical Packaging Center (Packtec) in Tunisia from September 9 till October 2, 2009. They were briefed on the activities of the Center in research, development, and tests.

Packtec Center supports the packaging industry in Tunisia, which is supervised by the Ministry of Industry and Energy and small and mediumsized enterprises. The Centre has specialized laboratories in testing plastic, paper, cardboard, containers for transportation, and food materials.

The Center provides a variety of services and activities that take into account international standards such as ISO, ASTM and EN.

The food material laboratory conducts analyses



to determine the appropriateness of packaging materials, including the identification of additives, components, exotic materials, stocks, and analysis of materials (Phthalate and polychlorinated biphenyls PCB). It also conducts specific tests for the restricted materials such as solvent residues, Isocyanates in plastics, Terephthalic acid, and singlet and polychlorinated ethylene glycol in the food components.

The two visitors were also briefed on the food safety packaging standards, such as the law of 178/2002 (Food Law), Directive 2002/72 (plastics materials intended to come in contact with food stuff), Law 1925/2004 (articles in contact with food stuff) and Law 2023/2006 (Good manufacturing practice of the materials).

Regional Seminarin Syria on Horizons of Industrial Development



The Unit Head of the Documentation and Publication Center, Engineer Siham Youssef, represented the Industrial Research Institute in a regional seminar on the horizons of industrial development through the bridging of the gap between the industry sector, education and the makers of public policies at the headquarters of the Higher Institute for Applied Sciences and Technology in Damascus-Syria from July 27 until July 29, 2009. This seminar was organized in the context of the cooperation between the Islamic Organization for Education, Science and Culture (ISESCO), the Commission on Science and Technology for Sustainable Development in the South (COMSATS) and the Higher Institute for Applied Sciences and Technology (HIAST) with the participation of representatives from Syria, Jordan, Yemen and Lebanon.

The seminar aimed at promoting the importance of industrial development in developing economies and attempted to provide a platform for a meeting among the industrialists, scientists, academics, policy-makers, legislators and nonprofit organizations in developing countries, so as to enable them to communicate and exchange opinions and ideas in order to encourage cooperation among them in the face of the challenges of globalization.

Training Sessionon Projects for Renewable Energies in the Arab States

The Industrial Research Institute, represented by Engineer Mohammed Al-Hajjar, participated in a training session organized by the Regional Center for Renewable Energy and Energy Efficiency (RCREEE), in collaboration with the German Agency for Technical Cooperation (GTZ) in the Arab Republic of Egypt. The session was held for three days and started on February 24, 2009.

Arab countries including Egypt, Lebanon, Syria, Jordan and Palestine, participated in the session, during which the participants discussed the activity of the RCREEE and the projects that were implemented in the Arab countries, in addition to a report on these projects in each country.

The conference included a field visit to the laboratories of energy and solar water heaters, in order to carry out internal and external examinations, benefit from Egypt's expertise in the field of energy and then apply it in Lebanon.





A technical and scientific visit to Saudi Arabia

The unit head of the Electrical Laboratory at the Industrial Research Institute, Bilal Hussein, conducted a technical scientific visit to the Saudi Arabian Bureau Veritas laboratories in Jeddah from January 19 until January 24, 2009 upon a special invitation from the institution and in the context of the technical cooperation between the two sides. The executive director of the Jeddah Bureau Veritas welcomed Hussein and expressed his willingness to ensure the success of the visit. He also praised the technical cooperation between the two institutions in Lebanon and hoped that the Industrial Research Institute would collaborate with the Veritas laboratories in the Arab world to conduct comparative tests, especially after the IRI Electrical Laboratory earned the international accreditation of ISO 17025. Hussein then visited the quality management division to get acquainted with the work mechanism in the laboratories, then lengthily toured all the departments of the electrical laboratories where many tests were conducted over the Saudi standards which are similar to the European ones. The visit was then concluded with a meeting with the official directors before the delivery of the attendance certificate.



Conference on the Development of the Welding Technology in the Arab World:

A Call to Benefit from the Capacities of the Lebanese Welding Center at the Institute

The Industrial Research Institute participated in the scientific and technical preparations for a conference headlined "The Development of the Welding Technology in the Arab World" organized by the Arab School for Sciences and Technology in Damascus - the Syria Branch and hosted from March 9 until March 11. 2009 The conference was held with the participation of the directors and experts of the International Welding Institute which is the most prominent international organization for welding technology, through cooperation between the latter Institute and the Industrial Research Institute which is a permanent member in the international organization. As for the scientific committee which organized and managed the conference, it included the head of the Lebanese Welding Center at the Industrial Research Institute, Engineer Tarek al-Hakim, representatives of the Mechanical, Electric and Electronic Engineering Faculty of Aleppo University, the representative of the Syrian Company for Oil Transport, the representative of the Industrial Studies and Research Center in Syria and the secretary of the Arab School for Sciences and Technology. The program of the conference featured seminars and discussion sessions staged with the participation of researchers enjoying prominent scientific skills and operating in international organizations such as the International Welding Institute, and regional ones such as the Asian Welding

Federation and the Japan Welding Engineering Society. It also saw the participation of experts from Arab countries such as Egypt, Jordan and Lebanon, while apart from Engineer Tareq al-Hakim, the Institute was represented by the head of the Training Unit at the Lebanese Welding Center, Taher Wehbi, who animated a session on training. For his part, the director of development and technology at the Industrial Research Institute, Dr. Imad al-Hajj Shehade, participated in the inauguration of the conference as the representative of the Institute's Director General, Dr. Bassam Frenn. The conference aimed at allowing commissions, companies and specialists in the Arab world to get acquainted with the latest developments in the welding technology sector and use them to push the industry forward, and learn about the quality management systems, rehabilitation and training programs and the adopted certification systems on the international scale. It also aimed at securing strategic plans that could be implemented on the ground, including the drawing of work plans, the establishment of organizational structures that would rehabilitate the cadres enjoying high skills and competence and the development and modernization of the welding technology in the Arab world while benefitting from the capacities and expertise of the Lebanese Welding Center at the Industrial Research Institute.

IRI partic ipates in the Carbon Footprint standardization seminar in Sweden

A standard related to the environment will be issued next year

International cooperation in the fields of environmental workshops and ISO standardization

2009 was a crucial year in the international effort to address climate change, culminating in the United Nations Climate Change Conference in Copenhagen, Denmark, at the end of the year. The purpose: to forge a new climate treaty to replace the Kyoto Protocol.

This was the first seminar meeting within the Sida project "MENA region introduction to Carbon Footprints through Standardization Seminars" sponsored by the Swedish Ministry for Foreign Affairs and was held in conjunction with the ISO/TC 207/SC 7/WG 2 meeting working with the standards for Carbon Footprint:

• ISO 14067-1 Carbon footprint of products - quantification

(Quantifying the carbon footprint, and monitoring and tracking progress in the mitigation of Green House Gases)

• ISO 14067-2 Carbon footprint of products – communication

(Harmonizing methodologies for communicating the carbon footprint information)

The Sida project sponsors participation of

ten countries in the MENA region, and these countries' NSBs (National Standardization Bodies) were also invited to the Vienna preseminar to encourage them to be involved in the standardization process so that they could influence the outcome of the process to their \angle benefit.

The workshop objectives were:

- To provide information on the various schemes used in the world aiming at GHG reduction as part of the mitigation policies addressing climate change, including case studies,

- To raise awareness of the value of using ISO standards as a tool for quantifying, reporting and verifying emission reductions from individual projects or activities (ISO 14064, ISO 14065, ISO 14066 and ISO 14067), also in connection to the schemes,

- To exchange information and provide expert input to the draft publication that ISO is preparing on the subject of the seminar. The existing draft publication will constitute the working document of the workshop. Attending the ISO/TC 207/SC 7/WG 2 meeting, working with the standard ISO 14067 part 1: quantification and ISO 14067 part 2: Communication, for Carbon Footprint in Vienna-Austria.

As Carbon Dioxide emissions account for most of the global greenhouse gas (GHG) effect and global warming, it follows that international stringent standards for carbon foot printing are in great demand.

An ISO standard (ISØ 14067) directly related to climate change, for measuring the carbon foot print of products is currently in progress. Targeted for publication in 2011, this standard will complement the already published standards ISO 14064:2006 and ISO 14065:2006.

Thus these important standards will provide an internationally agreed framework for:

- measuring greenhouse gas emissions,

- verifying claims made about them,

- Accrediting the bodies which carry out such activities.



A strong relationship between the Industrial Research Institute and "Medibtikar" Programme

The EU-funded Innovation Programme Medibtikar presented the general outcomes and achievements accomplished and the activities carried out under the project at its final event on 9 December 2009. The Industrial Research Institute was the sole Lebanese party present at this event.

The seminar, held in Cairo, Egypt, also discussed the importance of coordination among the ENPI South countries for developing innovation cultures and regional projects fostering competitive advantages and positioning the Southern Mediterranean region economy in the global economy. The event also addressed the possible continuation of the more successful actions responding to the main goals of Medibtikar based on five priority axes; Services to Incubators & Technoparks, Technology Transfer, Innovation Finance, Innovation Management and Sector Support. The Final Seminar was addressed at regional level and was targeted at Medibtikar's National Focal Points from the 10 ENPI South countries, EC Delegation in Cairo, beneficiaries (two participants per country), the Medibtikar management team and experts who were involved in the Medibtikar Programme. The Seminar included namely : ICT Incubator (Syria), IDSC (Egypt), El Ghazala Technopark (Tunisia), Industrial Research Institute, IRI (Lebanon), Ministry of Trade & Industry (Egypt), Foundation Mohammed VI pour la Recherche et la Sauvegarde de l'Arganier'' (Morocco), Ipark Technology Incubator (Jordan).

The EuroMed Innovation and Technology Programme, Medibtikar has been initiated by the European Commission, and supervised by the European Union Delegation in Cairo. It ran for three years and has a budget of €7.24 million and it disseminates innovative practices by developing exchanges between planners, policy makers and stakeholders in the ENPI South region. Medibtikar also builds and strengthens



relationships with European public and private partners through the establishment of strong and active networks.

The IRI and Medibtikar hold strong cooperation relations expressed through the technical assistance provided by the Programme in training the future EEN (Enterprise Europe Network) managers of the IRI. This cooperation is expected to be sustained through further continuation EU Programmes.









The Institute Trains Specialists from Kurdistan-Iraq





The Directorate of Applied Research and Testing at the Industrial Research Institute organized a training course, attended by directors, chemists and specialists in microbial analysis from the Central Laboratory and Quality Control Laboratories affiliated with the Ministry of Planning in the local government of the Kurdistan region in Iraq.

The course, which was held at the Industrial Research Institute, addressed the following topics:

- Administrative and technical requirements for efficient testing, including authentication methods of analysis and measurement uncertainty.

- Training on techniques of water filtration and microbial testing in food.

- Training on techniques of analysis, including standardization, and the techniques for the

analysis of food, water, and oil by using the calibration methods and using technology in the chemical analysis.

- Practical training on the techniques of gas chromatography.

The training course started with a series of scientific lectures in the fields of food analysis, quality management system, and the means to implement the ISO 17025. The good work practices adopted in the laboratories were displayed and real cases that arise in this area were discussed.

As for the practical part, the trainees headed to the laboratories to conduct necessary analysis for food items according to international standard methods. They were divided into two categories and received specialized training, either in chemical analysis or microbial analysis.

Training Sessions on So la r Wa te r He a te rs

The Industrial Research Institute signed a threeyear agreement with the Economic and Social Commission for Western Asia (ESCWA) and the Lebanese Solar Energy Society, to organize six training sessions on designing and installing solar water heaters. The sessions were divided into two categories: The first was given by the Lebanese Association for Solar Energy for three days and addressed how to design and install the device in theory and practice. The second was given by the Lebanese Center for welding at the Institute for five days, and in addition to the first session's content, it also provided training on how to weld copper.

In 2009, the Institute completed two sessions according to the agreement. Each session included 12 participants who were divided among industrial, educational and private sectors, in addition to the Lebanese army, which delegated eight military men in the framework of the continued cooperation between the Institute and the Lebanese army.



INTERNAL TRAINING SESSION:

Assessment of Measurement Uncertainty



In order to improve the feasibility of the submitted measurements in the testing reports, Dr Joseph Matta organized an internal training session focused on "The Assessment of Measurement Uncertainty".

The uncertainty measurement indicates the degree of doubt or error intrinsic to each measurement or value submitted in the laboratory testing. When presenting these standards with their related doubt, the regulating entity will have a better chance to evaluate each case, especially the dubious among them.

One should note that the training session, that held in the IRI and attended by a wet chemical and physical chemical team, was based on a Nordtest report.

The session presented the interlinked and broad doubt evaluation and provided the necessary tools to facilitate the assessment process.






The Institute Seeks to broaden the scope of International Accreditation

Auditors from the German Accreditation System (DAP) carried out an investigative field visit at the Institute in June 2009 in order to renew the accreditation the institute obtained in 2004 according to the International Standard (ISO17025). Accordingly, twelve new testing methods have been adopted (electrical and chemical methods).

The accreditation includes 297 testing methods in the fields of electro-chemical and physicochemical tests, as well as wheat and grain tests.

The Institute seeks on the short and long terms to expand the current scope of accreditation and obtain an international accreditation in other fields as specified in the following table:



Reports of business documents

Fie ld	Ac tivity	Specifications
-Batteries	Electrical tests	ISO 17025
- VISUAI-Audio devices		
-Weights	Calibration	
-Cement	Civil and Engineering tests	ISO 17025
-Tiles		
-Gas bottles	Examination and Auditing	ISO 17020
-Oil and Fuel Pipes		
-Commodities Exportation		
-Steam Bollers		
	Product certification	ISO Guide 65
-Welding and nondestructive testing	Personnel Certification	ISO 17024

New a nalytic al servic es

New analytical services at the Industrial Research Institute have been accredited by the German DAR accreditation body (Deutscher Akkraditierungs Rat).

These are in the fields of:

Te sting Vegetable	o ils
Peroxide value of oils and fats	AOAC 965.33 (2005)
Iodine absorption number of oils and fats	AOAC 920.159 (2005)
Animal and vegetable fats and oils. Determination of acid value and acidity	ISO 660 1996 & 1:2003
Animal and vegetable fats and oils. Determination of UV absorbance	ISO 3656:2002
pН	
Water quality – Determination of pH	ISO 10523:1994
Surface active agents- Determination of pH of aqueous solution – Potentiometric method	ISO 4316:1977

$Flexible \ Ac\,c\,re\,d\,ita\,tio\,n$

It is important to note that the accreditation body confirms that the IRI laboratories are competent under the terms of DIN EN ISO/IEC 17025:2005 to carry out the flexible accreditation. It is the highest level of the accreditation. In fact, without prior information and approval by DAP German accreditation system for testing, the laboratory is permitted to use standard test methods or test methods equivalent to them which are not included in the certificate.

Interaction with analytical organizations

Our laboratories interact with various scientific institutes around the world in an interlaboratory or proficiency testing activities as follows:

Bread laboratory proficiency testing with Bipea Cofrac / France in flour

Chemical proficiency testing with FAPAS Central Science Laboratory (CSL) / UK and Swedac / Sweden - Food products

Microbiology proficiency testing with Norsk Matanalyse / Norway in water and food



The Industrial Research Institute participated in

"Project Lebanon"



The Industrial Research Institute participated in the Project Lebanon exhibition in BIEL between 16 and 19 June 2009. The Institute had a special wing at the exhibition, in which it made its different literature available to the visitors, and displayed a film about the different phases it has witnessed since its inception, up until it moved to its new headquarters in the Lebanese University Campus in al-Hadath in 2004.

Several of the Institute's laboratory workers and administrators took shifts in its wing at the exhibition, and briefed the participants on the services provided by the Institute.



Busine ss opportunitie s in Le banon

For the seventh year in a row, the magazine Lebanon Opportunities, in collaboration with the Euro-Lebanese Centre for Industrial Modernisation, - affiliated with the Industrial Research Institute – held the annual conference entitled 'Business Opportunities in Lebanon' on the 7th and 8th of October, 2009, at the Conventions Centre in Dbayeh.

The attendance included several prominent industrialists, business leaders, decision makers, investors and executives, in addition to foreign investors and businessmen.

Workshops were held during this event that included financial topics, marketing, human resources management, manufacturing, hospitality and tourism, information technology, real estate, general trading and other topics.

In conjunction with the conference, a pairing session was arranged between the projects/ companies seeking to obtain the financing of prospective investors, in partnership with FFA Private Bank.

The Industrial Research Institute made note of six innovative projects, which were subsequently added to the efforts of traditional pairing.

Horeca 2009

Horeca is the most extensive exhibition for the hospitality industry in Lebanon and the Middle East. The exhibition, which started in 1994, is a meeting place for the companies working in the domain of hospitality and catering services in the region. As it has become customary each year, the Euro-Lebanese Centre for Industrial Modernisation participated in Horeca 2009, which was held from the 26th to the 30th of April, where the centre's team received customers from the agri-food sector and showcased its services and training programs planned for 2009.



Lebanese CenterforCleaner Production (LCPC)





Initial Seminar for textile sector in Lebanon

The Initial Seminar is the first step in the Inplant Demonstration phase in Industrial sector of Textile which targeted the managers and owners of SME's under this sector.

The Seminar was under the patronage of the Minister of Industry H.E Ghazi Zeaiter represented by the Acting DG Mr. Sami Assi and the participation of the IRI DG Dr. Bassam Frenn, UNIDO Regional Representative Mr. Khaled El Mekwad, President of the Syndicate of Textile in Lebanon Mr. Sleiman Khattar, and the LCPC Director Dr. Ali Yaacoub.

The Initial Seminar was organized to which all the Small and Medium Enterprises (SME's) under the Textile Sector in Lebanon were invited and introduced to the concept and methodologies of CP. It took place on the 30th of April 2009 at the IRI premises.

LCPC Annual Report 2007 & 2008 along with the LCPC CD Rom were distributed to all the participants in the seminar.

After the Initial seminar, the different enterprises were evaluated according to preset criteria set by the LCPC and UNIDO and four SME's were selected to undertake the In Plant Demonstration:





Al Bodon Group Company – Tripoli Baycob S.A.L – Sin El Fil Trico-Orient Star – Haret Hreik Martina – Haret Hreik

CP Implementation in SME's within previous industrial Sector:

SONACO - Al Rabih & Olive Trade

LCPC developed and implemented new services

Site visits to the SME's

Signing Contract between LCPC and selected SME's under the Textile Sector in Lebanon

Site visits to the selected SME's took place on June 2009 to collect primary data and sign the binding contract between LCPC and each of the selected SME's.



integrated with CP methodologies in two industries under the framework of Environmental Sound Technologies (EST) within sectors previously chosen:

SONACO S.A.R.L is an Agro-food Canning Company, established in 1975, what started over two decades ago as a small industry, producing home made food, became a big manufacturing company that extends its exports throughout the world.

Olive Trade® specializes in the production and sales of olive derivative product mix. The company's product portfolio ranges from olives (green, black, pitted, sliced, stuffed) to soap. The main focus is on high quality olive oil (extra virgin, organic) meeting with international norms, as well as the new aromatized oils line that we launched a year ago.





"Train the Trainer" workshop

Train the Trainer workshop is an essential step in the In-plant Demonstration phase for the Industrial sector of Textile which targeted the managers and owners of Small and Medium Enterprises (SME's) under this sector.

The workshop took place on the 19th of August 2009 at the IRI premises. The decision-makers from the 4 selected Textile SME's in addition to the CP experts and representatives from the IRI attended the event.

During the seminar an overview and evaluation was made on how to fulfill the CP reports and how to deal with the data collected at the first site visit to the factories.





Fe a sibility Ana lysis Workshop

The Feasibility Analysis workshop is the fourth step in the In-Plant Demonstration phase for the Textile sector.

The workshop took place on the 18th of November 2009 at the IRI premises.

The decision-makers from the four selected Textile SME's in addition to the representatives from the IRI and Environmental and Academical Institutions attended the event.

During the seminar an overview and evaluation was made on how to deal with the data collected at the site visits to the factories in order to identify CP Options for implementation.







Balamand University students Visit to ICPC premises.

Balamand University students, Faculty of Public Health Sciences, taking a course on Clean Technology and Pollution Control ccompanied with Dr. Berj Hatjian, Director General of the Ministry of Environment visited the LCPC and IRI premises on Saturday 4th of April 2009.

Students were introduced to LCPC and environmental protection and familiarized with the concept and methodology of CP. In addition, the students discussed and evaluated with LCPC team the role they could play in the dissemination and application of CP in Lebanon. The visit also included a guided visit to the laboratories available at IRI to introduce the students to the sampling techniques and metrology.



Thaining sessions on CP to the Saint Joseph University (USJ) and Islamic University of Lebanon (IUL) students

As part of close cooperation with the academical sector and for the purpose of disseminating the CP book in the universities for introducing the CP curricula, the LCPC director held a series of training sessions on the CP methodology to the USJ students mastering in Industrial Technology and the IUL students.

ICPC Assisting the United Arab Emirates and the Kingdom of Saudi Arabia in Setting-Up National Cleaner Production Centre (NCPC)

A Technical Mission was organized jointly by UNIDO and UNEP. The mission took place 25-29 January 2009 in Abu Dhabi, UAE.

In this core, the LCPC assisted the United Arab Emirates, Federal Environmental Agency (FEA),



Ministry of Environment and Agriculture in Setting-Up and establishment of their National Cleaner Production Centre (NCPC).

Furthermore, the KSA showed interest in establishing a NCPC and delegate Dr. Abdullah Nasser, Assistant professor, Faculty of Economics and Administration at the King Abdul Aziz University, to visit the LCPC premises in order to discuss the future collaboration.

The visit took place on the 24th of November 2009 in Beirut, Lebanon.

Election of the ICPC in the Executive Board of the RECP and in the Advisory Committee in the Marrakech Process

As successful outputs of the Lucerne Meeting and based on tough lobbying, we achieved to change the charter of the UNIDO/UNEP Resource Efficiency and Cleaner Production (RECP)



Global Network to include 5 regions instead of 4 and than to be elected in the Executive Board for RECP to represent the Arab Region.

The LCPC was also chosen to be the Regional Representative of the Arab Region / West Asia in the 10 Year Framework of the Marrakech Process in New York.

Summary on LCPC other activities and achievements

The LCPC participated in several international events such as the 3rd Arab Cleaner Production Workshop, the E-waste Management Forum, Sustainable Public Procurement, Competitiveness and innovation through Green Product, Sustainable Consumption & Production, Transportation for Sustainable Development, in different countries such as Jordan, Egypt, Morocco, Qatar, Iran and Austria.

The LCPC have lead to a total yearly saving more than One Million US Dollars through implementation of CP Options in 25 SME's in different industrial sectors in Lebanon.

Future plans

- Launching the GRECO Programme in Lebanon in January 2010.
- Signing a Memorandum of Understanding with RAC/CP.
- Implement the recent approved InVest in Med Project: "Fostering competitiveness for South-Med Product" together with CMPP, Egypt NCPC and UNIDO Marseille.
- Distribute CP certificates for 6 SME's in 3 different industrial sectors.
- Graduate 5 CP Assessors.
- Publish a CP manual and success stories for the Textile sector.
- Introduce CP in academical sector in Lebanon.
- Organize free workshop for SME's on the Environmental Management System: ISO 14001:2004.
- Initiate In Plant Demonstration project in the Printing sector







Industrial Modernization (ELCIM)



European-Lebanese Centerfor

The Euro-Lebanese Centre for Industrial Modernisation unveils bright new initiatives

the Lebanese Innovation Hub, ELCIM-3 and the Food Consultations Centre

The administration of the Industrial Research Institute does not seem to confine itself to expanding the different wings of the institute and introducing subsidiary bodies, and is instead ever-seeking to expand the tasks of these bodies and utilize their potential in a manner consistent with what is implemented in developed countries. In this area, the Institute has worked hard to develop the abilities of the Euro-Lebanese Centre for Industrial Modernisation in its ELCIM 3 Phase, proudly adding the Lebanese Innovation Hub, ELCIM-3, and the Food Consultations Centre.

The Lebanese Innovation Hub

The Lebanese Innovation Hub is a step further in context of the attempts aimed at boosting the efforts of the Industrial Research Institute, with a view to enhance innovation and technological advancement in Lebanon.

The Hub aims at marketing certain projects that are characterized by technological innovation and which have anticipated practical results. These projects must have been researched with confirmed feasibility, in addition to representing a new idea or a new patent in the fields of fundamental sciences and/or applied sciences and technology. The Hub then operates as an incubator by offering incentives to attract such projects, and then by developing and promoting them among its network of prospective investors and partners. As a result, universities, research centres, and small and medium enterprises (SMEs) as well as individual researchers will be able to present their projects and receive technical assistance in order to obtain the proper funding.

Centres to help small and medium sized enterprises

ELC IM 3 – The Centre for Innovation and Technology (CII)

The Centre for Innovation and Technology funded by the European Union is aimed at contributing to social and economic development in Lebanon, by sustaining the economic growth of manufacturing firms through supporting innovative products and technological services. This centre will operate as a centre for incubation and universal coordination to ensure synergy with other institutions. Economic growth of manufacturing firms in Lebanon will be maintained by means of innovative products and technological services provided by the centre, and focusing on three points:



First: the institutional development and provision of consultations regarding policies to the Lebanese government (in terms of legislation), in order to facilitate and encourage technological innovations in existing and new industries.

Second: providing technical support in order to harness innovation in local manufacturing companies, with the aim of improving the competitiveness of existing products and of introducing new products that are more marketable and more feasible in the local and global markets.

Third: the Centre for Innovation and Technology provides the proper funding to support applied research and industrial innovation, and provides grants to Lebanese industrialists to promote research and development with universities and research centres.

The European Union provides funding for the ELCIM-3 project, aimed at improving the competitiveness of manufacturing firms in Lebanon by introducing innovative operation and process models in local and global markets.

ELCIM-3 provides innovative business consulting and advisory services to specific promising industrial sectors, such as the agrifood sector, the packaging sector, the software sector, textile industries and others.

Food Consultations Centre

The Euro-Lebanese Centre for Industrial Modernisation, on behalf of the Industrial Research Institute, a specialist provider of business services, is keen to serve small and medium-sized agri-food manufacturing enterprises. The centre is in the process of establishing a comprehensive consultative centre for the food industry, focused on providing consultations, guidance and implementation of projects for the development of the food industries. Its target will be the food processing and manufacturing companies and the industrial complexes in Lebanon.

The Food Consultations Centre is the result of the joint efforts of the Industrial Research Institute and the Euro-Lebanese Centre for Industrial Modernisation, as well as those of the Chambers of Commerce, Industry and Agriculture, the Association of the Owners of Food Industries in Lebanon, the pilot plants affiliated with the chambers, and a number of universities in Lebanon.

Events organized by the Euro-Lebanese Centre for Industrial Modernisation Training workshops



«Operations and supply c ha in How management: to c re a te competitive advantages»

A workshop entitled 'Operations and Supply Chain Management' was organized by Dr. Victor Arman at the Holiday Inn, Dunes -Verdun on June 30 and the first of July 2009. The workshop focused on a small number of important issues that have recently emerged as pivotal building blocks in world-class supply systems and operations.

Dr. Arman discussed operational strategies and how 'correct' capacity-building can play a crucial role in engendering excellence in a competitive environment. He also discussed the approaches of business process management, and showcased the importance of selection and design in the manufacturing process.

In the second stage of the workshop, Dr.



Arman focused on the concepts of supply chain management, starting with supply strategy, and ending with the operational strategy of Lean Manufacturing and production Just in Time (JIT). Inventory management and analysis policies were also showcased and presented. The workshop's event primarily included lectures, discussions, case studies and video presentations. 25 individuals from various backgrounds representing various companies participated. They had positive reactions, and their evaluation of the workshop was very favourable. They called on the Euro-Lebanese Centre for Industrial Modernisation to organize more workshops on the same subject.



"Talent on demand": how to develop the human element in supply chain management

The above title was the subject of the training workshop held over two consecutive days on the 13th and 14th of November, 2009, at the Holiday Inn, Dunes -Verdun. Dr. Fida Afyouni was the workshop's instructor. She is an associate professor of Human Resources Management at the American University of Beirut.

Following the global financial crisis that started in the autumn of 2007 and which is still ongoing, many institutions came a long way in developing the role of talent in human resources management.

This workshop mainly targeted managers and human resources officers who wish to enhance the performance of their companies through effective human resource management. The main





theme of the workshop was based on the notion that the principles of supply chain management (*), with emphasis on JIT production, can be applied to talent management.

The workshop was designed to meet the specific needs of SMEs in Lebanon, and to address their interest in value creation despite the present and upcoming challenges. Also, the workshop was designed in such a manner that the attendance was fully participating through practical exercises, case studies and discussions. These then provided the participants with the practical ideas, techniques and principles that enable them to develop the skills of their personnel, and subsequently, for further value addition to their enterprises. The workshop brought together 15 participants who occupy diverse positions in various companies, and who generally had a positive outlook of the workshop.

IRI Re la tions with ministries and



public institutions

The relationship with the ministries and public institutions

The Institute's role in supporting the national economy in general

The Institute today represents the Lebanese State in the negotiations and conclusion of agreements of mutual recognition of conformity assessment, certificates and markings in what relates to trade between Lebanon and other countries. The Institute was tasked with the issuing of certificates of conformity in the importation of industrial goods, pursuant to the Lebanese decrees of mandatory specifications, and also in exportation operations in accordance with the specifications of the destination countries.

It should be mentioned here that since 2004, the IRI has been the only internationally accredited body in Lebanon by the German Accreditation Body (Deutsches Akkreditierungssystem Prüfwesen (DAP)), as per the international accreditation certificate DIN EN ISO/IEC 17025. Consequently, the Institute is the only window available for the flow of Lebanese goods, which need laboratory tests and certificates of conformity, to the European and international markets.

The Ministry of Industry

The IRI is considered to be the quintessential technical arm of the Lebanese Ministry of

Industry, especially as the IRI is a subsidiary body of the ministry, and that its Board of Directors is headed by his Excellency the Minister of Industry. The IRI is continuously conducting the necessary industrial inspections and studies, as well as feasibility studies aimed at developing existing industries or establishing new ones. This is in addition to conducting studies on the added value of national industrial products and the need for certificates of origin for export clearance. Also, the Institute worked in parallel with the ministry in granting industrial licences, pursuant to decree No. 8018 dated 20/6/2002, which assigned the required role for the IRI in this regard, and is still working in parallel with the ministry whenever it is required to do so.

Ministry of Economy and Trade

Since its inception, the IRI has been cooperating with the Ministry of Economy and Trade, especially the Consumer Protection Directorate and the General Directorate of Cereals and Sugar beets.

A - Consumer Protection Directorate

This directorate is tasked with taking samples from local markets on a regular and ongoing basis, and handing them over to the IRI for laboratory testing and issuance of the necessary reports, across various sectors. The IRI comprises 12 accredited laboratories that cover different sectors, in addition to a control and inspection unit, the meteorological calibration unit and the Lebanese Welding Centre.

B - General directorate of Cereals and Sugarbeets

The Industrial Research Institute manages and operates the work of the central laboratory for grains, flour and bread research on behalf of the Ministry of Economy and Trade. The laboratory is equipped in accordance with highly specialized international cereal laboratories. The laboratory meets all the needs of this directorate by controlling the quality of the imported and the locally produced wheat and wheat products (briefly, monitoring the ingredients that make up the Lebanese bread loaf).

The Ministry of Agriculture

The Ministry of Agriculture requests the IRI to analyze samples from agricultural products or material on a frequent basis. These are usually sent to the IRI by the ministry for testing, whether upon importing them, exporting them or their usage. The IRI is also tasked with the analysis of fertilizers and pesticide residues in vegetables, fruits and other crops.

Ministry of Public Health

The laboratories of the IRI are used by the Ministry of Public Health in conducting special tests on bottled water, as a fundamental step in the process of obtaining a licence for the water bottling companies, in addition to other tests conducted by the instituted which include, for example, baby formula, cosmetics, medicine and other items as needed.

Ministry of National Defence

The cooperation with the Lebanese army, including its various interests and divisions, has been firmly established since the IRI's inception.

The IRI meets the requests of the committee tasked with the receipt of the analyzed materials and the central reserve committee for foodstuff analyses, the stewardship for uniforms and equipment, in addition to the requests of the corps of engineers, the logistical corps and the military police and other corps as needed.

The IRI also holds training courses on welding works, solar energy and other scientific topics which the IRI proudly provides to this institution.

The Ministry of Interior and Municipalities

The Textile, Leather and Rubber Laboratory at the IRI is continuously cooperating with the security forces in analyzing the uniforms of the Internal Security Forces, as well as shoes and equipment, in accordance with their requirements and in order to certify the conformity of these specimens with the specifications established by them, prior to purchasing uniforms and gear.

The IRI meets the various requests by the Internal Security Forces in different unmentioned sectors, including for example chemical analyses to identify contraband and other security-related analyses.

Ministry of Energy and Water

The IRI works with the Ministry of Energy and Water in different areas, most importantly overseeing the manufacturing of gas bottles and certifying that they conform to the mandatory Lebanese standards. The IRI also inspects gasoline tanks in petrol stations, whether for licensing purposes or for maintenance when requested. In addition, the IRI inspects the nominal load of fuel tankers, in addition to other inspections that are conducted at the behest of the ministry.

The IRI also conducts studies and offers technical consultation in national issues when requested, issues that fall under the scope of both the ministry's work and the IRI's fields of expertise.

The Ministry of Environment

The IRI continually cooperates with the requests of the Ministry of Environment, whether by analysing samples to assess their negative environmental impact, or whether by providing the Ministry of Environment with its services in the field of the inspection and auditing of factories, before suggesting the optimal approach in the production process in order to mitigate the latter's negative environmental impact.

The IRI also hosts the Lebanese Cleaner Production Centre (LCPC), which was established as a result of the cooperation among the Ministry of Industry, the Ministry of Environment, UNIDO and Austria.

This centre's main objectives include ensuring compliance with environmental standards during the different stages of production, something that is beneficial in terms of reducing costs by keeping waste in check on the one hand, and improving the environment by recycling wherever possible during the production process on the other hand.

Ministry of Justice

The judicial authorities continuously refer legal issues to the IRI for technical advice, as the IRI is the reference point for these authorities in what pertains to scientific issues.

Customs

Collaboration with the Lebanese customs is mainly done in the fields of enforcing and verification of conformity with the mandatory specifications required for goods imported to Lebanon, and which are subject to customs restrictions. This is done according to a specific and known mechanism.

The Customs authorities, according to the customary procedure, can send samples to the IRI for analysis and for identification of their components, prior to clearing them for entry into the local markets.

The Lebanese Standards Institution (LIBNOR)

The IRI worked diligently to establish the Lebanese Standards Institution (LIBNOR), which is tasked with issuing the Lebanese standards. In the beginning, this institution was established in the campus of the IRI, which incubated its operations until it was reactivated in 1998. Since then, the IRI published approximately one thousand national standards for the institution, as per annual contracts that were in force from 1998 until 2004.

The IRI is currently represented in the institution's Board of Directors, while the IRI is permanently represented in the technical committees tasked with issuing and updating the national standards.

The Lebanese Council for Accreditation (Colibac)

Some time ago, the IRI realized that the

infrastructure of a world-class quality process must include the following items:

1) A national institution for the issuance of national standards, which in Lebanon is the Lebanese Standards Institution (LIBNOR), a body that is ever striving to improve its role.

2) Bodies for conformity assessment that implement these specifications. This role is primarily assumed by the IRI in Lebanon, not only in the application of national standards, but also in the application of international standards in export operations as the IRI is internationally accredited according to Certificate No. 17025

3) Oversight of the local market. This function is tasked to the Consumer Protection Directorate at the Ministry of Economy and Commerce.

4) A national council for accreditation, whose tasks include accrediting laboratories, monitoring commissions, conformity assessment for products and processes in the country. This national institution was not yet established in Lebanon, and the IRI sought hard to establish it in order to complete the quality infrastructure at the level of national institutions, until the decree of its establishment was issued in 2004, while the decree to establish its Board of Directors was issued in 2006. The IRI is represented in the Board of Directors of the Lebanese Council for Accreditation (Colibac).

This council is still in the process of drafting its bylaws, which are nearing completion. Work is also underway to speed up the passing of the necessary legislations that will enable the council to start its operations and serve the purpose it was created for.





The relationship with the private sector

Ind ustria lists

The IRI allots great importance to industrialists and industry in Lebanon. Four years ago, the IRI concluded an agreement with the Association of Lebanese Industrialists whereby it granted industrialists a fifty percent discount on the costs of all laboratory analyses, in accordance with the list adopted by the IRI more than ten years ago. The services provided by the IRI to the industrialists are as follows:

A- Analysis requests with the aim of improving the quality of production or finding solutions to production problems

Any industrialist can head to the IRI to request an analysis of a product produced in his factory with the aim of improving its quality, or as a result of a particular problem he is facing during production. At that point, cooperation and follow-up begin with the industrialist. In most instances, his request becomes a process of applied research with which these analyses either end up in improving the quality of the product or determining the underlying cause of the production problem and subsequently, working on solving this problem.

B - Pre-export Analysis

There are many products that cannot be exported to foreign markets without first being analyzed. As the IRI is internationally accredited pursuant to certificate No. 17025, its accreditation is recognized by more than 120 countries, rendering it virtually the sole window through which Lebanese goods that comply with technical specifications can flow into the European and global markets, owing to the certificate of conformity issued by the IRI.

Therefore, industrialists head to the IRI to conduct the analyses required by the destination countries, in order to obtain certificates of conformity for their products which would give them access to international markets.

C - Product Certification

This is an optional program that any factory that meets the conditions can request, for implementation in its facilities according to a contract with the IRI and a specific mechanism at the latter; this would enable the factory to obtain the IRI's conformity mark for its products, in an ongoing and continuous manner. The IRI would oversee production through periodical analyses and inspections, before granting the factory certificates of conformity whether for export purposes or for ensuring the conformity of its products to national standards. This takes place in a routine manner, and also on demand, and its cost is factored in into that of the program.

Farm e rs

The IRI's laboratories continuously cooperate with farmers. In truth, many farms voluntarily head to the IRI and request their products to be analysed.

The IRI provides analysis for farmers for the following products:

- Olive oil
- Honey
- Vegetables and fruits (pesticide residue)
- Irrigation water
- Meat and fish
- Other agro-food products

Merchants

There are goods that are subject to mandatory national standards. For this reason, importing such goods is subject to customs restrictions that stipulate their conformity to the mandatory national standards. This is verified by the IRI prior to allowing these goods into domestic consumer markets.

Hence, the relation between the importers and merchants on one hand, and the IRI on the other hand is constantly evolving. Efforts are underway, on a continuous basis, to facilitate trade exchange on one hand, and to verify the conformity of imported goods following a scientific method on the other hand.

Many merchants voluntarily head to the IRI to request tests and analyses of their merchandise and products, in order to determine their conformity with international standards in the case of export, or national standards in case of import, prior to shipping it from the country of origin.

Researchers and scientists

Many researchers and scientists head to the IRI to conduct tests and analyses necessary for their scientific research. Most of the time, their requests become applied research projects, as they are aware of the IRI's capabilities in this area. This is not to mention the fact that the IRI houses twelve laboratories that span many complementary disciplines, in addition to the meteorology laboratory, the Lebanese Welding Centre, the Euro-Lebanese Centre for Industrial Modernisation, and the Lebanese Cleaner Production Centre (LCPC).

Consumers

The relationship between consumers and IRI is either direct or indirect, through the civil organizations and associations concerned with consumer protection, the environment and other fields.

Dire c t re la tionship

Any citizen can go in person to the IRI in order to test any product, substance or other items, which is what is often done by citizens to ascertain the safety of what they consume, be it drink, food, supplies, household electric appliances, building materials, petroleum products and other daily items.

Indire c t re la tionship

Consumer protection associations and other civil organizations often head to the IRI and request analyses and tests of an environmental or health safety nature.

Cooperation with these organizations is done on a continuous basis by the IRI, which meets all the former's requests in return for special fees that take into account their conditions in most cases. If these requests were not complimentary, then they would be symbolic, in a bid by the IRI to support and encourage these groups to work for the public good.

Development of the laboratory equipments and human resources



IRI STAFF

The IRI staff members amount to 126 at the end of 2009; 69% are males, while 31% are females. The age average is around 33 years.

They can be categorized according to the level of their education:

15 hold a 3rd Cycle, 49 hold a 2nd Cycle, 17 hold a 1st Cycle, 29 are in their secondary and technical studies. 16 are in other categories.



IRI Employees

2009 /126 PEOPLE



Education Level	No.	%
3rd Cycle	15	11.90
2nd Cycle	49	28.88
1st Cycle	17	13.50
Educ. Second & Tech.	29	23.00
Other	16	12.69

Average Age	Ge	nder
33 years	69% Male	31% Female

JOB CREATION 1997-2009



New Equipments

2009



This equipment is used to test physical characteristics of steel rebars.



Ion chromatography is a chromatographic technique that is specific for the analysis of anions and cations in water and various other matrices. An ion chromatograph is equipped with a conductivity detector and is capable of detecting both positively and negatively charged ions. With this technology, ions can be quantified in parts per million.



NEAR INFRARED PETRCHEM-CAL ANALYSER SYTEM UZXE-ZX-440XL

Zeltex Near-Infrared liquid fuel analyzer. Calibrated for: Unleaded Gasoline Ethanol blended fuels Leaded Gasoline Diesel Fuel

PHASOR XS PORTABLE PHASED ARRAY (ULTRASONIC)



The General Electric XS is a 2 in 1 portable instrument for the detection of discontinuities in welds using the ultrasonic Non-destructive testing method. It Can be used both the Conventional method (Inspection with single and dual crystal probes) and phased Array (16 channel) method with up to 64 elements Special Phased Array probes. This instrument can detect discontinuities starting from 9 mm welds and up. The Phasor XS Phased Array technology is much faster than the conventional ultrasonic method.

ELECTROMAGNETIC FIELD METER 10HZ-30KHZ



This equipment is used to measure the emissions of electromagnetic field along the transmission lines near the buildings from 66KV to 750 KV

UNIDO Offers The Industrial Research Institute

Laboratory Equipment For Packaging And Labeling

The regional director of the United Nations Industrial Development Organization (UNIDO), Khaled el-Mekwad, visited the Industrial Research Institute in Hadath and delivered to the Institute's Director General Bassam Frenn six pieces of equipment for the packaging and labeling materials laboratory of the IRI offered by the UNIDO-affiliated MACLE program.

The value of this equipment amounted to around \$175,000 and featured: a roughness measuring head (Bendsten>s method) to define the roughness, hardness and air penetration through paper and cardboard, an IGT device to measure the level of resistance of paper to puncture following the increase of the viscosity of the ink and the printing speed, devices to measure the rupture of paper and plastic and the extent of the resistance of the latter materials, a device to check the leakage of oxygen from and into containers and a flow measurement device.

Frenn for his part stressed that the collaboration between the Institute and the international organization was strong and steady and aimed



at serving the industrial sector in Lebanon. He explained that the marketing of products had become a science in itself and that it required wide skills and expertise to know how to present and package the product in a way that would seize the consumer's attention and make him choose it among others, especially since the final choice is often linked to quality regardless of the price, particularly in case the product to which the first is being compared does not meet the required specifications.

New Systems installed

1) Packing and Packaging Materials

a) Metal	
Parameter	
Migration test	
Heavy metals as Pb	
Cd, Hg, Cr, As, Pb	
Chemical composition: Stainless Steel grade	
Zinc coating thickness	
Compression strength	
Aging by light exposure	
Leaching test extraction of metal:	BS
Total viable count @ 30°C (CFU/g)	
Staphylococcus aureus @ 37°C (CFU/g)	
Total coliforms @ 30°C (CFU/g)	
Anaerobic sulfite reducing bacteria @ 37°C (CFU/g)	
Yeasts and molds @ 25°C (CFU/g)	
Pseudomonas aeruginosa @ 37°C (CFU/g)	

b) Pla stic

Parameter	
Moisture	
Ash	
Identification of plastics and polymers	
Leaching test extraction of metals:	
Taste of water	
Appearance of water	
Growth of aquatic microorganisms	

Reference Method

EC 82/711

European pharmacopeia

AAS

Optical Emission Spectrometer

ASTM A90/A90M:1993

In House Method

ISO 2809

7766: Suitability of metallic products for use in contact with water.

FDA, 2001, Bacteriological analytical manual, AOAC International, 8th edition, Chapter 23

Reference Method	
Gravimetric	
Gravimetric	
FTIR	
920: Suitability of Non-metallic products for use in contact with water.	

BS 6

b) Pla stic

Parameter	Reference Method	
Solubility	Standard methods of Chemical Analysis 6th edition, Frank J. Welcher, p 2046	
Specific gravity	Standard methods of Chemical Analysis 6th edition, Frank J. Welcher, p 2053	
Migration test	EC 82/711	
Materials and articles in contact with foodstuffs – Plastic – Part 2: Test methods for overall migration into olive oil by total immersion	EN 1186-2	
Materials and articles in contact with foodstuffs – Plastic – Part 3: Test methods for overall migration into aqueous food stimulants by total immersion	EN 1186-3	
Materials and articles in contact with foodstuffs – Plastic – Part 4: Test methods for overall migration into olive oil by cell	EN 1186-4	
Materials and articles in contact with foodstuffs – Plastic – Part 5: Test methods for overall migration into aqueous food stimulants by cell	EN 1186-5	
Materials and articles in contact with foodstuffs – Plastic – Part 8: Test methods for overall migration into olive oil by article filling	EN 1186-8	
Materials and articles in contact with foodstuffs – Plastic – Part 9: Test methods for overall migration into aqueous food stimulants by article filling	EN 1186-9	
Materials and articles in contact with foodstuffs – Plastic – Part 10: Test methods for overall migration into olive oil (modi- fied method for use in cases where incomplete extraction of olive oil occurs)	EN 1186-10	
Materials and articles in contact with foodstuffs – Plastic – Part 12: Test methods for overall migration at low tempera- tures	EN 1186-12	
Oxygen gas transmission rate through plastic film and sheet- ing using a coulometric sensor	ASTM D3985-05	
Heavy metals as Pb	European pharmacopeia	
Cd, Hg, Cr, As, Pb	AAS	
Tensile strength	ASTM D828	
Compression strength	In House method	
Aging by light exposure	ISO 2809	
Determination of tear resistance part 2: Elemendorf method	ISO 6383/2	
Total viable count @ 30°C (CFU/g)		
Staphylococcus aureus @ 37°C (CFU/g)		
Total coliforms @ 30°C (CFU/g)	FDA, 2001, Bacteriological analytical manual, AOAC International, 8th edition, Chapter 23	
Anaerobic sulfite reducing bacteria @ 37°C (CFU/g)		
Yeasts and molds @ 25°C (CFU/g)		
Pseudomonas aeruginosa @ 37°C (CFU/g)		

c) Paper and Paperboard

Parameter	
Н	
Moisture	
Ash	
Water vapor transmission test	
Heavy metals as Pb	
Cd, Hg, Cr, As, Pb	
Grammage	
Tensile strength, Elongation at break	
Whitness brightness	
Aging by light exposure	
Determination of roughness/smoothness (air leak methods) part 2: Bendtsen method	
Determination of air permeance part 3: Bendtsen	
Determination of tearing resistance (Elmendorf method)	
Determination of resistance to picking – Accelerated speed method using IGT – type tester (electric model)	
Total viable count @ 30°C (CFU/g)	
Staphylococcus aureus @ 37°C (CFU/g)	
Total coliforms @ 30°C (CFU/g)	
Anaerobic sulfite reducing bacteria @ 37°C (CFU/g)	
Yeasts and molds @ 25°C (CFU/g)	
Pseudomonas aeruginosa @ 37°C (CFU/g)	

Reference Method
ASTM D778
ASTM D644
Gravimetric
TAPPI T448 om-09
European pharmacopeia
AAS
ASTM D646
ASTM D828
ISO 11475
ISO 2809
ISO 8791-2
ISO 5636-3
ISO 1974
ISO 3783
FDA, 2001, Bacteriological analytical manual, AOAC International, 8th edition, Chapter 23

d) Textile

Parameter	Reference Method	
рН	ASTM D778	
Moisture	ASTM D644	
Ash	Gravimetric	
Composition of base fabric	FTIR	
Solubility	Standard methods of Chemical Analysis 6th edition, Frank J. Welcher, p 2046	
Specific gravity	Standard methods of Chemical Analysis 6th edition, Frank J. Welcher, p 2053	
Migration test	EC 82/711	
Heavy metals as Pb	European pharmacopeia	
Cd, Hg, Cr, As, Pb	AAS	
Grammage	ASTM D646	
Tensile strength, elongation at break	ASTM D828	
Aging by light exposure	ISO 2809	
Total viable count @ 30°C (CFU/g)		
Staphylococcus aureus @ 37°C (CFU/g)		
Total coliforms @ 30°C (CFU/g)	FDA, 2001, Bacteriological analytical manual, AOAC International, 8th edition, Chapter 23	
Anaerobic sulfite reducing bacteria @ 37°C (CFU/g)		
Yeasts and molds @ 25°C (CFU/g)		
Pseudomonas aeruginosa @ 37°C (CFU/g)		

e) Glass	
Parameter	
Migration test	
Leaching test extraction of metals:	
Taste of water	
Appearance of water	
Growth of aquatic microorganisms	
Heavy metals as Pb	
Cd, Hg, Cr, As, Pb	
Aging by light exposure	
Total viable count @ 30°C (CFU/g)	
Staphylococcus aureus @ 37°C (CFU/g)	
Total coliforms @ 30°C (CFU/g)	
Anaerobic sulfite reducing bacteria @ 37°C (CFU/g)	
Yeasts and molds @ 25°C (CFU/g)	
Pseudomonas aeruginosa @ 37°C (CFU/g)	

f) Wood

Parameter	
Moisture	
Ash	
Aging by light exposure	
Heavy metals as Pb	
Cd, Hg, Cr, As, Pb	
Total viable count @ 30°C (CFU/g)	
Staphylococcus aureus @ 37°C (CFU/g)	
Total coliforms @ 30°C (CFU/g)	
Anaerobic sulfite reducing bacteria @ 37°C (CFU/g)	
Yeasts and molds @ 25°C (CFU/g)	
Pseudomonas aeruginosa @ 37°C (CFU/g)	



Reference Method
Gravimetric
Gravimetric
ISO 2809
European pharmacopeia
AAS
FDA, 2001, Bacteriological analytical manual, AOAC International, 8th edition, Chapter 23



Ongoing employee's formation

LOCAL TRAINING, SEMINARS & WORKSHOPS (1)

Participant	Organizer	Object/Title of the training	Date	Location
Antoine Fayçal Nancy Maalouf Carole Maroun	Minister of Public Work & Transports / First Protocol	Marine Transport: requirements for growth	1/27/2009	Gefinor Rotana Hotel - Hamra
Bilal Hussein Mohammad Hajjar	Cresmed Partners / ESCWA	International Workshop on Multi- user Hybrid Grids	2/4/2009	Hotel Movenpick, Raouche - Beirut
Antoine Fayçal	QUALEB	Market Surveillance Inspectors	2/20/2009	Le Bristol - Hamra
Antoine Fayçal	Engineers Association	Strategies to examine and assess the damaged facilities	2/24/2009	Engineers Association - Beirut
Mohammad Hajjar Ahmad Hassan Imad Kahil Faten Hamouche Elias Maalouf	LCECP FLUKE	The codification of the minimum energy performance standards and efficiency ranks Temperature Calibration	3/11/2009 17-18/03/2009	Crowne Plaza Hotel - Hamra Suites Hotel - Beeneya, Zalka
Joseph El Helou SheikhTalal Zaki Edgard Najjar	UNIDO MACLE	Training Module on traceability	3/20/2009	Four Points Sheraton Hotel - Beirut
Naji Abi Zeid	USJ	Towards Excellence forum	4/3/2009	Faculté des Sciences - université Saint Joseph
Siham Youssef Sami Harb	QUALEB	ISO 17020	14-16/04/2009	Radisson SAS Martinez Hotel
André Kouek George Makdissy Elie Melky Maryam Abou Ham- dan	LCEC	Energy Audit Applications and Methodologies	4/16/2009	Radisson SAS Martinez Hotel
Fadi Mehyo Imad Kahil Ashraf Arabi Ahmad Hassan Maya Majdalani	QUALEB	ISO Guide 65 & ISO 17024	21-23/04/2009	Radisson SAS Martinez Hotel
Taher Wehbé Mark Tahchy Bassam Kabalan Ziad Moukarzel Christiane Jbeily Robert Hajj Wissam Abi Abboud Siham Youssef	USEK	La crise économique et son impact sur la région	4/30/2009	USEK
Bassam Kabalan	Institut des Finances / Ministre des Finances	Institutional reform	11-15/5/2009,	Institut des Finances - Beirut
Raymonde Khazzaka	Ministry of Agriculture	WTO National Workshop on the Agreement on Sanitary & Physo- sanitary Measures (SPS)	18-22/15/2009 19-20/05/2009	Ministry of Agriculture - Beirut
Rachel Dagher Antoine Fayçal	USAID / AMIDEAST	Green Building and LEED Profes- sional Accreditation Workshop	5/23/2009	Order of Engineers & Architects - Beirut

COMMISSIONS, TRAININGS, WORKSHOPS AND SEMINARS

In the frame on the staff ongoing training the number of participants from the IRI in activities within Lebanon reached 96 persons, who contributed in workshops and seminars, totaling

170 days throughout 2009.

17 IRI staff member were part of commissions abroad and trainings stretcehd over 59 days.

MISSIONS (TRAINERS, EXPERTS & SPEAKERS)

	2	2006	2	2007	2	2008	2	2009
	Number of days	Number of participations						
Seminars & workshops	118	46	186	81	287	149	170	96
International missions & training	174	29	79	23	182	31	59	17

LOCAL TRAINING, SEMINARS & WORKSHOPS (2)

Participant	Organizer	Object/Title of the training	Date	Location
Maya Majdalani	QUALEB	Internal Auditor Training Course	26-27/05/2009	Radisson SAS Martinez Hotel
Danielle Gemayel Raymonde Khazzaka Thomas Sabbagh Siham Youssef Taher Wehbé Mark Tahchy Ahmad Hassan Mohammad Hajjar	LCEC	Workshop on Energy Audit in Commercial Buildings: Cases from Lebanon & Tunisia	6/16/2009	Le Meridien Commo- dore - Hamra
Imad Kahil Ahmad Hassan Ashraf Arabi Fady Mehio Mariam Abou Ham- dan Bassam Kabalan	Institut des Finances / Ministre des Finances	Border control and protection of intellectual property	6/16/2009	Institut des Finances - Beirut
Bassam Kabalan	Arab Science and tech- nology foundation	Measures of Support to the Innova- tion of lebanese Small and Medium Enterprises	6/18/2009	CCIAB, Sanayeh
Naji Abi Zeid	European Commission / RCBI	Cross Border Cooperation Mediter- ranean Sea Basin	6/18/2009	Crowne Plaza Hotel - Hamra
Mohammad Hajjar	ALMEE / DISTRES	Solar thermal and photovoltaic elec- tricity market in EU and Mediterra- nean countries	6/19/2009	NDU, Louaize
Antoine Fayçal	SOCOTEC	Prévention des Risques Sismiques	6/19/2009	Salon Project Lebanon - Biel
Robert Hajj	Ministry of Agriculture	Training program for membership of the sensory analysis of olive oil	20-25/06/2009	Agricultural School - Al Fanar
Gilbert Fadel	ELCIM	Operations and Supply Chain Man- agement : How to Build Competitive Advantages	30/06 - 1/07/ 2009	Holiday Inn Hotel - Verdun
Bassam Kabalan	General Union of Chambers of Com- merce, Industry and Agriculture for Arab Countries	The quality and excellence and safety of food for export competi- tiveness	6-7/07/2009	Adnan Kassar building of the Arab economy - Beirut
Raymonde Khazzaka André Kahaleh	MACLE / LibanPack	Training Module on the Fundamen- tals of Packaging	13-15/07/2009	Four Points Sheraton Hotel - Beirut
Mohammad Zeaiter Naji Abi Zeid	Ministry of Environment	Scoping meeting for Vulnerability and Mitigation options and National Economic, Environment and Devel- opment Study	7/29/2009	AUB - Beirut
Danielle Gemayel	UNIDO MACLE / LibanPack	Training Module on Sustainability and Packaging	27-28/07/2009	Four Points Sheraton Hotel - Beirut
Camelia Kanaan Bassam Kabalan	Institut des Finances / Ministre des Finances	Counterfeiting and fraud: Evidence and techniques	23,28,30/07 - 1,13,18/08/2009	Institut des Finances - Beirut

LOCAL TRAINING, SEMINARS & WORKSHOPS (3)

Participant	Organizer	Object/Title of the training	Date	Location
Mohammad Hajjar	Danida / RCREEE / LCEC	Methodology and Policy for Energy Efficiency and Renewable Energies	8/7/2009	Ministry of Energy and Water - Beirut
Mohammad Hajjar	LCEC	Coordinating the National Efforts towards the Active Involvement of Lebanon in the Upcoming Mediter- ranean Solar Plan (MSP)	8/24/2009	Gefinor Rotana Hotel - Hamra
Naji Abi Zeid	Regional Capacity Building Initiative	RCBI Follow-up Information Work- shop	9/9/2009	Crowne Plaza Hotel - Hamra
Bassam Kabalan	Institute of Finance	Counterfeiting and fraud: Evidence and techniques	9/9/2009	Institut des Finances - Beirut
Raymonde Khazzaka	UNIDO MACLE	Training Module on "Pesticide residue"	5-7/10/2009	Safir Heliopolitan - Raouche
Halim El Bayeh Mohammad Hajjar	UNDP - CEDRO project	Workshop on Solar Water Heating Systems and Installations	10/7/2009	Le Commodore Hotel - Hamra
Bilal Hussein Talal Zaki Naji Abi Zeid	Qatar National Re- search Fund / AUB	The National Priorities Research Program	10/7/2009	AUB - Beirut
Bassam Kabalan	USJ	Innovation Chair	10/16/2009	USJ - Ashrafieh
Mohammad Hajjar	LCEC / UNDP	Developing the Solar Water Heaters Market in Lebanon	10/28/2009	Hotel Rotana - Hazmieh
Ziad Moukarzel	ELCIM	Talent on Demand: How to develop the human element in the supply Chain Management	13-14/12/2009	Holiday Inn Hotel - Verdun
Naji Abi Zeid	AFED	Arab Environment 2009: Impact of Climate Change on Arab Countries	19-20/11/2009	Habtoor Grand Hotel and Conference Center
Mohammad Hajjar	meeting with teach- ers in the province of Kharob	The reality of power in Lebanon and the alternatives	12/5/2009	مهنية شحيم الرسمية
Ahmad Hassan	CEDRO project	Workshop on Photovoltaic Systems	12/8/2009	Gefinor Rotana Hotel - Hamra
Mohammad Hajjar Bilal Hussein Tarek Hakim Talal Zaki Joseph Matta	Arab Union for Cement / Holcim	The 7 th Conference and Exhibition on the Arab World to protect the environment in the cement industry, building materials and environmen- tal impacts of the industry	11-12/11/2009	Phoenicia Hotel - Beirut
Elias Dib Mark Tahchy Antoine Fayçal	Ordre des Ingénieurs et des Architectes de Beyrouth	Colloque "Eau et Environnement"	10-11/12/2009	Ordre des Ingénieurs et Architectes - Beyrouth
Naji Abi Zeid	Ministry of Industry	Euro-MED Charter meeting in Lebanon	12/14/2009	Chamber of Commerce and Industry - Beirut
Bassam Kabalan Mohammad Hajjar	UNDP	The Annual Review of the Energy Programme	12/14/2009	Metropolitan Palace Hotel - Sin El Fil

INTERNATIONAL TRAINING, SEMINARS & WORKSHOPS

Participant	Organizer	Object/Title of the Training	Date	Location
Tarek Hakim Taher Wehbi	Arab School for Sci- ence and Technology	Development of Welding Technol- ogy in the Arab World	7-9/01/2009	Damascus - Syria
Nadia Khoury	Dubai Municipality	Dubai Food Safety Conference	23-26/02/2009	Dubai
Elias Dib	World bank	The Investment Climate in the South Mediterranean & middle East Countries	4-5/03/2009	Rabat - Morocco
Antoine Fayçal	UNESCO Cairo	The Application for Disaster risk Management	17-19/03/2009	Tunis - Tunisia
Mohammad Hajjar	RCREEE	Solar Thermal Applications	24-25/03/2009	Cairo - Egypt
Imad Hage Chehade	IRCA	Formation auditeurs et respon- sables d'audit de systèmes de man- agement integrés environnement et sécurité	30/06/2009 - 4/07/2009	Paris - France
Antoine Fayçal	ISO / GSO / BSMD	ISO Regional Workshop: Conformity Assessment Infrastructure Support- ing Trade	21-23/7/2009	Manama, Bahrain
Tarek Hakim Taher Wehbi	IAEA	Scientific Visit to Malaysia	20-24/07/2009	Malaysia
Siham Youssef	HIAST / ISESCO / COMSATS	Seminar on Bridging Gaps for Industrial Development	27-29/07/2009	Damascus - Syria
Joseph Matta Robert Hajj	Packtec	Training session on "Quality control Packaging"	27/09/2009 - 3/10/2009	Tunis, Tunisia
Amine Jbeily	Swedish Standards Institute (SIS)	MENA region introduction to Car- bon Footprints through Standardi- sation Pre-Seminars	17-18/10/2009	Vienna, Austria
Imad Hage Chehade	RCREEE	SWHs Certification and Standard- ization	17-18/11/2009	Tunis, Tunisia
Joseph Matta	Swedish Standards Institute (SIS)	Climate Change, Trade and Stan- dardisattion	22-26/11/2010	Stockholm, Sweden
Bassam kabalan	TAIEX Instument Euro- pean Commission	Multicountry workshop on EU Poli- cies and Activities regarding SME's & Innovation	7-8/12/2009	Cairo, Egypt
Naji Abi Zeid	EU	Medibtikar Final Seminar: Medib- tikar and the Fuuture of Innovation in the MEDA Region	12/9/2009	Cairo, Egypt

LOCAL MEETINGS & INAUGURATIONS

Participant	Organizer	Object/Title of the Training	Date	Location
Bassam Kabalan	Swiss Business Council / Embassy of Switzer- land	L'éducation: une branche économique en expansion	4/6/2009	Sagesse University - Beirut
Bassam Kabalan	Union of Municipalities Fayhaa - Tripoli	Project to develop a sustainable development strategy of the Union of Municipalities Fayhaa	20,22/08/2009	Rashid Karami Cultural Centre
Joseph Matta	Lebanese Academy of Sciences	The first Symposium on the Scienc- es in Lebanon: Present Challenges and Future Directions	6-7/11/2009	Crowne Plaza Hotel - Hamra
Antoine Fayçal Mohammad Hajjar	The Order of Engineers & Architects in Beirut	Coordination Meeting	11/6/2009	OEA - Beirut

MISSIONS (TRAINERS, EXPERTS & SPEAKERS)

Name	Organizer	Object/Title of the Training	Date	Location
Sélim Kfoury	Port of Beirut / First Protocol	Marine Transport: Requirements for growth	1/27/2009	Gefinor Rotana Hotel - Hamra
Imad Hage Chehade	LCECP	The codification of the minimum energy performance standards and efficiency ranks	3/11/2009	Crowne Plaza Hotel - Hamra
Tarek Hakim		Examination and Certification of 4 welders	9/21/2009	Damascus, Syria
Antoine Fayçal	ELCIM	Getting Technical Support	10/8/2009	Palais des Congrès - Dbayeh
Imad Hage Chehade	IANOR	Evaluation de la conformité des produits et inspection des marchan- dises avant expédition	12/15/2009	Alger

IRI SEMINARS/CONFERENCES

Participant	Organizer	Object/Title of the Training	Date
Naji Abi Zeid Bassam kabalan Nancy Maalouf Carole Maroun Christiane Jbeily Sandra Sarkis Mark Tahchy Maya Majdalani	IRI / Medibtikar	Medibtikar Technical Assistance to IRI	23-24/03/2009
Naji Abi Zeid Joseph Matta Nicole Abi Farhat Eliane Sawma Awad Said Yazbeck Elias Maalouf Bassam kabalan	IRI / Medibtikar	Environment Theme in FP7	3/25/2009
Edgard Najjar Camelia Kanaan Mira El Masri Elie Melky Mohammad Zeaiter Nicole Abi Farhat Danielle Gemayel Sahar Estephane Halim El Bayeh Sandra Sarkis Robert Hajj	IRI	Measurement Uncertainty	5/27/2009
Mark Tahchy Bilal Houssein Taher Wehbé Hovig Kouyoumdjian André Kouek Imad Kahil Elias Dib Hiba Yaacoub Imad Hage Chéhadé Robert Haddad Christiane Jbeily Mahmoud Amhaz Bassam kabalan Khaled Ghoul Ahmad Habli Ziad Moukarzel	IRI	Présentation de l'AMDEC	10/13/2009
Edgard Najjar Halim El bayeh Hanine Abd El Rahman	LCPC	"Train the Trainers" Workshop	8/19/2009
Danielle Gemayel Mohammad Zeaiter Maya Majdalani Hanine Abd El Rahman Jihad Hage Chehade	LCPC	Feasability Analysis Workshop	11/18/2009





Enhancement of Cooperation between Industrial Research Institute and Qatar Science & Technology Park







On April 7, 2009 the director general of the Industrial Research Institute, Bassam Frenn, put forward the activities of the Institute in terms of consultations, research and services before the deputy director of the Qatar Science & Technology Park Lucio Rispo and the director of operations Imad al-Husseini, in the presence of the Institute's directors and advisors.

The meeting complemented the results of the official visit of Industry Minister Ghazi Zeaiter to Qatar end of 2008, during which it was agreed to witness an exchange of visits between officials in both countries in order to enhance the relations, develop mutual research projects and exchange expertise.

During the meeting, Frenn went over the activities of the Institute in terms of consultations, research, services, laboratory testing and certifications, as well as its support of innovation, technological industries and programming and its interest in seeing the industrialists committing to environmental, health and public safety standards. He also spoke about cooperation possibilities with the Qatar Science & Technology Park and the implementation of joint projects between the two bodies.

For his part, and after having visited the various departments of the laboratories, Dr. Rispo expressed his interest in the activities of the Institute, praising the infinite accuracy and the developed methods with which the different tests were conducted. It was thus agreed to implement joint projects between the Institute, the Park and specialized European institutions, namely Italian ones. Rispo said at the end of the talks: "In a relatively short period of time, the Institute was able to secure important accomplishments which have taken European countries years to achieve." Cooperation was agreed between the Industrial Research Institute and the winner of the Star of Science Award Mr. Bassam Jalgha, as the Institute's work encompasses the advanced specialized fields and fundamental skills, and as a subsidiary of the Lebanese Innovation Hub.

Mr. Bassam Jalgha won the Star of Science Award, which is supported by the Qatar Foundation, for his project 'Douzan' [Tuner], an innovative machine to tune Arabic stringbased Musical instruments in an automated, accurate and fast manner. The cooperation

Stars of Science

at the Industrial Research Institute

was agreed upon following the visits made by Mr. Jalgha to the Industrial Research Institute, where he studied the possibility of using the services available there to develop his awardwinning project.

Officials in the Lebanese Innovation Hub also expressed their willingness to put at his disposal all the facilities and corporate services available at the Institute, with a view to determine the best approach for marketing the project.

This cooperation is one of many initiatives launched by the Institute recently.

Cooperation between QUWIC

and IRI

The Executive Director of the QU Wireless Innovations Centre (QUWIC) Dr. Adnan Abu Diya visited the Industrial Research Institute on July 28, 2009, and had a tour of the various facilities and services present there.

The two sides then expressed their interest in mutual cooperation in the future, particularly in the field of innovation, and studied the possibility of establishing a joint venture between the centre and the American University of Beirut, with the aim of working together to develop one of the new projects that has been approved. The two sides also signed a non-disclosure agreement with the aim of ensuring the confidentiality of the project, and to facilitate the exchange of information and services in the future.

Memorandum of understanding

with the American University of Beirut

Owing to their joint interest in innovation and new projects, the Industrial Research Institute and the American University of Beirut agreed to cooperate in supporting such projects. Both sides signed a memorandum of understanding (MOU) that establishes a framework for their cooperation, and according to which they can develop cooperative activities to enhance and implement innovation. This cooperation will take the form of joint research and development activities, feasibility studies in the target market of the offered products, and the exchange of information related to the new products mentioned above and their development. The two sides also signed a non-disclosure agreement to ensure complete confidentiality, as part of their MOU.

RESEARCH & DEVELOPMENT

Туре	Numb
Sea water contamination	20
Industrial studies	7
Environmental studies	4
Gas effluents	6
Liquid effluents	2
Noise pollution	3
Inspection visits	2
External audits	18

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Composition and textural properties of soot and study of their oxidative elimination by catalytic process

D. Courcot, H. Laversin and F. Ledoux, F. Cazier, J. Matta, R. Cousin and A. Aboukaïs

International Journal of Environment and Pollution, Vol. 39, Nos. 3\4, 2009.





Local partners of the Industrial Research Institute

International partners of the Industrial Research Institute







The Ministry of Industry at IRI

Dedeyan: Our aim is to revitalize the Lebanese economy; the industrial sector is capable of becoming a key partner



The Lebanese Minister of Industry Mr. Abraham Dedeyan announced that he is seeking to make the Industrial Research Institute (IRI) a supporting body for each industrialist, as the industrial sector is fully capable of becoming a key partner in supporting the overall economy.

Dedeyan's statement came during his visit to the IRI in the campus of the Lebanese University in al-Hadath on December 2, 2009. He was received there by the IRI's Director General Bassam Frenn and the senior officials in the Institute, where he was given a field tour that the industry minister ensured included the IRI's various laboratories, divisions, sections and departments.

In the beginning, Frenn explained the evolution of the Institute, its role and how its functions were expanded over the past ten years, becoming a specialized institute recognized by international research institutes, and a key partner that is capable of designing and providing high quality services. This happened in conjunction with the equipping of all its laboratories to become accredited by major European and international accreditation bodies. Frenn then said that the institute employs a homogenous work team, and that it has provided job opportunities for more than one hundred highly skilled individuals who hold doctorates in engineering, pharmacology, economics and sciences, and also masters and bachelor degrees in engineering and university diplomas in various specialties. This is in addition to a large cadre of experienced technicians and administrators.

Frenn also said that the role of the Institute has evolved and that its functions have expanded over the last ten years, after its adoption of an equipment strategy, openness strategy, and after building relationships with the institute's counterparts in the Arab states and Europe. The IRI has become a specialized institute recognized by international research institutes, and a key partner that is capable of designing and providing high quality services, in conjunction with the equipping of all its laboratories to become accredited by major European and international accreditation bodies.

Frenn then added: The Institute continues its endeavours in support of manufacturing activities, and in providing consultations and support to Lebanese industrialists in order to improve their performance on both the local and international levels, and also in order to facilitate their bids to secure long term financing. This is done through the Euro-Lebanese Centre for Industrial Modernisation (ELCIM) and UNIDO's -United Nations Industrial Development Organization

Frenn confirms that the institute has become a specialized institution recognized by international research institutes.



- Lebanese Cleaner Production Centre (LCPC).

At the level of laboratories, the Institute now houses 12 modern laboratories equipped with state of the art equipment and tests, including five internationally accredited laboratories. These provide about 300 different accredited analysis methods, which allow industrialists to obtain internationally accredited certificates that pave the way for them to export their products to foreign markets without any hurdles.

He said: "The IRI also conducts auditing and certification, and grants certificates of conformity, in addition to participating in drafting Lebanese standards and specifications in collaboration with the Lebanese Standards Institution (LIBNOR)."

Minister De de van

At the end of his tour, Minister Dedeyan expressed his admiration of the Institute's development. He said: "We aspire that the IRI will become the direct support for each industrialist that seeks to elevate the quality of his institution's work, whether at the levels of production, competition or exportation.

Our goal is to revitalize the economy of Lebanon. The industrial sector is fully capable of becoming a key partner in achieving this lofty goal. We also aspire to



draft business-stimulating policies, which will result in the strengthening of productive institutions in Lebanon, while encouraging investments in the industrial sector, in particular in the industries based on new knowledge and technology, and the eco-friendly greed industries that protect nature from pollution and greenhouse gas emissions.

Naturally, this requires several measures, most importantly securing the necessary funding for research and studies, as well as passing the necessary legislations to improve productive capacities and competitiveness."

He then added: "Lebanon has managed to avoid being affected by the global financial crisis, becoming a safe shelter for the owners of capital. This helped raise reserves in the Central Bank to 27 billion dollars. But we do not want to accumulate money only to benefit from interests. Instead, we are seeking to adopt a policy that attracts investments in the industrial sector, by conducting feasibility studies for lucrative projects, and this is where the role of the ever growing IRI fits in. We believe in Lebanon and in the ability of its citizens to meet challenges, and to create, invent and grow. We also aspire for this vision to expand and spread among the owners of capital as well."

IRI Dire c tor General featuring on Télé Lumière



IRI Director General, Dr. Bassam Frenn, appeared as a guest on Télé Lumière, on August 8th, 2009, during an episode of "Lebanon at the center of the world", presented by Khalil Sassy.

The discussion focused on the industrial and economic situation in Lebanon in general and the IRI in particular. Dr. Frenn highlighted the importance of the IRI on both national and productive levels in Lebanon and he explained the role assumed in this regard. He introduced the institute since its inception until today: how it works and with whom it collaborates from the public sector to the industrialists and individuals. He also described the various activities and projects: from the "cleaner production center" to the "Euro-Lebanese center for industrial modernization".

During the discussion, Sassy underlined the importance of the Peace industry and industrial production, stressing that Peace has two references in the world: the first reference, is the peace of God that is always present in the heart and mind of every human being. The second reference is the idea or the study or any item produced by a human being for the wellbeing of his fellow human. This is also a step on the way of the peace of God on earth.

Visits to the Institute



Visit by staff members from the Ministry of Industry:



Visit by officials fro Institution (LIBNOR):



Visit by students from the University of Balamand:

A delegation of students from the University of Balamand, accompanied by the Director-General of the [Ministry] of Environment, made a field visit to the IRI, and were introduced to its laboratories, and its scientific and research facilities in the field of environmental sciences.

- The IRI received a group of staff members from the Ministry of Industry, mostly new employees. They spent a full day being briefed on the work of the institute and on its scientific capabilities, during a field tour of the laboratories, centres and divisions in the institute. The ministry staff met with the Institute's staff, and the particulars of the relationship between the ministry and the IRI were explained, as the latter is a subsidiary body of the ministry, and is its technical arm par excellence.
- The result was made as a result of the both the ministry's and the institute's officials' determination to explain the reality of the existing relationship, and the need to expand and develop it in an ongoing and continual manner.

Visit by officials from the Lebanese Standards

- The IRI received a visit by the staff of the Lebanese Standards Institution (LIBNOR) over a full day, during which the depth of the relationship that brings the two institutions together and the scope of their integration was explained. According to the applicable laws, LIBNOR issues the national specifications, while the nationally accredited institute verifies the conformity to these specifications.
- The staff members had a field tour of the IRI's laboratories and divisions, and were briefed on its research and scientific capabilities and what benefits can be incurred from those, with a view to issue full and comprehensive standards, as this process must include tests and verification, prior to drafting the texts.


DECREES

Decree		Official Newspaper		Subject	
nb	date	issue	date	,	
1490	6/3/2009	13	19/3/2009	Memorandum of Understanding between the Lebanese Standards and Norms Organization and the Cypriot Standardization Organization.	The President of the Republic
1624	25/3/2009	15	2/4/2009	Signing of a technical cooperation agreement in the area of standards, norms, laboratories, and quality systems between the Republic of Lebanon and the State of Qatar.	The President of the Republic
1635	2/4/2009	16	9/4/2009	Signing of a technical cooperation agreement in the area of standards, norms, laboratories, and quality systems between the Republic of Lebanon and the State of Qatar.	The President of the Republic
2211	6/6/2009	29	18/6/2009	Memorandum of understanding for technical cooperation between the governments of the Republic of Lebanon and the Republic of Turkey on technical systems. standardization. and metrology—accreditation and evaluation of conformity.	The President of the Republic
2506	8/7/2009	34	16/7/2009	Setting the attendance fees received by the president, deputy president, and board members of the Lebanese Accreditation Council.	The President of the Republic
2604	17/9/2009	44	30/08/2007	Control of ozone-depleting resources.	The President of the Republic

DECISIONS

Decision		Official Newspaper		Subject		
	nb	date	issue	date		
	49/1	5/2/2009	7	12/2/2009	Amendment of the decision 3261/ dated 152004/10/ (reactivation of the Ministry of Agriculture Laboratory in Kfarchima for the analysis of agricultural chemicals).	The Ministry of Agriculture
	62	5/2/2009			Request by the Ministry of Industry for the approval of the delegation to the ministry, the Industrial Research Institute, and the Lebanese Standards and Norms Organization to sign some common agreements with Iranian Counterparts.	The Council of Ministers
	62	2/6/2009			Request by the Ministry of Industry for approval to reevaluate decisions of the council of ministers relative to conferring a legally binding character to several national standards provided they conform to European standards.	The Council of Ministers
	250/1	21/5/2009	29	18/6/2009	Formation of a national committee for the Olive and Olive Oil sector in Lebanon.	The Ministry of Agriculture
	64/1	18/6/2009	33	9/7/2009	Formation of the board of trustees of the Industrial Research Institute.	The Ministry of Agriculture
	438/1	3/10/2009	47	8/10/2009	Specification of the cases when laboratory analyses need to be repeated on imported meats.	The Ministry of Agriculture
	88	19/10/2009			Formation of a committee to evaluate the Lebanese Standards relative to sanitary materials.	President of the Council of Ministers







اعطاء شبهادة الـNF في ضرئنسا (CERTIVEA) الحادثات فى معهد العالم العربى هي باريس (IMA) حيث تم توقيع انضاق تعاون وتبنادل بين الاطراف

أعلن للدير المام لعهد اليحوث 1-113.1. D. Laure D. (1408)

المتاعية بسام القرن انه دبات في ملتمور المهد ان يمنح شهاءة (NF) وفق المايير القرنسية) للابنية دات الطابع الخبدمياتي وفيقينا للشقلية العالية الجديدة للأبنية

وهدف الاجتماع الى عبيد تفعيل العلاقة بين



11 ستروماً في الألوبية السمد بين هذه الشركاند وتقوم المعمومة المظودية بدور السبيل والسم والمتمل لهذه العلاقة، كذلك حدير تحد

البرانها التنافسية في الأمراق العالمية وتوشعه ويعطية

الشركاني، من لول تقيير سمو علم السناعة في المؤسسات الالتشاجعية والحرات السناحية

والباطين الكانيمين وأكد القين على هذا التزارج بين حاجات المصوماً على الانترات

البنان والزويدها بأدراك بحلية تساعد في تعزيز الاكانيجيين والافادة منها في سقاريح الطوين



of Anitia S

، دو ظهر: حدیثًا بلندهٔ آفسان کرد هی استانها افکار الحدید در درمان آلار

to the international internation















بعد بیند بابعه بینا را بابعه از باغ این فرایسی از این بینه از باع این هر خلاف انصبا باغد مرجع باغ ایس از باغی بینان فرایس ایسی بر مرجع این ایسی ایسی ا -----

الله جمعة الديام. العلى طبيقة الملكي جليلة، في تطارّ عنها السيد المدانية. طبقة الله: هو ... المراكز الطبة البالية الرشمة في سباك البيدة واليرجة إرسارة.

امی برج حال می افتره المین استاح است. از بیشم است است را اینک ماه (بدار میار دید) مدر از اینک ماه است را اینک ماه (بدار مینی ماه) اینک و امکار از اینک اینک اینک اینک اینک اینک اینک اینکین از اینکین اینک ماه (بدار مینی ماه) بالای ماه (بدار ماه) ماه اینک اینک اینک اینک اینک اینک اینکین از اینکین اینک ماه (بدار مینی ماه) بالای اینک اینک ماه ماه اینک اینک ماه اینک اینک ماه (بدار اینک اینک م اینکین از اینکین اینک می ماه (بدار اینک ماه) اینک ماه (اینک ماه) اینک ماه اینک ماه (اینک ماه) اینک ماه (اینک ما And the second states which the state of the



	- Martinghil, - Madranday I March 3						
موتمر لـ الـبـحـوث الصـنــاعـيـة، وتـقـابـة المصنـدسين عن الـزلازل: خـطــة شــامــلـة لإدارة الــكـوارث والالــتـزام بمواصـفــات الــبـنــاء							
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تقبل المدير العام لمعمد البحوث الصناعية بسام رئيس "واحة العلوم والتكنولوجيا" في قطر لوتشيو يات عماد الحسيني، في حضور مديري المُعَمَّد ومَسَتَ الاجتماع تتمة للزيارة الرسمية التي قام بما وزير الصناعا ل في نماية العام الماضي حيث اتفق على تبادل ا



win any large faultar 60, failure flater ووو بأورا تسعد الذريتيم سيامية والزية الأسينجار الميافش

محد ورير المنافة الرادام ددة بادر قبل طور اسب مفود الرمون المناقية في حرم الجامعة الليائية فن الحديد فى لماية، ربي من المعود سيار التي بالون دينانا في معود المواد السائمة. التجايم في عمل مجامعاً في أساب الكانات التالية والتي يعمون باليات واستاحا

يواسل الحجي المنطقة التاجية الأعداد المناعلة وعدمو الاستشارات والمساعدة الاستحي الشاسي من الكل ترتيبين الطوم على المحدين المحاص والحراف والالك في الان مسيول الصوليم على عوارة عليه عويلة علامي

رواني منت المتنزلات بك المترو تستروك 12 ماديرا حدنا ومحورا 1910ء والمتروي المطورة والبائلة، ومن بينوا أحيات حصرة مديرات محمدة لألمام.

بهای اجتاع اینونه، بعدی اوری دیده رقبان اعداده بیشو السوید روان حلیا بودور این آب بعرف اسمید. است: المیادیر اکار اینیادی سبخت الان رواز مسیوله فکر خواسمیه سواد فکی محمد الایان او المیاسیه او

سینی الحاق الاستان المالیة البادی المالا و السایور الار رفته آن المالی المالی المالی المالی المالی المالی مراکز المالی المالی من المالی الم مراکز المالی المالی من المالی الم ليكن والانطاقة الإمرارية. المحمدي أن الارتباطية المراجعة المراقعية المن المهول الذير الأسات والتراسات ووقع النشريات. الأولية الذيلة المسبب الموالية الإنامات والناكسيات.

أسحا المساويقين لسكا فأربه فيلاية الملبية الأمين سيمها متدأ المسا فأسال المالا الأبر فلايا بقو

الاستيادين قبل كاريك مكان الاستيار ميرين الاستيادين قبل قبل كريك في الايرين المريزين الايرين أو مكرين قبل الاستيار في المريزين مسجو الايرين مريز ماريك الايرين الميلية المنامي يتارين قبل على بويدة الايلة على تواريع المنامي والاين والدي الايرين الايرين هذا الايلة الميل أوليان وإلى الايلة المالي

ولان قور ده بادا اهد سرت وجود ها الام السبية الطول في السيد معن بحضود سياداد الطواه واجامعين والباليهون الان البحدية والقير والساط والقمار. وها الام ميروك الموالية الر المحرك والذا المان ولى الألب الصحية في المحرك بيركل البحان

وأعلما محتمد الما أن المتحر محمر العراق الايوس - الشامي المرحمة المتحمر (2018) والمرار التشامر. الامام الأمام الذي استماما الأمام المسار المستري (2014) ويولد مستقام المواسمة المعرمة . والمتوسفة الامام ومناح المسير ومد المامو والراح الأموا الجاري والمسير والبرية السواط الطافة .



اختتبت لجنة التئميق لمراكز البحوث الصناعية في الدول العربية إجتماعها العاش برئاسة المدير العام لمعهد البحوث المشاعية الدكتور بسام الفرن بمشاركة سللين عن الأردن والسعودية والسودان وسورينا وليبينا وقطر والكويت ومصر والمنظمة العربية للتنمية الصناعية والتعدين

وتوافق المجتمعون على أن البحوث التطبيقية تشكّل الغير الأساس في مجالات صناعة المعرفة وتـطويرهـا، على أن تُدَرافـق مع سياسة نقـل التكنولوجها لتكون الدهامات والركانز الأساسية لشطوير صناعاتنا ومنتجاتنا، وأن الأرتباط العضوى لهذه البحوث الثطبيقية بالجهات المعنية بنتائجها أي مؤسسة الإنتاج، هو المؤشَّر المقيقي لتطوير وتحديث والإستفادة من فرص التطور والإيداع

وأصدر المجتمعون التوصيات الثالية، على أن شعرض على الدجلس الوزاري لوزراء الصناعة العرب لإقرارها وتبذيها:

٨. الشأكيد على المنظمة بلعب الدور الميادر بالتعاون مع أعضاء اللجنة في تفعيل المطوات العملية ومتابعة تنفيذ المشاريع التي تقرما اللجئة.

٣. التواصل الشنائي والمتعدد الأطراف بين مراكز ومؤسسات البحوث الصناعية بحيث يحفز التواصل لإقامة التعاون البحثي والمشاركة في الغبرات والغبراء لإثراء التجربة فيما بينها وبمآ يودى إلى تحسين الأداء والمنصو المستاعي مع إحاطة المنظمة علما بما يتم بهذا الصدد

٣. قيام المنظمة بإعداد بياتات تماذع المنفعة (Utility Models) المسجَّلة في العالَّم والتي انقضت بدءً حمايتها، وإتاحتها للدول العربية إلكثروتها.

٤. قينام الدول الحربية الأعضناء بنراسة احتهاجاتها من التقنيات والتكتولوجها المصية بحق أو أكثر من حقوق الملكية الفكرية وإعلام المنظمة بها لقيامها بالتنسيق فيما بين الأعضاء لاستعدار تراخيص جماعية تستغيد منها الدول الأعضاء بمقابل مالى مناسب وعادل

٥. الإستشادة من حصول المكتب المصري ليراءات الإختراع على اعتماد المنظمة العالديا للملكية الفكرية كجهة بحث وفحص دولى مبدئي باللغتين العربية والإنجليزية لطلبات العصول على برابات الإختراع.

 التأكيد على ضرورة إيجاد تشريعات قطرية في الدول العربية تؤمن بحماية المؤشَّرات الجغرافية البالة على منطقة بعيتها أو ظروف متاخية محددة أر مهارة متتاع بذراتهم

ورشة عمل متخصصة فر معهد البحوث الصناعية

افتتح السي المام لنعود البحرى المتاعية بسام اللرن في ذامة المداغران في المهد ورشا عمل نظناها المصرمة المظردية أيمانون سوتشقور التي أنشأها البركار الأيريني ، ألبناني النسبة. الستامي ELCM بمشاركة همسا رؤساه شركات سللجا للبرمجيات في لستان وسيعة باحلين الدوجين من جامعة الملمند والهامط الاميركية في ميريف ومدير مركل BLEM ريما البهير ومستشدار المركز الاستداد الماضير في الجامعة الأميركية فؤاد مرار وأكد يسلم القون ان أبوار، المفيد مقترمة داشةً

لشلطهم نشاطبان سائلة ترمي الى شقرير الستامان التكترلوجية والامابة من هراند الاكانيمين في هذا المهال

مناعة البرمجيان في ابتان والبعث الحلي في مجالها ميث عرض نشاط والتاجيا كل جها، لم انفقل المطمعين الرحلقة حرارية لقحديد الايلويبات للمحت العلمى الذي تعتاجه عذه





DR. BASSAM FRENN, DIRECTOR GENERAL







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FINANCIAL & ADMINISTRATIVE DIRECTORATE



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