



معهد البحوث الصناعية

INDUSTRIAL RESEARCH INSTITUTE
INSTITUT DE RECHERCHE INDUSTRIELLE



2022 ANNUAL
REPORT

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*Forward of the Director General
of the Industrial Research Institute,
Dr. Bassam Frenn*

No matter how optimistic our outlook is on life, always expecting positive things to happen, building on previous successes that still have a bearing on the present and will continue into the future, there is no escaping the tragic economic situation and its devastating impact on the structure of the state and its institutions that were forced to operate in exceptional circumstances.

The reason is due to a political-financial-social crisis that has been raging for years, and which has robbed citizens of their confidence in officials. Likewise, foreign countries have lost confidence in Lebanon. They have reduced their level of relations to the minimum, and conditioned any rescue initiative on immediate reforms in reorganizing administration, controlling public finances, rationalizing spending, reducing the number of employees, consultants, and those benefiting from the public sector under various designations, restoring electricity, telephone, water and sanitation, and rehabilitation of infrastructure in general.

Matters were made worse four years ago, by the collapse of the national currency against the US dollar, and the evaporation of funds deposited in banks. Chaos prevailed in the exchange rates, and the prices of fuel, medicine, and foodstuffs underwent unprecedented fluctuations and chaos, compounded by the reduction of people's purchasing power, and the spread of extreme poverty among the Lebanese.

We should not forget also the effects of the refugee crisis on the Lebanese economy, which is basically small in size, and has become unable to cope with this heavy burden.

The foregoing helps to explain the difficult environment prevailing in Lebanon, not to mention the huge losses caused by the Beirut port explosion, which killed hundreds, injured thousands, and caused the destruction of entire neighborhoods in the capital.

To top it all, during the past year, a war broke out between Russia and Ukraine that has impacted the economies of countries around the world,

forward of the director general

because it led to an increase in the prices of fuel, gas, flour and oils, and the threat of the expansion of the war to include more countries and other axes.

It is not possible to discuss economy, industry, the Industrial Research Institute and R&D in general, without referring to these tragedies that have befallen Lebanon and the Lebanese. The globalized economy is intertwined with politics, both worlds actuate each other; so when one of them is out of order, the second will inevitably stop spinning.

In Lebanon, because the Lebanese people are a resilient, hard-working, believing, and perseverant people, the traditional equations are somewhat different. Things go the Lebanese way, meaning that the Lebanese do not give up. It is

no coincidence that they have been likened to the phoenix. They renew themselves, rise up, shake off their ashes, and soar again.

At the Industrial Research Institute, despite the gloomy outlook prevailing in Lebanon and the countries of the region, we maintained our usual performance in terms of efficiency, quality of services, and speed of delivery. We also developed and expanded our activities. In crises, we are among the first on the scene devising solutions.

We have never relented. This is recognized by officials in the public and private sectors and our regional and international partners. We have made a commitment to the citizens, to maintain our service and dedication to Lebanon's economy, its recovery and prosperity.



IRI

IRI: Its Purpose & Function

The Industrial Research Institute is a Lebanese institution for studies, industrial research, and scientific testing and analysis. IRI is a non-profit, non-commercial, public utility organization having an independent legal personality with the right to own, purchase, sell, insure, accept donations, take loans, and engage in litigation and similar activities. IRI was founded in 1953 and was linked to the Ministry of Industry pursuant to Article 3 of Law n° 642 of June 2, 1997. IRI is governed by private law, and its bylaws and internal and financial regulations.

IRI enjoys financial and administrative independence and is subject to post-auditing by the Court of Accounts in what concerns the contributions of the government to IRI.

IRI's headquarters are located in Hadat, and it is entitled to establish branches in all parts of the Lebanese Republic and abroad.

IRI is an independent national research center, and combines:

- Knowledge, expertise, and specialization
- Scientific material and equipment
- Data and technical documents.

IRI offers specialist scientifically reliable services to the national economy as well as existing industry and those which can be established with the aim of industrial development. The services include:

- Consultations
- Studies and research
- Testing, metrology, and analysis.

IRI, through its activities and operations, seeks to achieve the following goals:

- Conducting research and studies to enable the establishment of new industries
- Conducting research and studies on various materials and items to learn their properties and determine their uses and applications
- Offering specialist consultations on technological, administrative, and economic matters related to existing industry with the aim of industrial development and encouraging the creation of new industries
- Offering internationally accredited services in testing, analysis, and metrology related to materials and items, and issuing certificates of quality and conformity certificates
- Collaborating with national and international official bodies, and economic institutions and trade unions with the goal of fostering economic development.

IRI brings together a reliable body of experts, specialists, and engineers in many fields to carry out its activities, supported by another body of administrators, accountants, and clerks who undertake administrative tasks and other internal services.

Our Ethical Standards

In carrying out its functions, the Institute adheres to ethical and professional standards whereby it safeguards the clients' best interests. Furthermore, IRI regards as the client's property any information, processes, patent or techniques developed during work with the client and safeguards such matters in complete secrecy.



General PUBLIC Activities



Industrial Research Institute: Economy-building activities

Throughout 2022, the Industrial Research Institute and its management were involved in a rich array of activities at the economic, industrial and service levels for the benefit of the business, production, trade and tourism sectors, which reflected the role and tasks of the institute in Lebanon and the region.

The activities covered the following areas:

Talks between Lebanon and Iraq on Industry and a tour of the Industrial Research Institute

07/3/2022

The Minister of Industry, George Bouchikian, and the Iraqi Minister of Industry and Mineral Resources, Manhal Al-Khabbaz, held talks at the Ministry of Industry. The talks were attended by the Lebanese Ambassador to Iraq, Ali Al-Habhab, the Iraqi Ambassador to Lebanon, Haidar Al-Barrak, the Director General of the Ministry of Industry, Dany Gedeon, the Director-General of the Lebanese Standards Institution (LIBNOR), Eng. Lena Dergham, the Administrative and Financial Director at the Industrial Research Institute, Selim Kfoury, representing the Director General, Dr. Bassam Frenn, and the delegation accompanying Minister Al-Khabbaz.

Minister Bouchikian welcomed the minister and the accompanying delegation to Lebanon, “your second country, as you described it. We, the Lebanese, also consider Iraq our second country, this country that, despite the tragedies and wars it went through, remains steadfast and victorious, faces challenges, and continues to stand by Lebanon, opening fields and opportunities for the Lebanese, out of brotherhood, friendship, cordiality and historical relations between our two countries.”

He added, “Your visit today is very important in terms of timing and objectives. You come at a time of regional and international changes. We, Lebanon and Iraq, adhere to our principles, the real principles that unite our two countries and peoples. The Ministries of Industry in the two countries reached a very important memorandum of cooperation describing mechanisms for consolidating and developing industrial relations between our two countries. We are now in

the process of defining these mechanisms and speeding up their implementation, in terms of establishing the concept of complementary and reciprocal industries, training, exchanging experiences, mechanization and archiving, and opening prospects for partnership between businessmen in both countries.”

He concluded, “Determination for success and



progress exists on both sides, just as we have the blessing of the political authorities in both Lebanon and Iraq to move forward with relations without barriers. I would also like to convey good news to the Lebanese about the approval of the Iraqi authorities, as we were informed by His Excellency the Minister to grant the Lebanese an entry visa to Iraq for a period of six months, and discussions are ongoing to cancel visa requirements between the two countries.”

Al-Khabbaz

Minister Al-Khabbaz spoke of his pleasure to visit Lebanon, his “second country,” stressing that his country is committed to establishing the best relations with Lebanon, indicating the willingness to mutually benefit from the added value that each party can offer within the framework of

joint cooperation.

“We are moving in the right direction towards implementing the first steps of the memorandum of cooperation that we signed in Baghdad nearly two months ago.”

Industrial Research Institute

The two ministers, the two ambassadors, and the delegation, toured laboratories, departments, and research, development, and studies centers of the Industrial Research Institute at the invitation of its Director General, Dr. Bassam Frenn. After a welcome by Dr Frenn, he organized a tour for them, explaining that the institute was the first of its kind in the Arab world, being established in 1951. It includes 13 laboratories that conduct about five hundred European and internationally accredited test methods.

Dr Frenn highlighted the institute’s development through the network of relations associated with international and European institutes and laboratories, and that its activities went beyond the local scope to provide services for Arab, African and Asian countries.

He also noted that the Institute was among the first to equip its buildings with solar energy, and pointed to its centers for industrial modernization, innovation and technology, rationalization of energy use and reliance on alternative energies. These centers provide administrative, technical and financial services and consultations to



industrial institutions wishing to expand.

After the end of the tour, everyone moved to the meeting room, where a presentation was made of the activities of the various departments and directorates of the institute in the presence of the directors, heads of departments and officers.

Minister Bouchikian expressed his admiration for the Institute, commending Dr. Frenn for his good management and development of this institution, which is considered a pillar of the economy and industry in Lebanon.

In turn, the Iraqi minister praised efforts to ensure the success of the Institute and its excellence in its field of work, calling for cooperation between it and its affiliated institutions in Iraq.

The Institute’s interest in value-added industries: Wine is a promising sector

23/08/2022

The Director General of the Industrial Research Institute, Dr. Bassam Frenn, held a meeting with the Chairman of the Board of Directors of the National Institute of Vine and Wine, Mr. Zafer Al-Shawi, in the presence of members of the Board of Directors and officials of the Institute. After welcoming the attendees, Dr. Frenn highlighted that the idea of establishing the National Institute of Vine and Wine originated with the Industrial Research Institute, which contributed to the development of its organization and the legal texts for its establishment.

He pointed out that the wine sector needs support as wine is a Lebanese product that we are proud of and has a great future. We can build on this sector from the economic point of view, given that it is one of the strategic commodities for Lebanon. He expressed the institute’s intention to provide technical assistance.

Mr Chaoui introduced the National Institute of Vine and Wine, which brings together the public and private sectors. It includes representatives of

3 ministries: Agriculture, Industry, and Economy and Trade. He saluted the Industrial Research Institute in terms of both the technical and administrative aspects. He called for activating the relationship between the two institutes, especially with regard to the technical assistance to be provided by the Industrial Research Institute. Eng. Mariam Eid added that it is possible to cooperate with the Industrial Research Institute in technical matters, packaging, etc. or in organizing workshops with international organizations, and that the expertise of Dr. Bassam Frenn, if possible, will come handy to draw up a memorandum of understanding and form a committee in this framework.

The Applied Research and Testing director at the Industrial Research Institute, Dr. Joseph Matta, indicated that the Industrial Research Institute can help in three ways:

First: Tests. All required tests are available at the institute, and the duration needed does not exceed five days.

Second: applied research.

Third: Quality, so that international standards can



be applied without the manufacturer needing any tests to be carried out abroad.

He drew attention to the “Product Certification” conformity badge granted by the Institute to products subject to this program.

Dr. Frenn suggested establishing a joint badge between the two institutes, to be given to wineries affiliated with the Institute of Vine and Wine that meet the requirements of the badge program, so as to ensure the control of commodities as well as give confidence to the consumer.



The main objective is to protect this sector, hence benefiting from the experience of the Industrial Research Institute to apply the necessary standards.



The Industrial Research Institute is committed to facilitating laboratory tests in accordance with International Standards

24-08-2022

The Director General of the Industrial Research Institute, Dr. Bassam Frenn, participated in the meeting held by the Minister of Industry, Georges Bouchikian, with a number of spice manufacturers, in the presence of the Applied Research and Testing Director at the Institute, Dr. Joseph Matta. The aim of the meeting was to understand the state of this sector and explore ways that the Industrial Research Institute can play a role to incentivize export by facilitating laboratory tests according to national specifications that follow international standards such as ISO and Codex. This is necessary because of the presence of a good number of institutions operating in this sector, which are mostly small and medium-sized that have become developed, and meet a large

part of the local market needs, and are looking to exporting to markets in Europe, the Americas, as well as Arab and African countries.

Minister Bouchikian commended the industrialists on their work and encouraged them to continue expanding, placing the ministry's capabilities at their disposal, and expressed his readiness to remove technical and administrative barriers.

Dr. Frenn also spoke about the Institute's role in the growth of the national economy, its activity that did not stop during the most difficult stages, and the cooperation between it and the international and accreditation bodies to pursue the development of the Institute and maintain its readiness in research, studies and consultations, thanking Minister Bouchikian for his continuous support.



A memorandum of cooperation between the Ministries of Industry and Agriculture and the Institute for selecting IRI laboratories to conduct tests on imported and local products

24/10/2022

The Ministers of Industry, George Bouchikian and Agriculture, Dr. Abbas Hajj Hassan, and the Director General of the Industrial Research Institute, Dr. Bassam Frenn, signed a memorandum of understanding between the two ministries and the institute stipulating that the institute's laboratories be selected to carry out tests of imported and locally produced food products intended for local consumption or for export, according to the testing regulations, prices, deadlines for completion, and approved scientific standards for each sample.

Dr. Frenn

Dr. Frenn delivered a speech, "I welcome the two minister friends, Dr. Abbas Hajj Hassan and George Bouchikian, and the esteemed attendees at the Industrial Research Institute. This institute that has become a pillar for the national economy, and an advanced center for research, technology, studies, and consultations for industrialists, entrepreneurs, and businessmen. Likewise, its laboratories cover most of the tests, and they are now accredited by international and US reference institutions. We meet today to sign a memorandum of understanding between the Ministries of Agriculture and Industry and the

Industrial Research Institute, aiming to adopt the laboratories of the Institute to conduct laboratory tests on imported and exported food products, as a guarantee and a certificate issued by a national reference in the food safety system, the Industrial Research Institute. This advanced initiative comes out of the Institute's concern for public health and safety, in coordination with the Ministries of Industry and Agriculture. The Institute has continued its tireless work since 1998. We have never ceased activity when the private and public sectors stopped during the time of the COVID pandemic. My colleagues at the Institute also took great risks, in the past three years, when the regions were cut off from each other due to the protests, to reach their place of work, to serve the economy, the citizen, and society. History bears witness to the role of the Industrial Research Institute.

He added, "The Institute has overcome crises transcended challenges. It serves as an added value for economic growth, modernity, development



general public activities

and technology. To fill the political void, we may also be the medicine. Our innovators and laboratories may be able to devise the magic formula to contribute to building the Lebanon of tomorrow. I welcome everyone, and I hope that the implementation of the memorandum will contribute to strengthening the food safety structure and system based on national and international specifications and standards that guarantee safe food for citizens and consumers in Lebanon and abroad.”

Minister Bouchikian

Minister Bouchikian then spoke, “We come to the Industrial Research Institute, this national, economic, scientific and research edifice. I commend the efforts of the Director General, Dr. Bassam Frenn, and the employees of the Institute for their dedication to public service. Minister, in Lebanon, we need to build institutions on the foundations of modern administration and governance. I take the opportunity to thank all officials and employees in the Ministry of Industry, the Industrial Research Institute, and the Lebanese Standards Institution (LIBNOR) for their dedication to work and their positive and close cooperation, transforming weaknesses in resources into capabilities and strengths in giving. Cooperation between the Ministries of Industry and Agriculture, the Industrial Research Institute and LIBNOR is not new. It is based on full coordination in various common matters. Today we renew our cooperation by signing the Memorandum of Understanding in order to maintain a healthy, sound and integrated food health system. Thanks to the institute’s laboratories,



we are able to guarantee the desired results. The institute joined the European Laboratories Union And the laboratories in it have become accredited by accreditation bodies in France, Germany, etc. Today, with the beginning of the spread of cholera and the tremendous efforts made by our colleague Dr. Firas Al-Abyad to combat the epidemic and limit its spread, our focus on food production according to standards and specifications comes within the right framework, and contributes to preserving the reputation of Lebanese products, and their distribution in Lebanon and around the world. It is forbidden to manipulate standards and specifications, let alone in food production. It is a crime affecting entire societies. We at the Ministry are very strict in granting licenses until



owners fulfill the conditions required to obtain the license. The Ministry's teams also carry out periodic checks and, when needed, monitor, audit, follow-up, guide, warn, and give deadlines for correction before closing down facilities in the event of persistent defects. I salute the diligent industrial work that raises the name of Lebanon, especially the food industries. We want committed industrialists to succeed like the superior industrialists in their industries, which they have brought to many countries. Industry is one of the pillars of the productive economy. By updating, supporting and protecting it, it will be able to contribute to achieving the required growth, reducing the deficit in the trade balance, and securing job opportunities, sustainable development and balanced development. This is what we want to build: the Lebanon of tomorrow, the Lebanon of opportunities, the Lebanon of development."

Minister Hajj Hassan

The Minister of Agriculture in the caretaker government directed "Thanks first for the idea, second for hosting, and third for believing in partnership." He said, "We are in a country that has always believed in partnership, and what better partnership there is than partnership in scientific research that leads us to true citizenship that we all yearn to? So welcome to all of you, and allow me, Mr. Director, at the Industrial Research Institute – one of the pillars of this real industrial research that is being established in this country – and we hope that it will establish a real partnership between the Ministries of Industry and Agriculture."

He added, "I just came from a meeting of the Arab Organization for Agricultural Development, and the title was "Towards an Arab Partnership For Food Security." Is it possible that we in this country have not yet realized that partnership is our only lifeline? I belong to the school of Imam al-Sadr, the great man, the patriot with distinction, who was always calling for partnership."



"With regard to the Ministries of Agriculture and Industry, and today the signing of this agreement and the memorandum of understanding, how I hope it will be a beginning, so that after that there will be memorandums of understanding between all ministries! No doubt, we believe in the separation of powers, but with this separation, there is flexibility and harmony between these authorities so that we can attain a joint national action with regard to industry and agriculture or with regard to agriculture and economy or industry and trade, and thus complementary work in order to get out of this tunnel, this dark and indeed difficult tunnel. This is not impossible."

He concluded, "These laboratories, which we are in the process of partnering with today, exist and are rooted in the work of the Ministry of Agriculture, and we hope to expand more through networking between the public and private sectors." Adding, "I am very sad to say that the private sector today is miles ahead of us for many reasons, but we are the children of today and we want to establish sustainable work in the public sector that establishes a real partnership that builds internal trust and confidence with foreign countries, because as Minister of Agriculture I say that the main dilemma today is in trust, or the return of trust between us and the Arab world and the more distant world."



**Laboratory services,
observations &
activities**

The Industrial Research Institute overcomes turbulent situations

219847 test operations and 31498 conformity files

The abnormal and turbulent situation on many days of 2022 led to irregular activity in public administrations in the country, which was reflected great disruption at the level of the national economy, within the context of the ongoing Covid-19 pandemic, coupled with the appearance of a cholera epidemic in some areas and fears of its spread into the rest of the country, and the rise in fuel prices and the costs of production in relation to the purchasing power of citizens, due of the declining value of wages caused by the collapse in the value of the national currency relative to the US dollar.

However, the management of the Industrial Research Institute was able to maintain regular work schedules in all departments of the Institute, in order to meet the demands of the private and public sectors. Thus, the Institute continued its activity, despite the many obstacles arising from the general environment.

Once again, the management of the Industrial Research Institute confirmed its adherence to the goals of the Institute, which were set in 1998, the year Dr. Bassam Frenn took office. With the aim of elevating the Institute to the level of a scientific bulwark, Dr Frenn was successful not only in steering it away from the, at times, chaotic course of its surroundings affected by wars and economic turmoil that shattered development and progress, but also from the internal political tensions, the decline in economic activity, and the turmoil in the price of the national currency in the foreign exchange market. The Institute thus confirmed the extent of his commitment to work ethics and operational success, providing all sectors of the national economy, with scientific data that serve to strengthen their position at the levels of internal and external markets.

The Institute has proven to be the leading scientific institution, capable of putting its

scientific capabilities, laboratories and the capacity of its human workforce, not only in the service of the industrial sector, but also in the service of the public sector, saving money and achieving scientific support –with fast results – in the campaigns to monitor and inspect industrial, agricultural and health products, meeting the requests of the Ministries of Economy and Trade, Industry, Health, Agriculture, Environment, and National Defense, in addition to testing imported oil derivatives for the public sector, and monitoring new liquefied gas cylinders.

The tests, inspections and audits were distributed, in total, as follows:

- 219,847 tests and analysis operations in the field of conformity, conducted by the laboratories of the Industrial Research Institute during the year 2022, with an increase of 7,727 operations compared to 2021, a rate of about 4 percent.

In addition to these tests, there were 368 external inspections, in addition to inspections on 555,409 gas cylinders performed internally.

- The standardization and calibration tests amounted to 25,048 tests on 2,642 samples.
- In the field of conformity assessment to mandatory norms of merchandise entering through Lebanese border points, The Industrial Research Institute handled 24,491 files.

The Industrial Research Institute consolidates its capacity as a scientific institution that can accommodate the needs of the public administration and the private sector, and watch over them in order to complete scientific and technical tests in many fields, accurately and skillfully, in addition to preparing research and scientific studies in all economic fields.

Tests and analyzes

The tenacity of the Director of the Industrial Research Institute and its workforce – in the various departments –has led to a difference and an increase of 3.6 percent in the level of activity of the Institute’s various laboratories, compared to what it was in 2021. The activity in the Electricity Laboratory increased by 24.2 percent, and the tests conducted there represented 32 percent of the total tests. Although the activity in the Chemical Laboratories decreased by about 8.7 percent, their share of the total tests amounted to about 29 percent, followed by Civil Engineering

and Soil laboratories, with a share of about 18 percent of the tests. Microbiological tests represented 13 percent, followed by Petroleum and Paint Laboratories representing 4percent. The Central Laboratory for Cereal, Flour and Bread Research 3.5 percent, and the Textile and Leather laboratories 1 percent.

Tests were conducted on 34,906 samples of various types received.

The Welding Laboratory conducted 670 tests.

The activity of laboratories according to statistical tables was as follows:

Wet Chemistry and Physical Chemistry Laboratories

The number of tests in the Wet Chemistry and Physical Chemistry laboratories reached 63,750 tests, down by 6,090, or 8.7 percent, and represented about 29 percent of the overall laboratory activity.

Microbiology

The number of microbiological tests amounted to 27,750 tests, representing about 13 percent of the total tests.

Number of Tests by Laboratory

Year	2022	2021	2020	2019	2018	2017
Chemical and physico-chemical	63,750	69,840	74,270	81,500	80,600	67,870
Microbiological analyses	27,750	27,750	29,250	33,500	39,300	35,700
Textile, leather and rubber	2,250	2,850	3,430	5,900	6,750	7,100
Paint, Petroleum and derivatives	8,300	8,640	9,540	16,500	16,150	15,200
Civil Engineering	40,011	35,345	29,325	60,010	80,821	86,868
Electricity	70,182	56,500	28,092	118,484	122,841	124,633
Central Laboratory for grains, flour and bread research	7,604	11,194	13,853	13,879	21,678	14,742
Total	219,847	212,120	189,653	332,076	372,992	353,307
Welding	670	1,315	1,893	2,303	4,852	1,194

Textile, leather, and rubber laboratories

Testing and analysis in these laboratories, recorded 2,250 tests, representing about 1 percent, a decrease of approximately 21 percent, as the import of textiles and fabrics has largely stopped.

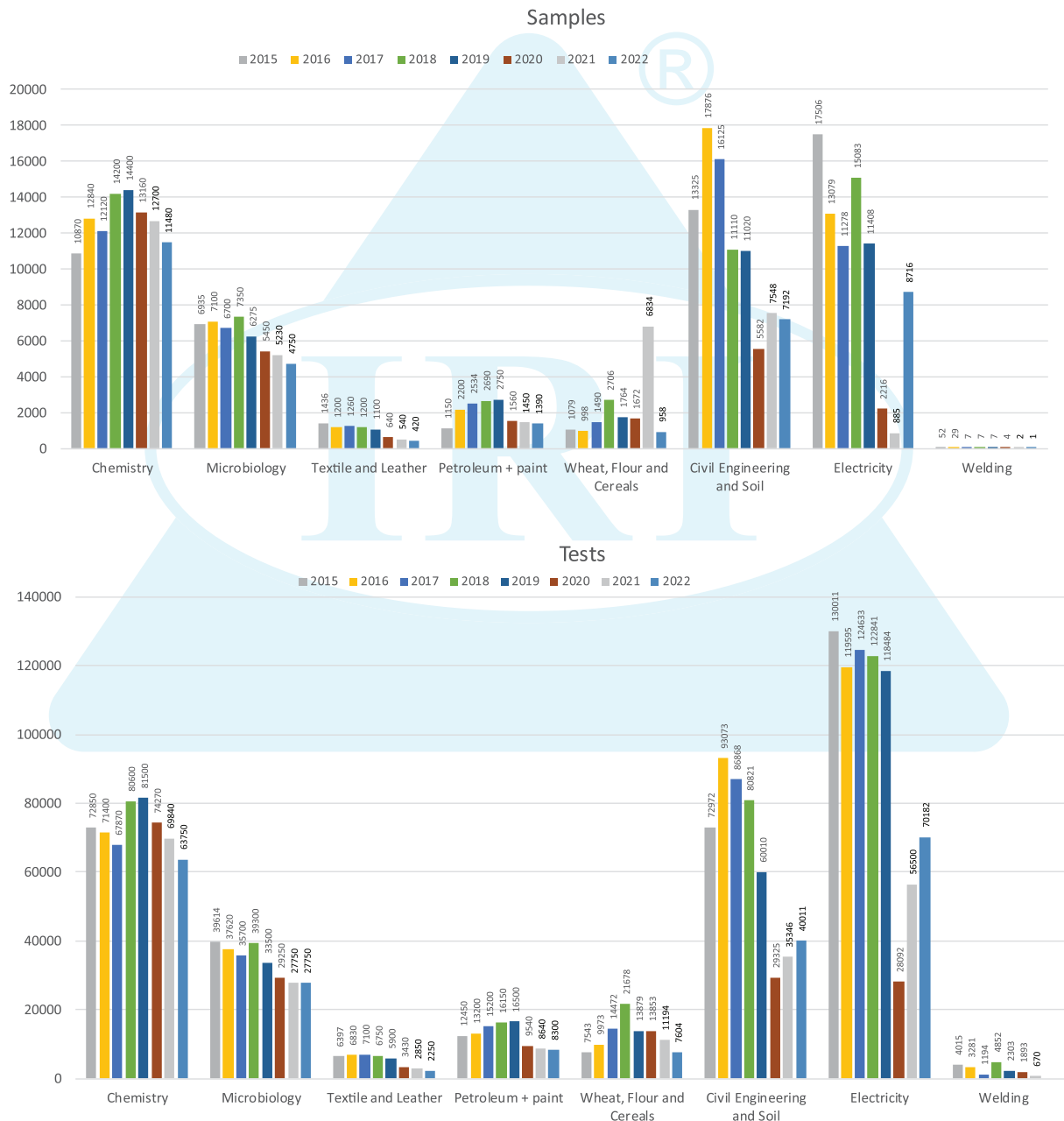
Petroleum and Petroleum derivatives

The activity of the Paint and Petroleum laboratories decreased by 340 tests, or 3.9

percent, and amounted to 8,300 tests, and their share of the total tests reached around 4 percent.

Civil Engineering laboratory

The activity of the Civil Engineering and Soil laboratories, increased by 13.2 percent and recorded 40,011 tests, compared to 35,346 tests in the previous year, with a share of 18 percent of the testing activity.



SAMPLES

Electricity laboratories

The activity in the Electricity laboratories has increased, reaching 70,182 tests, an increase of 13,682 tests, and their share is about 32 percent of total tests.

Central Laboratory for Research in Cereals, Flour and Bread

Due to the close cooperation between the Ministry of Economy and Trade and the Industrial Research Institute, the laboratory serves the Ministry of Economy and Trade in terms of its responsibility for carrying out laboratory tests for imported wheat. It also conducts all other testing for the majority of imported and locally manufactured products. The number of tests in the Central Laboratory for Cereals, Flour and Bread Research was down 3,590 tests, and reached 7,604 tests, representing around 3 percent of total tests.

The Lebanese Welding Center

As for welding operations, they amounted to 670.

Metrology and Calibration Laboratories

The activity of the various metrology laboratories increased during the year 2022, by 36 percent compared to 2021, and amounted to 25,048 tests, compared to 18,459 tests, in the previous year.

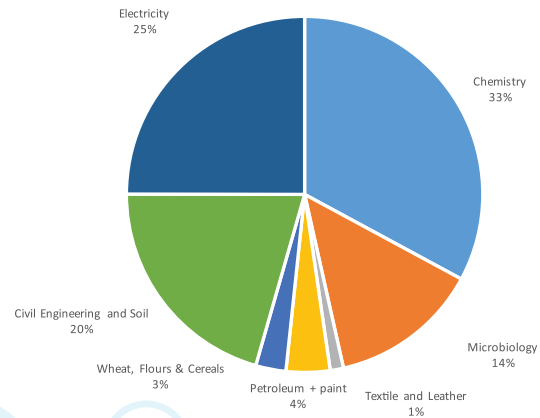
These laboratories received 2,642 measuring instruments.

These tests were distributed in the fields of temperature, pressure, force, mass, dimension and electricity.

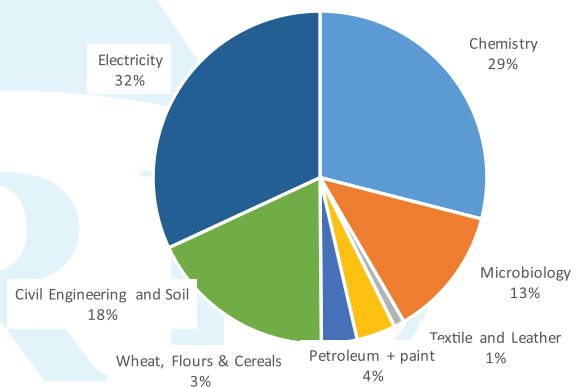
The development of the activity of these laboratories is as follows:

Temperature

The temperature laboratories received 617 instruments, 6,150 tests were conducted on them, with an increase of 1,794 tests representing 41.3 percent, and an average of 10 tests for each



TESTS



instrument, which is the same rate since 2010.

Pressure

64 pressure-measuring instruments were delivered for testing. These underwent 512 tests at the rate of 8 tests per instrument, which is the same usual rate.

Force

The force measurement laboratories received 5 instruments in order to measure their force. 40 tests were conducted, with an average of 8 tests per the device.

Mass

The number of mass units was 15,420, on which 1,599 tests were conducted, with an average of 9.6 tests per unit.

Dimensions

The number of units increased to 273 units and tests to 2,184, with an average of 8 tests per unit.

Electricity

As for the tests on equipment in the field of electricity, they increased in 2022 to 79

instruments and 632 tests, an average of 8 tests per device.

Miscellaneous tests

The number of miscellaneous tests amounted to 40 tests, on 3 instruments.

MEASUREMENT AND CALIBRATION

TOTAL ACTIVITY	2022		2021		2020		2019		2018		2017	
	Units	Tests	Units	Tests	Units	Tests	Units	Tests	Units	Tests	Units	Tests
Temperature	617	6,150	437	4,356	440	4,400	533	5,330	551	5,510	515	5,150
Pressure	64	512	25	200	29	232	18	144	70	560	96	768
Force	5	40	2	16	5	60	9	108	6	72	10	95
Mass	1,599	15,420	1,269	11,883	996	9,288	1,228	11,532	1,170	10,816	1,298	11,844
Dimensions	273	2,184	186	1,488	143	1,144	187	1,496	113	904	163	1,304
Electricity	79	632	39	380	51	408	38	304	52	416	29	232
Other tests	3	40	17	136	24	192	38	304	36	288	37	296
Total	2,642	25,048	1,975	18,459	1,688	15,724	2,051	19,218	1,998	18,766	2,148	19,689

EXTERNAL INSPECTION

ACTIVITY \ YEAR	2022	2021	2020	2019	2018	2017
Inspection of gas tanks	247	120	126	79	109	155
Inspection and calibration of oil containers	19	38	45	39	41	50
Inspection on steam boilers	102	121	137	161	188	99
Total	368	279	308	279	338	304
Inspection and monitoring of locally-produced gas cylinders	555,409	85,267	424,168	672,262	677,600	649,776
Inspection and monitoring of imported gas cylinders	0	0	0	0	14,784	5,000
Inspection and monitoring of exported gas cylinders	115,821	0	0	0	0	0

Conformity assessment activities increased to 31,498 files

Movement through points of entry improves 26 percent

Conformity assessment activities are related to the volume and financial values of Lebanese imports. Imports amounted to US\$17.8 billion in the first 11 months of 2022, an increase of around 44 percent relative to the same period of the previous year.

This increase was reflected in improved numbers of customs files subject to conformity assessment by the Industrial Research Institute, attaining 31,498 files compared to 25,040 files in 2021, an increase of 6,458 files, or 26 percent.

The assessment activity is distributed according to the types of imported goods as follows:

- Customs files for which conformity assessment was performed in the country of origin within the Institute's mechanism, 400 files.
- The number of files subject to conformity inspection reached 24,491 files, and the files not subject to the decreed mandatory specifications after the study, was 7,007 files
- The number of non-conforming files was 616, of which 555 were corrected, and 61 were rejected.

Customs files 2022

Types of files	Pre-shipment assessment	Chemistry	Photovoltaic systems	Electricity	Medical	Elevators	Mechanical	Energy	Paint	Pressure equipment	Civil engineering	Textiles	Transport vehicles	Mixed files	Grand Total
numbers	400	4,057	5,469	6,191	3,869	78	614	95	1,711	109	2,199	1,797	1,861	3,048	31,498
Subject files	400	2,909	5,100	4,097	3,499	42	293	94	381	52	2,160	1,428	1,676	2,360	24,491
Non-subject files	0	1,148	369	2,094	370	36	321	1	1,330	57	39	369	185	688	7,007
Percentage of non-subject files	0.00	28.30	6.75	33.82	9.56	46.15	52.28	1.05	77.73	52.29	1.77	20.53	9.94	22.57	22.52
Non-conforming files	0	65	14	422	4	0	0	0	11	1	87	12	0	0	616
Percentage of non-conforming files	0.00	2.23	0.27	10.30	0.11	0.00	0.00	0.00	2.89	1.92	4.03	0.84	0.00	0.00	2.52
Corrected files	0	25	13	411	0	0	0	0	8	0	87	11	0	0	555
Rejected files	0	40	1	11	4	0	0	0	3	1	0	1	0	0	61

The distribution of files according to the type of imported goods, by importance was as follows:

Chemicals

4,057 files, compared to 4,281 files in 2021, a decrease of 224 files, or 5 percent. These files constitute about 13 percent of the total

Photovoltaic systems

Files for photovoltaic systems amounted to 5,469, representing about 17 percent of the total number of files

Electrical appliances

Representing 20 percent of the total customs files, with 6,191 files, a decrease of 372 files and a rate of 6 percent.

Medical appliances

Constitute about 12 percent of the total files, amounting to 3,869 files, compared to 3,505 files in 2021, an increase of 364 files or 10 percent.

Construction materials files

Increased from 1,829 to 2,199 files, an increase of 370 files, representing about 20 percent. The

share of these files from the total is 7 percent.

Textile files

The number of customs files related to textile imports reached 1,797 files, compared to 1,863 files, a decline of 66 files, or 3.5 percent. The share of these goods amounts to 6 percent of the total customs files.

Paint files

1,711 files, representing 5.4 percent of the total files. Up from 1,671 files, with an increase of 40 files, or 2.4 percent.

Mixed files

3,048 files, compared to 2,906 files a year ago, an increase of 142 files, or about 5 percent. The share of these files is about 10 percent of the total customs files.

As for the remaining files, they are: machinery 1,861 files (6 percent), mechanical 614 files (2 percent), files approved in the country of origin, 400 (1.3 percent), energy 95, elevators 87 and pressure machines 109.

Files by gate

*In the port of Beirut, it accounted for 63.5 percent and in the Airport 25 percent
File assessment: increased in Masnaa by 118 percent and in Beirut port by 32%*

Beirut Port

20,001 files were handled, compared to 15,131 files in 2021, an increase of 4,870 files, or 32 percent. These files constitute 63.5 percent of the total.

Beirut Airport

The number of files that were subjected to a conformity assessment and received through Beirut Airport was 7,832, compared to 7,239 files, an increase of 593 files, or 8 percent. These files constituted about 29 percent of the total.

Port of Tripoli

In the port of Tripoli, the number of customs files assessed for conformity increased to 2,280 files, compared to 2,016 files, an increase of 264 files, or 13 percent. It constitutes 7% of the total

Al Masnaa

The Al Masnaa border crossing witnessed a boom in 2022 movement. There, conformity assessment was carried out for 1,363 files, compared to 625 files in 2021, with an increase of 738 files, or 118 percent, and the percentage of these files from the

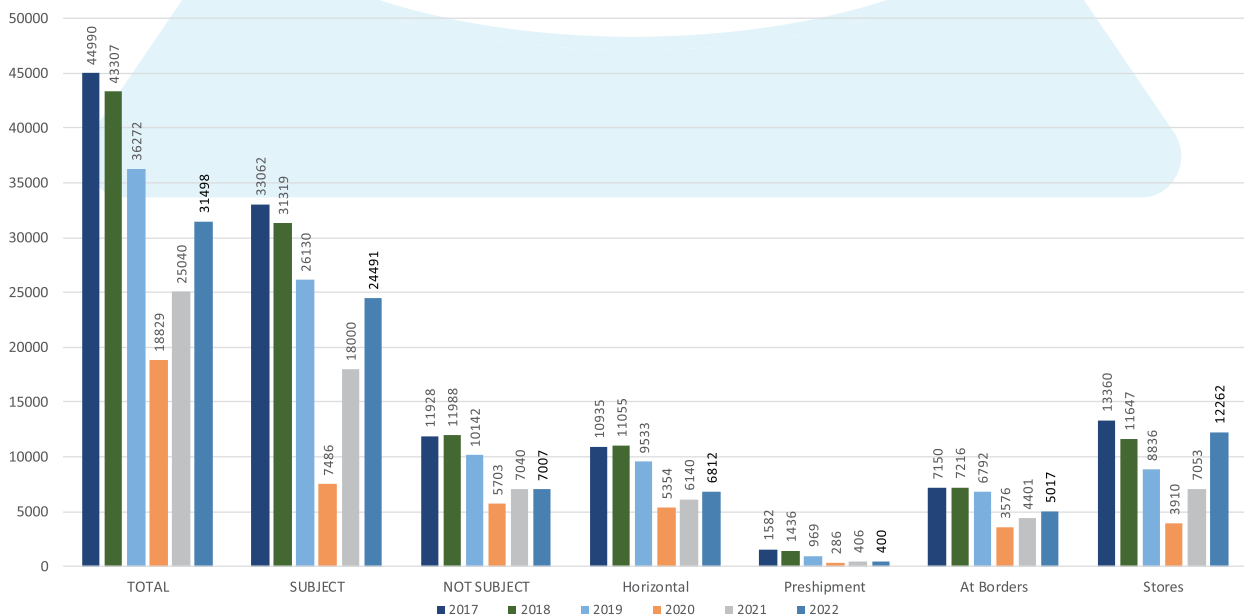
total amounted to 4.3 percent.

through Abboudieh, and one file at the port of Sidon.

As for the rest of the points of entry, the customs files processed and passing through were: 21 files

Files according to points of entry

Types of files	Pre-shipment assessment	Chemistry	Photovoltaic systems	Electricity	Medical	Elevators	Mechanical	Energy	Paint	Pressure equipment	Civil engineering	Textiles	Transport vehicles	Mixed files	Grand totals
Al Masnaa	0	30	658	158	1	0	55	4	152	0	3	189	20	93	1,363
Beirut port	400	2,458	3,940	3,753	659	60	503	78	1,338	88	2,051	1,265	1,207	2,201	20,001
Port of Sidon	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Tripoli Port	0	165	344	419	14	3	18	13	146	9	134	199	579	237	2,280
Beirut Airport	0	1,404	527	1,861	3,195	15	38	0	75	12	11	122	55	517	7,832
Abboudieh	0	0	0	0	0	0	0	0	0	0	0	21	0	0	21
Totals	400	4,057	5,469	6,191	3,869	78	614	95	1,711	109	2,199	1,797	1,861	3,048	31,498
Daily average of customs files	1.69	17.12	23.08	26.12	16.32	0.33	2.59	0.40	7.22	0.46	9.28	7.58	7.85	12.86	132.90



Accreditation certificates

The Industrial Research Institute continues to strengthen and support Lebanese industry. It has awarded until the end of 2022 21 industrial establishments the ISO 9001 quality management certification, two establishments the ISO 14001 certifications in environmental systems management, and three establishments the ISO 13485 certification for the quality system for medical devices, one HACCP certification, one ISO 22000 certification and one ISO 27001 certification

Product Certification

39 products have obtained quality certification

from the Industrial Research Institute, and they are distributed among 13 manufacturers

Certificates of the Lebanese Welding Center

In accordance with Law No. 423/2002, according to which “The Industrial Research Institute is considered the accreditation body, and authorized to issue certificates of conformity in all types of welding,” the Institute granted 299 certificates of competence in welding through the Lebanese Center for Welding. 15 trainees underwent welding training courses and one certificate was issued in the field of non-destructive testing (NDT) inspection. It was given to one trainee.



IRI



International accreditation

IRI in figures 1000 documents, 30 indicators, 43 auditors and 436 man-days of audit.

IRI conducts 2477 PT tests for 1300 parameters with a successful ratio of 97%

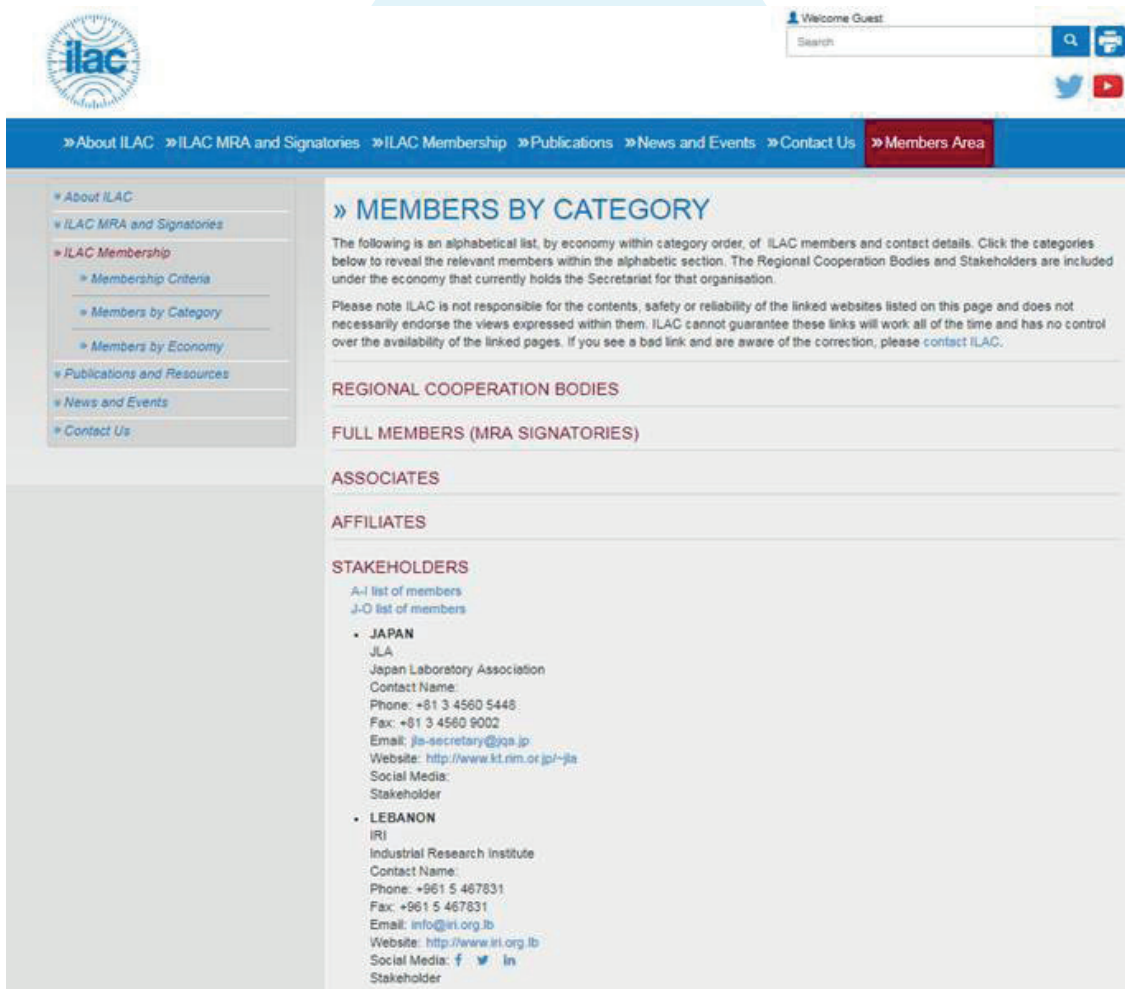
Quality management overview

The quality management section personnel, assisted by 43 trained auditors, keep and maintain a sound quality management system in accordance with ISO 17025 (testing and calibration) & ISO 17020 (inspection) requirements.

With 1000 controlled documents, 30 Key Performance Indicators continuously monitored and 436 man-days of audits and assessments

performed, the competence of IRI was recognized from the most rigorous accreditation bodies in the world (successively DAKKS and ANAB).

All of the accreditation organizations mentioned above are full members in the international organizations IAF and ILAC and signatories of mutual recognition. This make the institute's reports and results trustable and recognized all



The screenshot shows the ILAC website interface. At the top left is the ILAC logo. A navigation menu includes links for About ILAC, ILAC MRA and Signatories, ILAC Membership, Publications, News and Events, Contact Us, and Members Area. The main content area is titled 'MEMBERS BY CATEGORY' and includes a search bar and social media icons. Below the title, there is a disclaimer and a list of member categories: REGIONAL COOPERATION BODIES, FULL MEMBERS (MRA SIGNATORIES), ASSOCIATES, AFFILIATES, and STAKEHOLDERS. Under STAKEHOLDERS, there are links for 'A-I list of members' and 'J-O list of members'. Two stakeholders are listed: JAPAN (JLA) and LEBANON (IRI). The IRI entry provides contact information: Industrial Research Institute, Contact Name, Phone: +961 5 467831, Fax: +961 5 467831, Email: info@iri.org.lb, Website: http://www.iri.org.lb, and Social Media links for Facebook and LinkedIn.

international accreditation

over the world.

Also, the Industrial Research Institute is a stakeholder member in the international organization ILAC since 2014.

Moreover, IRI regularly participates in international proficiency testing rounds to validate its results. Until date, 2477 tests were done for 1300 parameters with a successful ratio of 97%.

This robust quality management system enabled the Industrial Research Institute to become accredited according to ISO 17025 (since 2004) & ISO 17020 (since 2017) requirements. This helped the Institute to be a key player in the National Quality Infrastructure and earn the confidence of the most prestigious national and

international organizations thus enhancing its network of partnership. Furthermore, the Institute is working towards achieving accreditation according to ISO 17065 (product certification) requirements.

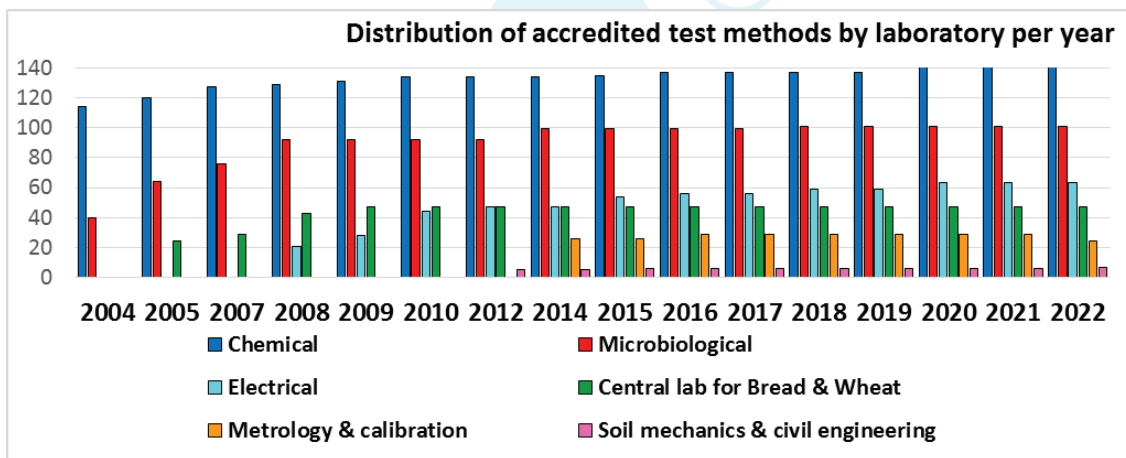
Details of the scopes of accreditations are available on the website: <http://iri.org.lb> in the accreditation section and on the ANAB accreditation body website: <http://anab.ansi.org>

The scope of accreditation according to ISO 17020 requirements covers the inspection of imported goods subject to National decrees, inspection of goods for export as well as inspections according to customers' specific requirements. It covers the following:

Methods and Procedures	Type and Range of Inspection	Items, Materials OR Products Inspected
Electrical Appliances Food Ceramic Tile Sanitary Wares Oil Cosmetic Glass Diapers Notebook Medical Items Solar Water Heaters Fire Extinguishers Gas Cylinders Boilers Tires Photovoltaic	Qualitative and /or Quantitative Inspection of New Products	Internal Procedures: PR/CFM/03 IT/CFM/04 IMP/CFM-e/01 to 04 IMP/CFM-h/01 to 32 IMP/CFM-s/02 & 03 IMP/CFM-n/01 to 03 IMP/CFM-r/01 to 07 IMP/CFM-v/01 IMP/CFM-d/01 to 03 Customer-Provided Inspection Requirements

The scope of accreditation according to ISO 17025 requirements covers over 384 test methods in different fields as detailed below:

- Chemical, physic-chemical and microbiological testing of food and animal feeding stuff, vegetable oils, water for human consumption & waste water, cosmetics, wet wipes & baby diapers,
- Electrical testing of household appliances, electrical products, luminaires, lamps, lead acid batteries, circuit breakers & energy meters,
- Physico-chemical and rheological testing of grain, flour, cereals, pulses, feed, milled products & by products in bulk and sacs,
- Mechanical calibration of conventional masses (class E2 & lower), balances (on-site & in permanent laboratories) and temperature.
- Physico-mechanical testing of cement and ceramic tiles.





CERTIFICATE OF ACCREDITATION

The ANSI National Accreditation Board

Hereby attests that

Industrial Research Institute
Lebanese University Campus, IRI Building,
Hadath (Baabda)
Beirut, Lebanon 11-2806

Fulfills the requirements of

ISO/IEC 17020:2012

In the field of

INSPECTION

This certificate is valid only when accompanied by a current scope of accreditation document.
The current scope of accreditation can be verified at www.anab.org.

R. Douglas Leonard Jr., VP, PILR SBU
Expiry Date: 29 August 2023
Certificate Number: AI-2499



An inspection body's fulfilment of the requirements of ISO/IEC 17020:2012 means the inspection body meets both the technical competence requirements and management system requirements that are necessary for it to consistently deliver technically valid inspection results (refer to joint ISO-ILAC-IAF Communiqué dated Sept 2013).



CERTIFICATE OF ACCREDITATION

The ANSI National Accreditation Board

Hereby attests that

Industrial Research Institute
Lebanese University campus, IRI Building,
Hadath (Baabda) Beirut, Lebanon 11-2806

Fulfills the requirements of

ISO/IEC 17025:2017

In the fields of

TESTING and CALIBRATION

This certificate is valid only when accompanied by a current scope of accreditation document.
The current scope of accreditation can be verified at www.anab.org.

R. Douglas Leonard Jr., VP, PILR SBU
Expiry Date: 29 August 2024
Certificate Number: ACT-1898



This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017.
This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory
quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).



Internal & External activities



The Industrial Research Institute maintains its successes and a high level of performance in the fields of control, research, development, and testing. It continuously sets basic and alternative plans to ensure that its services are not affected by political, security, and health challenges but keep pace with production, development, and commercial activities, as well as the import and export of goods.

The administration of the Institute is implementing a policy of expansion, cooperation and exchange with local and international agencies and institutions, believing in partnership between the public and the private sectors. The Industrial Research Institute performs its duties and role in helping the owners of institutions to persevere, develop, grow and increase the size of their business, thus maintaining their existence and safeguarding the jobs of their employees.

With regard to internal activities, the Institute is strengthening its structure and organization in cooperation and partnership with international institutions, with a view of keeping its officers fully equipped and ready to carry out their tasks professionally in service to citizens.

IRALEB launches Industrial-Academic Innovation Challenges

Prof. Joseph Matta represented the Director General of the Industrial Research Institute, Dr. Bassam Frenn, in a panel discussion on “Facts and Challenges of Joint Industrial-Academic Innovation” launched by the Caretaker Minister of Industry, George Bouchikian, at the Habtoor Hilton Hotel – SinEl Fil, in the presence of diplomats, members of parliament, industrialists and academics. It was implemented by IRALEB, the Industrial Research Achievements Association – Lebanon team. It was followed by the award ceremony for supporting creative university youth in joint research projects with industrialists, The LIRA Fund Award Ceremony 2022.



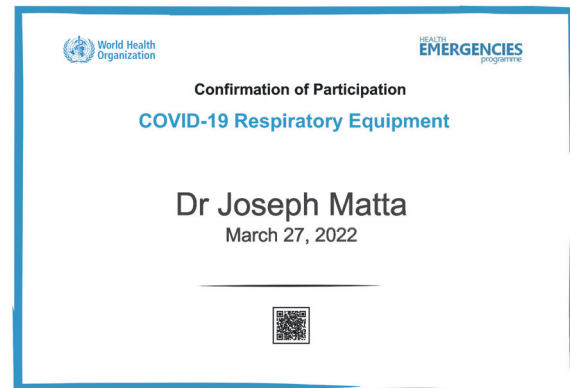
The poster is for the LIRA Fund Award Ceremony 2022. It features the logos of the Republic of Lebanon Ministry of Industry, Industrial Research Achievements-Lebanon (IRALEB), and the Konrad-Adenauer-Stiftung (KAS). The event is held under the patronage of H.E. Mr. Georges Bouchikian, Minister of Industry. The ceremony will take place on Wednesday, July 27th, 2022, at 06:00 p.m. at the Hilton Beirut Habtoor Grand Hotel. The event includes a presentation of a mapping report on "Academia Generated Industrial Innovation" and a pitch showcase for innovative youth industrial research projects. The poster also lists various industrial sectors such as Civil Engineering, Mechanical & Mechatronics, Agro-Food Industry, Materials & Nanotechnology, Electrical & Electronics, Information Technology, Packaging & Printing, Water & Energy Infrastructures, and Chemical & Pharmaceutical. The National Council for Scientific Research (CNRS) is also mentioned as a partner.



Coping with the Corona pandemic

In light of the strategic vision of the Industrial Research Institute regarding the valorization of health support, Professor Joseph Matta, Director of Applied Research and Testing, demonstrated

an important record of achievements in the context of the Coronavirus (Covid 19) pandemic, which was developed by the World Health Organization (Health Emergency Program).



ANAB Assessments

Despite the current situation, the Industrial Research Institute is still subject to the annual assessment necessary to maintain accreditation. This year it was done by the two inspectors, Mr. CK Cheung and Dr. Gouda Ramadan, from the American Accreditation Authority ANAB.

Several test methods have been added to the scope of accreditation of the institute (details of scope of accreditation are available on the website <http://iri.org.lb> within the accreditation section, and on the Authority's website <http://anab.ansi.org>)



Toumouhat:

Within the framework of the Institute's continuous activity to develop and modernize Lebanese industries, the Institute, in cooperation with the Ministry of Industry and the Tamouhat

Association, evaluated several industrial facilities specializing in foodstuffs against conditions that have been set, taking into account Good Manufacturing Practices (GMP)

internal activities

to maintain food safety and ensure its quality for the consumer. More than 20 establishments were evaluated, some of which showed good results, while in others a rectification program was developed to reduce certain risks that could affect food safety.



Training course for auditors of quality management systems:

The Industrial Research Institute, in partnership with the French Fréa Foundation, organized a training course for quality management system auditors: “IRCA Quality Auditor ISO 9001-2015.”

The training was conducted by Mr. Georges Abi Rashed, Director General of the French AB Certification Organization, and Dr. Imad Hajj Chehadeh, Director of Development and Technology at the Institute. This course was an opportunity to develop the Institute’s auditors in several specializations; Auditors from various institutions also attended the course.

APPROVED TRAINING PARTNER

IRI in collaboration with **FRÉA** invites you to

5 days Training

Become

IRCA QUALITY AUDITOR

ISO 9001:2015 Standard/
IRCA approved training

JULY
13, 14, 15,
21, 22
2022

LIMITED NR OF PLACES

- Acquire a modern and pragmatic approach to auditing, linked to risk assessment, while opening up new career prospects (e.g. "Quality Manager", "IRCA Quality Auditor").
- Pass the end of internship exam, one of the criteria for obtaining the IRCA ISO 9001 auditor card.

Get in touch: +961 (5) 467831 ext 226
Email: certification@iri.org.lb

Location: The Industrial Research Institute
Lebanese University Campus, Hadat, Baabda

* can be paid in LBP as per Sayrafa rate



Quality management of medical equipment and the impact of European requirements on auditing:

Within the framework of updating the performance of quality systems auditors specializing in auditing medical device industries according to the international standard ISO 13485-2016, amended in 2021 to become EN ISO 13485-2016 / A11-2021, covering medical devices entering

the territory of the European Union, the institute's auditors concerned with this standard participated in several training courses organized by AB Certification, the institute's partner in this field, to take the new requirements into consideration during auditing.

Training courses on photovoltaic solar energy

Five training courses have been successfully completed, as planned, at the Industrial Research Institute headquarters entitled "Training for Certified Solar PV Technicians" in collaboration with the Lebanese Center for Energy Conservation (LCEC). The courses covered the following topics:

The solar energy market in Lebanon, including legal and administrative requirements

- Welding basics
- Rust protection of frame



internal activities

- Frame installation
- Solar Energy components
- Solar Energy applications
- Design, sizing and installation considerations
- Safety considerations for solar energy applications
- Acceptance Tests (Earth resistance, verification of conformity, short circuit

current, insulation, voltage drop, performance Ratio, etc.)

- Monitoring and control
- Maintenance

The 57 trainees underwent tests and evaluations, and the successful ones were awarded a certificate as technicians in the field of photovoltaic energy. The trainees' satisfaction rate was 4.8/5

Beirut Energy Week 2022

The Beirut Energy Week was revived in 2022, and was organized by the Lebanese Center for Energy Conservation in partnership with the Lebanese Committee of the World Energy Council on November 28 and 29, 2022 in Beirut. It covered the most important issues in the field of sustainable energy in Lebanon and the region. The Industrial Research Institute had an effective role with the participation of specialized engineers

through panel discussions and a presentation by Eng. Bilal Hussein, Head of the Electrical Laboratory, on the energy activities at the Institute, monitoring and conformity assessment of goods related to photovoltaic energy, decrees on mandatory standards, educational training courses for technicians on how to install solar systems and their positive effects on the markets.



In 2022, the focus was on the world of novel industries and technologies, innovation and creativity, and contributions to pioneering and unique initiatives in the field of international health, as well as participating in regional and international conferences.

The First Regional Refrigeration Conference Under the Title “Seizing Opportunities in Sustainable Cooling”

In the context of its participation in the existing activities in the field of energy, seeking to “rationalize its consumption and reduce greenhouse gas emissions and their impact on the climate,” the Industrial Research Institute, represented by Eng. Ahmad Hassan, participated in the first regional refrigeration Conference “Seizing Opportunities in Sustainable Cooling,” in Istanbul on September 28 and 29, 2022. The conference included sections on plans for the transition to sustainable cooling and how to reach the required cooling efficiency while reducing energy consumption, mitigating greenhouse gas emissions, and replacing refrigerant gases with a high impact on global warming with environmentally friendly ones. Plans aimed at reducing the Earth’s temperature in the coming years were also discussed.





**applied research
& studies**

The Institute performed 7 environmental and technological studies and analyzes in 4 factories

The Industrial Research Institute keeps pace with the current status of industries and factories, especially the ones that received ISO environmental certification from the Institute, and ensures their continuous compliance with the scientific and technological standards required to maintain a healthy environment for human beings and preserve the nature.

The IRI completed 7 studies and analyzes in 4 factories, among which studies in environmental auditing and in environmental analyzes and technical field studies, as follows:

Comprehensive Environmental Analyzes and Technical Field Studies

- Cimenterie Nationale s.a.l.
- Glitt s.a.l.
- Advanced Plastic Industries s.a.l. (API)
- Holcim





**scientific
publications**

Because scientific research contributes to the progress and preservation of societies by ensuring a better life, the Industrial Research Institute contributed during the year 2022 to research the results which were published in international scientific publications, and which contributed to the advancement of science and knowledge. Professor Joseph MATTA, Director of Applied Research and Laboratories at the Industrial Research Institute has published scientific papers on health, nutritional and environmental issues.



The image shows the front cover of a journal article. At the top left is the ScienceDirect logo, and below it is the Elsevier logo. The journal title 'Process Safety and Environmental Protection' is centered, with 'Volume 168, December 2022, Pages 1031-1048' underneath. On the right side, there is a small thumbnail of the journal cover. The main title of the article is 'Olive oil liquid wastes–Characteristics and treatments: A literature review'. Below the title, the authors are listed: Layla Moustafa Fleyfel^a, Nathalie Karpel Vel Leitner^b, Marie Deborde^{b,c}, Joseph Matta^{a,d}, and Nasma Hamdi El Najjar^a. Each author name is followed by a small icon representing a different communication method (profile, email, etc.). Below the authors, their affiliations are listed with superscript letters a, b, c, and d. At the bottom, the article's reception dates are provided: Received 14 September 2022, Accepted 16 October 2022, Available online 20 October 2022, Version of Record 3 November 2022.

ResearchGate

Presentation

"L'application d'un modèle d'apprentissage automatique qui permettra d'évaluer la classification du taux sérique de PFAS à partir des variables sociodémographiques, anthropométriques, environnementales et nutritionnelles" aux "2èmes Assises de la Francophonie Scientifique sur l'Intelligence Artificielle – Atelier Sciences de la Santé et IA" - Agence Universitaire Francophone AUF, Egypte (Caire), 27-28 Octobre 2022

October 2022

Conference: « 2èmes Assises de la Francophonie Scientifique sur l'Intelligence Artificielle – Atelier Sciences de la Santé et IA », organisée par l'Agence Universitaire de la Francophonie AUF, en Egypte (Caire)

Project: [POPs in human milk: a biomonitoring study in Lebanon](#)

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


ELSEVIER

Environmental Research

Volume 216, Part 3, 1 January 2023, 114647



Serum levels of polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans in a sample of Lebanese pregnant women: The role of dietary, anthropometric, and environmental factors

Yara Mahfouz^a  , Mireille Harmouche-Karaki^a , Joseph Matta^{a, b} , Maya Mahfouz^a , Pascale Salameh^{c, d, e, f} , Hassan Younes^g , Khalil Helou^a , Ramzi Finan^{h, i, j} , Georges Abi-Tayeh^{i, j, k} , Mohamad Meslimani^l , Ghada Moussa^m , Nada Chahrourⁿ , Camille Osseiran^o , Farouk Skaiki^{p, q} , Jean-François Narbonne^r 

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^r University of Bordeaux, France

Received 10 August 2022, Revised 20 October 2022, Accepted 21 October 2022, Available online 28 October 2022, Version of Record 7 November 2022.



**Activities of the
European-Lebanese
Center for Industrial
Modernisation - ELCIM
and the activities of
the center for
innovation
& technology - cit**

ELCIM and Innovation

ELCIM has pursued the implementation of its programs in cooperation with local and European partners with the aim of assisting Small and Medium Enterprises and startups in developing their business in relation to technology, innovation, infrastructure, and especially the

increased dependence on renewable energy within the framework of an integrated plan of environmental conservation and cost reduction.

The following is a report on the progress of projects undertaken:

MAIA-TAQA

MAIA-TAQA is an ENI CBC MED co-funded project which aims to support a proper innovation process that would identify the needs, structure and commercialize creative solutions for resource efficiency services in consulting, engineering and operations. The main beneficiaries of this project are SMEs (especially from the environment/utility/building sectors) that can have a set of

supporting instruments to overcome the existing barriers and increase their innovation capabilities. Additionally, a main component of this project is to implement 3 pilots to serve as demonstrators in 3 partner countries in the field of renewable energy, energy efficiency and wastewater treatment and sanitation.

On February 10, 2022, MAIA-TAQA teamed up with its associate partners to discuss the progress and achievements of the Renewable Energyservices used in the pilot projects. This was followed on February 25, 2022 by the Contract signature with Watermaster for the construction of a waste water treatment plant for the MAIA-TAQA Lebanese partner the Industrial Research Institute. On April 19, 2022, MAIA-TAQA's Lebanese partner started the construction of the waste water treatment plant at the Industrial Research Institute Lebanon; and in July 21, 2022, MAIA-TAQA partners met in person for the first time at the Industrial Research Institute in Lebanon for a steering committee meeting where the different project activities were discussed. It was an opportunity to visit the Lebanese wastewater treatment pilot project.

MAIA-TAQA's team held several meetings during the year in order to:

- discuss the critical aspects of the vouchers call, as eligible criteria, selection criteria and services to be covered by the vouchers call.
- support the implementation of the project



ELCIM - CIT

- foster RenewableEnergy actions within the project
- boost the Resource EfficiencySolutions training programs in the pilot countries (Egypt, Lebanon, Jordan)
- review and assess the progress of the project.



Furthermore, a number of workshops were held under the auspices of the Euro-Lebanese Center for Industrial Modernization ELCIM on Resource-Efficiency Solutions on Water and Wastewater Treatment

September 28, 2022 marked the launching of the “Innovation One-Stop-Shop (IOSS)” office of the MAIA-TAQA project in Lebanon, managed by The Euro-Lebanese Centre for Industrial Modernization at the Industrial Research Institute Lebanon.

Additionally, on November 10, 2022, an Innovation voucher callwas launchedto support 3 SME’s in the field of renewable energy, energy efficiency and wastewater treatment. Ameeting was heldwith the selected SME’s in order to assess their needs and link them to the adequate knowledge providers.

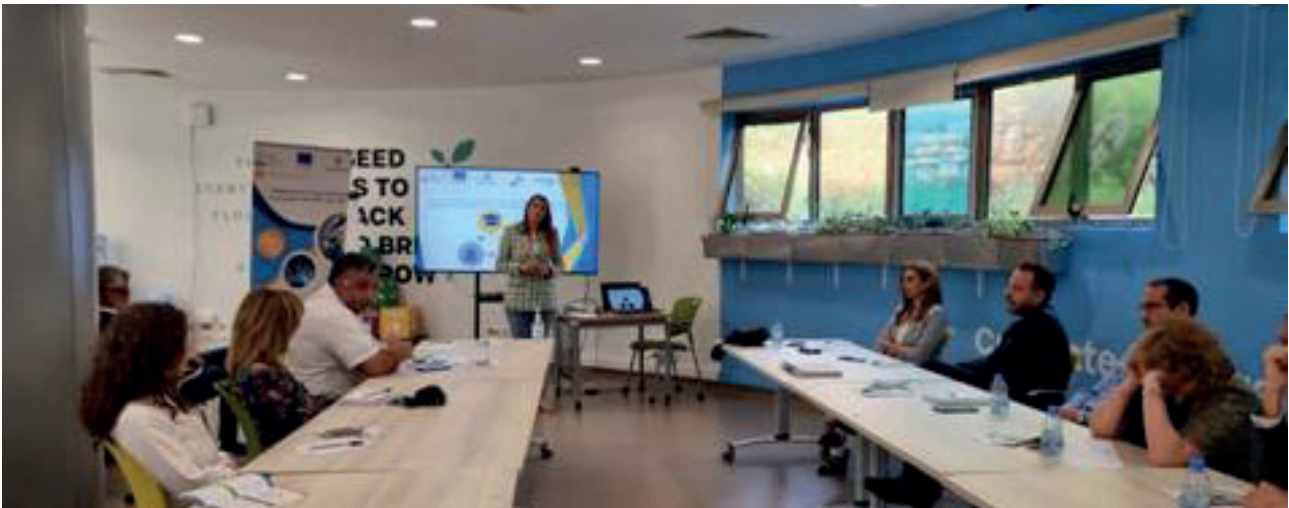
TRANSDAIRY

ELCIM at IRI and Berytech are implementing partners in Lebanon for the TRANSDAIRY Project (‘Transborder Key Enabling Technologies and Living Labs for the Dairy Value Chain’) funded by the European Union under the ENI CBC Med Program. The partners will establish living labs in the ICT and Bio Nano technologies, scout for innovations, and manage grant vouchers to support innovators in the creation of spin-offs in the Dairy Value Chain.

Jean Claude Assaf and Dr Joseph Matta are two Dairy researchers who were selected by Berytech, ELCIM/IRI Lebanese partner in Lebanon, to demonstrate the research results of their key-

enabling technologies in the Dairy Value Chain under the Transdairy ENI CBC Med Programme.





Many workshops and seminars were held for entrepreneurship training throughout the year

ELCIM and Berytech held a series of Focus Groups in the Transdairy Living Lab.

The focus groups aimed at bringing together experts, entrepreneurs, researchers, public

authorities, and industrialists in the field of the Dairy Value Chain to discuss existing as well as potential partnerships among these stakeholders, and explore ways to integrate ICT technologies to foster innovation and develop the Dairy Value Chain in Lebanon.

On December 15, 2022, ELCIM team and Lebanese SMEs supported by ELCIM under the TRANSDAIRY Project participated in the cross-border brokerage event in Tunisia: Boosting innovation and transfer of technologies to the Dairy Value Chain sector. The Brokerage Event has provided unique opportunities for Living Labs innovators to establish future collaborations and partnerships and progress a step closer to their dreams via developing two clusters for co-publications.



EMPHASIS

Set in the framework of ENI CBC Med Program, EMPHASIS Capitalisation Project's main goal is to facilitate the market uptake of innovations from SMEs by fostering their access to research, partnerships and innovation systems at the Euro Mediterranean Region.

Specific objectives include:

- Designing and setting up an Open Innovation (OI) system that offers integrated innovation support services.
- Validating OI opportunities and increasing the capacities of SMEs to innovate.
- Fostering cross-border partnerships and boosting engagement among innovation partners to turn external knowledge and sustainability challenges into tangible business opportunities for growth.
- Engaging policy makers and stakeholders to build a vibrant community of OI actors.

The first Open Day Event and Focus Group Meeting for EMPHASIS Lebanon was held on April 26, 2022

In May, ELCIM launched under the EU co funded ENI CBC Med Programme Emphasis Project an open call to select 4 SMEs, startups, spin-offs to receive free-of charge open innovation support services throughout a 7-month period. The beneficiary companies were revealed in November, based on the assessment of their 'readiness' to engage with open Innovation (OI) ecosystem and provide them advisory services.





**Activities of
the Lebanese Cleaner
Production Center -
LCPC**

The Lebanese Cleaner Production Center has pursued its activities with multiple goals, namely, to protect the national industry, achieve a cleaner environment, promote sustainable development, and assist in reducing production costs and the foster the preservation of natural resources, especially water. It went on with its training courses for managers and experts in the production sectors to refine their skills and upgrade their qualifications with the aim of improving the performance of their companies

Lebanese Resource Efficient and Cleaner Production

Cleaner production (CP) is a preventative approach to manage the environmental impacts of business processes and products. CP uses changes in technology, processes, resources or practices to reduce waste, environmental and health risks; minimise environmental damage; use energy and resources more efficiently; increase business profitability and competitiveness; and increase the efficiency of production processes. Cleaner production is applicable to all businesses, regardless of size or type.

Cleaner production is an ongoing process that can be applied to production processes; products;

or services; or it can be extend to cover the entire lifecycle of a product or service. Some cleaner production techniques include:

- Changes in technology.
- Changes in input materials.
- Changes in operating practices.
- Changes in product design.
- Changes in waste use.
- Changes in maintenance.
- Changes in packaging.

LCPC Participations:

Energy strategies summit at MEA conference center.

The Energy Strategies Summit - a knowledge and exchange platform bringing together some of the industry's most brilliant minds to share what is new and next in Lebanon



Arab Economic Forum Conference

This forum addressed the prospects for the Lebanese economy after the agreement on the demarcation of the Lebanese maritime borders, and what could result from it in providing the appropriate environment for the exploration, extraction, and marketing of oil and gas and attracting the investments required to develop this sector and the supply chains associated with it



Increase in Reduction & Recovery of Expired food an innovative sustainable business model:

This conference discussed financing measures to reduce food waste through waste-to-energy valorization. Recommendations on food waste

produced by the food industry, farms, large-scale distribution, the catering industry (hotels, restaurants, bars, HORECA), and consumers.

Online Conferences/Meetings

UK research & Innovation

The 2050 Vision: Sustainable materials for the construction sector

Practical discussions and solutions to some of the biggest challenges within construction.

Rethinking how to design and use materials to lower carbon emissions of construction.

West Asia Future Lab for Innovation and Policy”

Under the umbrella of the West Asia Sustainable Fashion Academy (WASFA) and as a follow-up to the workshop “Eco Innovation & Sustainable Textiles”.

The Lab aimed at bringing together policy makers, intermediaries and SMEs to co-create and develop future-proof solutions for challenges in the textile and fashion sector. Five action areas were in the focus: Innovation, Non-Financial

Support, Finance, Policy and Market.

The insights from the discussion provided concrete action items on how to better support green SMEs that apply circular technologies.

LCPC – Activities & Achievements (2022)





**IRI cooperation
with
the public sector**

Relation with the public sector

The Institute acts on behalf of the Lebanese government and is authorized by it, to approve negotiations, sign agreements for mutual recognition of certificates of conformity in the trade exchange 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, IRI has been the only internationally accredited body in Lebanon, 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.

Parliament

IRI regularly accepts the invitations of parliamentary committees in the Lebanese parliament, and attends meetings held by them. IRI offers its technical and scientific expertise related to the Institute's scope of work to these committees during the drafting and discussion of bills.

IRI actively participated in the drafting and discussion of the bill on technical regulations and pertinent procedures for conformity assessment, in all stages of the process, with the subcommittee of the joint parliamentary committees, until the bill was approved by this committee at the end of September, 2011. IRI participated in the drafting of the bill regulating drinking water processing, treatment and packaging, with the Committee on Public Health, Labor and Social Affairs.

The bill aims to limit the unregulated and exploding number of drinking water distribution

companies in Lebanon, as a result of the growing need of the citizens for water that is otherwise unavailable through public drinking water grids. The bill seeks to subject most unlicensed bottling companies to the laws and regulations in force, in order to ensure the safety of water, that it is uncontaminated, and that it complies with the required specifications to preserve public health. IRI also participated in the activities of the Public Works and Energy Committee in several areas, including:

- Following up the process of replacing domestic gas bottles, especially the control of the production and exportation of gas bottles before they are used in local markets.
- Providing the necessary expertise and technical analysis related to fuels allowed in private cars.
- Offering opinion and technical analysis related to bills concerning public safety in the use of fuel tanks, with a view to prevent explosion.
- Expressing an opinion about the draft food safety law.
- Expressing an opinion about the draft law on electronic transactions and data of a personal nature

Ministry of Industry

IRI is considered to be the quintessential technical arm of the Lebanese Ministry of Industry, especially as IRI is a subsidiary body of the ministry, and that its Board of Directors is headed by his Excellency the Minister of Industry. 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 licenses, pursuant to decree No. 8018 dated 20/6/2002, which assigned the required role for IRI in this regard, and is still working in parallel with the ministry whenever it is required to do so.

Ministry of Agriculture

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

Ministry of Economy and Trade

Since its inception, 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 IRI for laboratory testing and issuance of the necessary reports, across various sectors. IRI comprises 14 accredited laboratories covering 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 Sugar beets 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).

Ministry of Public Health

IRI laboratories 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 license 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.

The ongoing regulatory campaign launched by the Ministry of Public Health during 2014, required a continuous coordination with the Ministry which was and still sending a large number of samples daily so that the IRI conduct necessary tests and provide technical advice.

In its laboratories, the Institute conducted analysis and tests for thousands of samples brought by the Ministry of Health monitors, and results were given within the required time period, sometimes immediately. The Institute was not surprised by the unprecedented quantity and quality of samples brought by the Ministry of Health monitors.

Ministry of National Defense

The cooperation with the Lebanese army, including its various interests and divisions, has been firmly established since IRI's inception. 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. IRI also holds training courses on welding works, solar energy and other scientific topics which IRI proudly provides to

this institution.

Ministry of Interior and Municipalities

The Textile, Leather and Rubber Laboratory at IRI is continuously cooperating with the security 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.

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

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. IRI also inspects gasoline tanks in petrol stations, whether for licensing purposes or for maintenance when requested.

In addition, IRI inspects the nominal load of fuel tankers, in addition to other inspections that are conducted at the behest of the ministry.

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 IRI's fields of expertise.

Ministry of Environment

IRI continually cooperates with the requests of the Ministry of Environment, whether by analyzing 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.

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 IRI for technical advice, as IRI is the reference point for these authorities in what pertains to scientific issues.

Ministry of Foreign Affairs and Emigrants

Within the framework of cooperation and coordination among organizations involved in supporting Lebanon's exports abroad, the Financial and Administrative Director, Mr. Selim Kfoury, and the Applied Research and Testing Director, Dr. Joseph Matta represented the Industrial Research Institute in the meetings held virtually, organized by the Ministry of Foreign Affairs and Emigrants with concerned ministries and agencies and economic attachés in certain countries, and representatives of these countries including, Jordan, the United Arab Emirates, Canada, the European Union and others in an effort to overcome barriers and increase the volume of our exports to these countries.

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 IRI for analysis and for identification of their components, prior to clearing them for entry into the local markets.

Lebanese Standards Institution (LIBNOR)

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 IRI, which incubated its operations until it was reactivated in 1998. Since then, IRI published approximately one thousand national standards for the institution, as per annual contracts that were in force from 1998 until 2004. IRI is currently represented in the institution's Board of Directors, while 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, IRI realized that the infrastructure of a world-class quality process must include the following items:

- Bodies for conformity assessment that implement these specifications. This role is primarily assumed by IRI in Lebanon, not only in the application of national

standards, but also in the application of international standards in export operations as IRI is internationally accredited according to ISO Certificates No. 17020 and 17025.

- 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.

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

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 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. 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.



**IRI relations
with The
private sector**

IRI's relations with the private sector

Industrialists

IRI allots great importance to industrialists and industry in Lebanon. Thirteen years ago, 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 IRI. The services provided by 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 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 IRI is internationally accredited pursuant to ISO certificates No. 17020 and 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 IRI.

Therefore, industrialists head to 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 IRI and a specific mechanism at the latter; this would enable the factory to obtain IRI's conformity mark for its products, in an ongoing and continuous manner. 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.

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 IRI prior to allowing these goods into domestic consumer markets.

Hence, the relation between the importers and merchants on one hand, and 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 IRI to request tests and analyses of their merchandise and products, in order to determine their conformity

iri relations with the private sector

with international standards in the case of export, or national standards in case of import, prior to shipping it from the country of origin.

Farmers

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

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.

Researchers and scientists

Many researchers and scientists head to 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 IRI's capabilities in this area. This is not to mention the fact that IRI houses 14 laboratories spanning many complementary disciplines, in addition to the meteorology laboratory, the Lebanese Welding Centre, the Euro-Lebanese Centre for Industrial Modernization, the Lebanese Cleaner Production Centre, and the Centre for Innovation & Technology.

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.

Direct relationship

Any citizen can go in person to 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.

Indirect relationship

Consumer protection associations and other civil organizations often head to IRI and request analyses and tests of an environmental or health safety nature. Cooperation with these organizations is done on a continuous basis by 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 IRI to support and encourage these groups to work for the public good.



Development of human resources

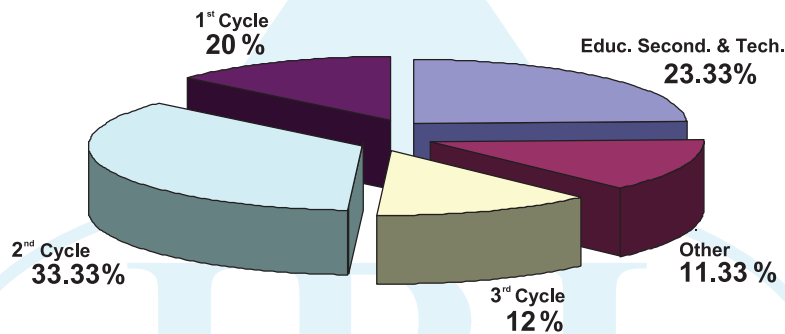
DEVELOPMENT OF HUMAN RESOURCES

The number of IRI staff members amounted to 150 at the end of 2022; 66% are males, while 34% are females.

The average age is around 39 years.

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

- 18 hold a 3rd Cycle
- 50 hold a 2nd Cycle
- 30 hold a 1st Cycle
- 35 are in their secondary and technical studies
- 17 are in other categories.



Elementary Levels	No.	%
3 rd Cycle	18	12
2 nd Cycle	50	33.33
1 st Cycle	30	20
Secondary Education & Tech	35	23.33
Other *	17	11.33

Average Age	Gender	
39 Years	66% Male	34% Female

(*) other excluded

Average Age	Gender	
39 Years	65% Male	35% Female



**On-going
employee training**

International Training, Seminars & Workshops

#	Participant	Organizer	Object/Title	Date
1	Ahmad Hassan	The Cool Up programme - LCEC	Cool Up regional conference	28-29/09/2022

MISSIONS (Trainers, Experts & Speakers)

#	Participant	Organizer	Object/Title	Date
1	Antoine Fayçal	IRI - CFM Directorate	Training CFM study	09,14/03/2022
2	Bilal Hussein Mohamad Assaad El Hajjar Ahmad Hassan Fady Melhem	IRI - LCEC	Certified Training for Solar PV Technicians	17-18/08/2022 31/08-01/09/2022 14-15/09/2022 05-06/10/2022 02-03/11/2022
3	Bilal Hussein Mohamad Assaad El Hajjar Ahmad Hassan	LCEC	Beirut Energy Week	28/11/2022 28-29/11/2022 29/11/2022
4	Joseph Matta	Executive Magazine & Germany's Konrad Adenauer Stiftung in the Middle East & North Africa (KAS-REMENA)	Food Security and Food Interdependence	05/12/2022

Local Training, Seminars & Workshops

#	Participant	Organizer	Object/Title	Date
1	Dany Tahchy	IMEKO (International Measurement Confederation)	TIC talks	01/03/2022
2	Thomas Sabbagh Jihad Hajj Shehadeh	Institut des Finances Basil Fuleihan And the Public Purchasing Reform in Lebanon	Introduction to the Public Purchasing Law no. 244/2021	08, 10, 15, 17/03/2022
3	Mohamad Assaad El Hajjar	LCEC	Cool-up - Policy Working Group Kickoff meeting	17/03/2022
4	Petra Youssef	Bakalian Bakelab	Sourdough Science Course	17-18/03/2022
5	Robert Haddad	SHAMCI	8th Annual meeting (SHAMCI/ RECREE project)	23-24/03/2022
6	Halim El Bayeh	AIDSMO	Voluntary Third-Party Assurance (vTPA)	24/03/2022

#	Participant	Organizer	Object/Title	Date
7	Amine Jbeily	Ministry of Economy and Trade	Facilitated Loan Project offered by the World Bank to implement the emergency response plan for the provision of wheat supplies	09/06/2022
8	Elie Melky Marc Cherfan	Ministry of Environment & The Lebanon Environmental Pollution Abatement Project (LEPAP)	Implementation of Decision 16/1 dated 10 February 2022 on Updated Air Emissions Limit Values	10/06/2022
9	Imad Hage Chehadeh Dany Tahchy Hovig Kouyoumdjian	AB Certification - Fréa	Management de la qualité approche Applicative de la réglementation en audit de certification	25-27/07/2022
10	Joseph Matta	Fair Trade Lebanon	The Lebanese report on Agri-Food exports	26/07/2022
11	Mohamad Assaad El Hajjar Fady Melhem	LCEC - Banque de l'Habitat	The Process for Granting Solar Energy loans by Banque de l'Habitat	28/07/2022
12	Halim El Bayeh	UNDP - Ministry of Agriculture	Launch of Food Safety Regulations Portal of Ministry of Agriculture	08/11/2022
13	Raymonde Khazzaka Elias Bechara	The Stockholm Convention Regional Centre in Spain (MedWaves), UNEP/MAP & the Ministry of Environment of Lebanon	MedProgramme - Child Project 1.1	15/11/2022

LIBNOR

#	Participant	TC Number	Standard Title	Date
1	Mohamad Zeaiter	TC 2132 Aluminium	EN573-1:2004 - EN573-2,3,5 - EN485-1/2/3/4 - EN755-1/2/3/4/5/6/7/8/9 - EN1090-1,3 - EN515 - EN1706 - EN12365-1/2/3/4 - ISO4026 - ISO4028 - ISO4023	18/05/2021 02/03/2022
2	Mark Tahchy Dany Frenn	NL TC 2207 Furniture	EN15706 - CEN/TR 15709 - EN15939	01/02/2022
3	Ahmad Habli	TC 22 Road Vehicle	ISO3780:2009 - Cor:2010 - ISO17840-1-2-3-4	05/04/2022 02/02/2022

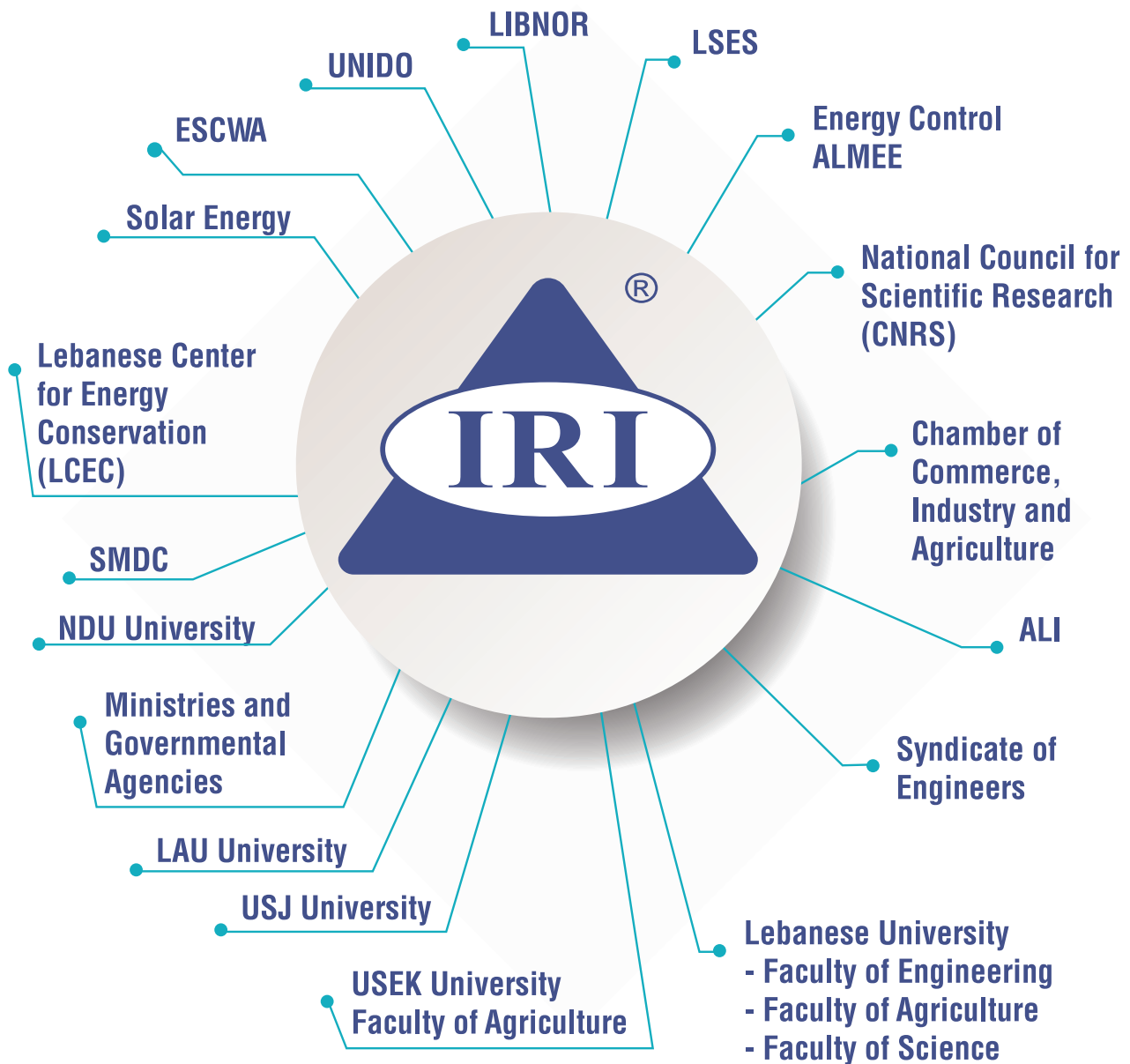
IRI Seminars / Conferences

#	Participant	Organizer	Object/Title	Date
1	Aline Jreijiry Jean-Pierre Samia Youssef El Hayek Dany Tahchy Danielle Gemayel Gilbert Fadel Mark Tahchy Marianne Checric Imad Kahil Jihad Hajj Shehadeh Hoda Wehbé Zainab Saleh Mohamad Rizk Michael Abi Fadel Mirna Chehab Achraf Arabi Ali Ayoub Mohamad Assaad El Hajjar Youssef Andraos Nader Aoudé Layal Yatim Marc Cherfan	IRI - CFM Directorate	Training CFM study	09/03/2022 14/03/2022
2	Thomas Homsy	IRI - Electrical Lab	Protection against access to live parts	23/03/2022
3	Ahmad Wehbe	IRI - Electrical Lab	Electricity meter performance test	24/03/2022
4	Elie Dawaliby	IRI - Electrical Lab	CFL test according to IT/ELC/37	20/04/2022
5	Thomas Homsy	IRI - Electrical Lab	Tripping characteristic test for circuit breakers	21/04/2022
6	Thomas Homsy	IRI - Electrical Lab	Perform the Glow Wire test	12/07/2022
7	Elie Dawaliby	IRI - Electrical Lab	Perform Lead acid batteries test	22/09/2022
8	Elie Dawaliby	IRI - LCEC	Certified Training for Solar PV Technicians	02-03/11/2022

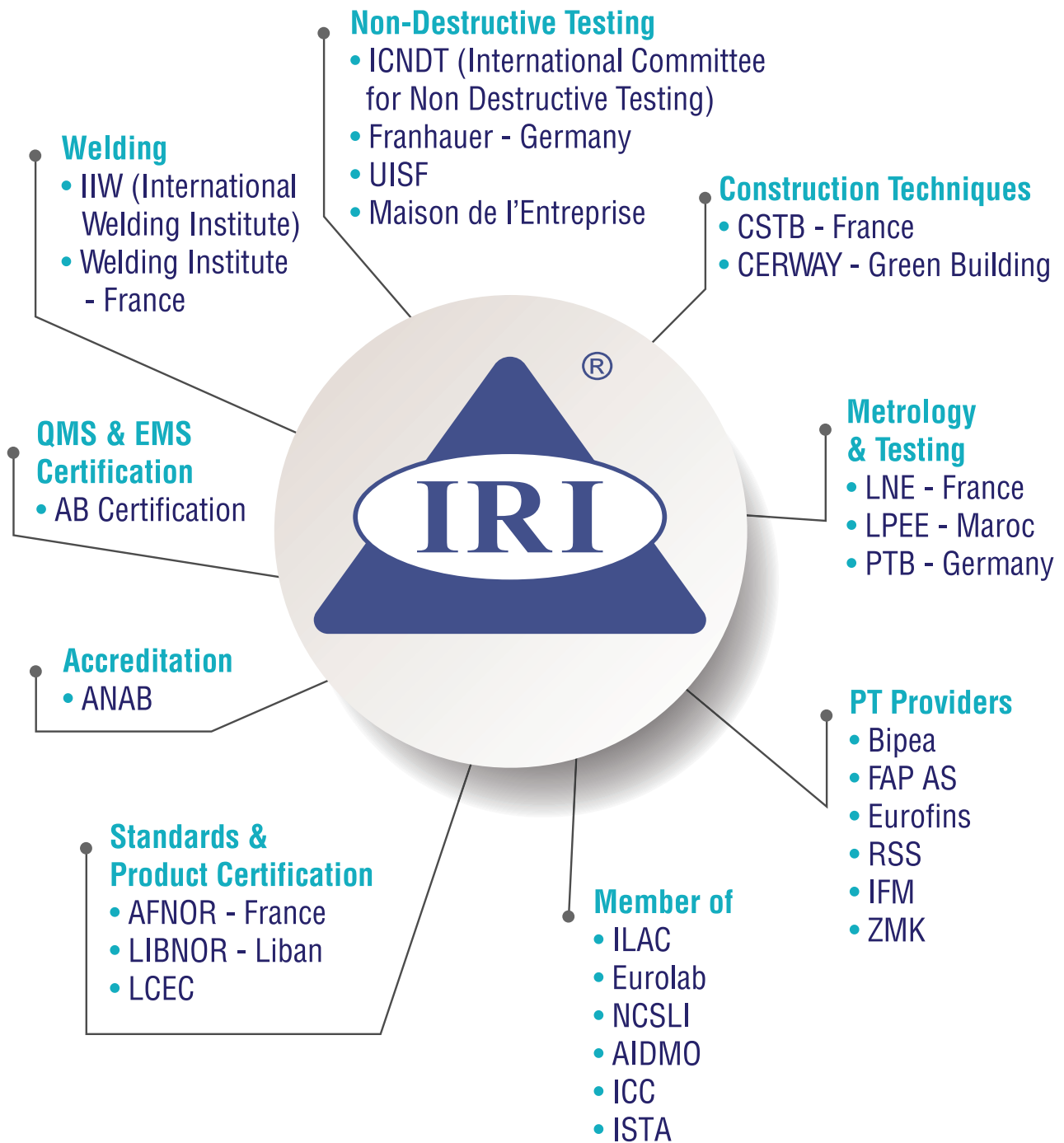


**International
and local
partnerships**

LOCAL PARTNERS



INTERNATIONAL PARTNERS





**Decrees, laws
and decisions**

LAWS

Law		Official Gazette		Subject	Party
No.	Date	Issue	Date		
253	13/01/2022	2	13/01/2022	Establishing the National Drug Agency	Parliament
287	12/04/2022	17	14/04/2022	Supporting locally produced pharmaceutical industry	Parliament

DECREES

Decree		Official Gazette		Subject	Party
No.	Date	Issue	Date		
82/1	23/12/2021	2	13/01/2022	Standards and technical regulations to be followed by the dairy industry	Ministry of Industry
83/1	23/12/2021	2	13/01/2022	Requirement to hire or contract a veterinarian in slaughterhouses	Ministry of Industry
84/1	23/12/2021	2	13/01/2022	Food Industry must adhere to good manufacturing practices and Lebanese quality standards	Ministry of Industry
2/1	18/01/2022	5	27/01/2022	Prohibition of importing hazardous chemicals for industry	Ministry of Industry
12	31/01/2022	6	03/02/2022	Modification of decree no. 175 dated 15/9/2015 related to replacing metallic gas cylinders (Butane / propane) found in the local market	Ministry of Energy and Water Resources
16/1	04/02/2022	7	10/02/2022	Limits for emissions of air pollutants	Ministry of Environment
6/1	10/02/2022	9	24/02/2022	Technical criteria and conditions to be followed by factories producing and packing whole and ground grains, legumes, spices, and condiments whether whole and ground	Ministry of Industry
51/1	15/02/2022	10	03/02/2022	Establishing a food contaminant monitoring system	Ministry of Agriculture
17/1	14/03/2022	13	24/03/2022	Defining Manufacturing MSMEs	Ministry of Industry

Decree		Official Gazette		Subject	Party
No.	Date	Issue	Date		
1/1/ET/M	28/02/2022	12	17/03/2022	Extending the validity of Decree no. 1/1/ET/M dated 21/01/2019 relating to regulating the status of liquid and liquefied petroleum fuel tankers	Ministry of Economy and Trade
21/1	17/03/2022	13	24/03/2022	Conditions to be met by Detergent factories	Ministry of Industry
23	22/03/2022	14	31/03/2022	Modification of Decree no. 175 dated 15/9/2015 related to replacing metallic gas cylinders (Butane / propane) found in the local market	Ministry of Energy and Water Resources
27/1	30/03/2022	17	14/04/2022	Lebanese factories are mandated to get the pre-approval of the Ministry of Industry for receiving products form Lebanon Chemicals SAL factory	Ministry of Industry
2/1/ET/M	04/04/2022	19	28/04/2022	Extending the validity of Decision no. 1/1/ET/M dated 21/01/2019 relating to regulating the status of liquid and liquefied petroleum fuel tankers	Ministry of Economy and Trade
34/1	28/04/2022	23	26/05/2022	Regulation of the procedure for scrap presses to obtain raw materials	Ministry of Industry
35/1	05/05/2022	23	26/05/2022	Mechanism for hiring a chemist in factories	Ministry of Industry
503/1	20/05/2022			Subsidizing medical devices and accessories used in heart conditions and dialysis	Ministry of Public Health
504/1	20/05/2022			Updating the procedures regulating the Importation and use of miscellaneous medical materials and registering implanted medical devices	Ministry of Public Health
760/1	10/06/2022			Formation of a committee to grant pre-approval on the importation of laboratory reagents and medical accessories	Ministry of Public Health
46/1	16/06/2022	28	30/06/2022	Appointment of two members on the board of directors of the Industrial Research Institute	Ministry of Industry
54/1	21/07/2022	36	18/08/2022	Regulation of the procedure for obtaining raw material by coal factories	Ministry of Industry

Decree		Official Gazette		Subject	Party
No.	Date	Issue	Date		
58/1	10/08/2022	36	18/08/2022	Regulation of calibration of measurement equipment in Lebanese factories	Ministry of Industry
59/1	10/08/2022	36	18/08/2022	Imparting legal mandatory status for a national standard related to plastic materials intended for contact with food products	Ministry of Industry
349/1	08/08/2022	39	08/09/2022	Determination of the validity period for laboratory tests for plant-based food products and agricultural imports while in the customs premises	Ministry of Agriculture
86/1	14/09/2022	41	23/09/2022	Mechanism for application of Decree 58/1 dated 10/8/2022 related to the regulation of calibration of measurement equipment in Lebanese factories	Ministry of Industry
71/1	22/09/2022	42	29/09/2022	Postponing the application of Decree 53/1 dated 9/5/2022 and annexed Table 1 related to the registration of foreign factories qualified to export their products to the Republic of Lebanon	Ministry of Industry
9480/T	26/10/2022	47	03/11/2022	Requiring ice factories to conduct regular tests on their products	Ministry of Industry
9487/T	01/11/2022	48	10/11/2022	Requiring juice factories to conduct regular tests on their products	Ministry of Industry
69	08/12/2022	54	15/12/2022	Modification of Decree no. 175 dated 9/5/2015 relating to replacing metallic gas cylinders (Butane / propane) found in the local market	Ministry of Energy and Water Resources
9479/T	25/10/2022	55	22/12/2022	Requiring water purification and filling factories to perform regular tests on their products	Ministry of Industry
115/1	20/12/2022	56	29/12/2022	Postponing the application of decree no. 53/1 dated 9/5/2019 and annexed Table 1 related to the registration of foreign factories qualified to export their products to the Republic of Lebanon	Ministry of Industry



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Visit of the Iraqi Minister of Industry and Mineral Resources to the Industrial Research

Institute

07-03-2022



نداء الوطن

العدد 916 - السنة الرابعة | الخميس 25 آب 2022

تحفيز الصادرات باعتماد المعايير العالمية

بتصرفهم، «مع الاستعداد الكلي لإزالة المعوقات الفنية والإدارية من أمامهم». كما تحدّث الفرّج عن دور المعهد في نموّ الاقتصاد الوطني، وعن نشاطه السنوي «لم يتوقّف في أكثر المراحل صعبة»، وعن التعاون القائم بينه وبين الجهات الدولية والاعتمادية لإبقاء المعهد على تطوّره وجهوريته في الأبحاث والدراسات والاستشارات، شاكرًا للوزير بوشكيان دعمه المتواصل.

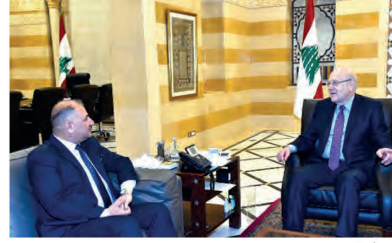
الأيزو والـ codex، انطلاقاً من وجود عدد لا بأس به من المؤسسات التي تعمل في هذا القطاع وهي بغالبيتها صغيرة ومتوسطة وأصبحت متطورة وتلبي قسماً كبيراً من حاجة السوق المحلي، وتلجأ إلى التصدير لأسواق أوروبية وأمريكية وعربية وأفريقية. وهذا بوشكيان الصناعيين على عملهم وشجّعهم على الاستثمار والتوسع، واضعاً إمكانات الوزارة

عقد وزير الصناعة في حكومة تصريف الأعمال النائب جورج بوشكيان والمدير العام لمعهد البحوث الصناعية بسام الفرّج ومدير المختبرات في المعهد جوزيف متى اجتماعاً أمس، مع عدد من مصنّعي البهارات، بهدف الإطلاع على أوضاع القطاع، ودراسة كيفية قيام المعهد بدور تحفيزي أكبر لتصدير المنتجات عن طريق تسهيل الفحوص المخبرية وفق المواصفات الوطنية التي تتّبع المعايير العالمية مثل

الجمهورية

العدد 3225 | الثلاثاء 8 آذار 2022

محدثات صناعية لبنانية - عراقية لدعم التعاون



جالس وزير الصناعة والمعادن العراقي مهنل عزيز الخياط على كل من رئيس الحكومة الجديد العراقية بسيم جليل الخياط ووزير الصناعة والمعادن العراقي مهنل عزيز الخياط في حضور وزير الصناعة جورج بوشكيان وسفير لبنان في العراق ميسر الخياط والصحفيين العراقيين في اثناء جولة سياحهم الى العراق.

استقبل رئيس مجلس الوزراء جلال عبد الله مهنل عزيز الخياط في حضور وزير الصناعة جورج بوشكيان وسفير لبنان في العراق ميسر الخياط والصحفيين العراقيين في اثناء جولة سياحهم الى العراق.

بعد اللقاء، قال الوزير العراقي: «لدينا آمال كبيرة في تعزيز التعاون بين الصناعات العراقية والصناعات اللبنانية، ونحن نرى في زيارة الوزير الخياط ووفدته الى العراق فرصة جيدة لتعزيز العلاقات بين الصناعات العراقية واللبنانية، خاصة في مجال الطاقة المتجددة والمواد الخام والمنتجات الزراعية». وأضاف: «نحن نرى في زيارة الوزير الخياط ووفدته الى العراق فرصة جيدة لتعزيز العلاقات بين الصناعات العراقية واللبنانية، خاصة في مجال الطاقة المتجددة والمواد الخام والمنتجات الزراعية».

من جانبه، قال الوزير اللبناني: «نحن نرى في زيارة الوزير الخياط ووفدته الى العراق فرصة جيدة لتعزيز العلاقات بين الصناعات العراقية واللبنانية، خاصة في مجال الطاقة المتجددة والمواد الخام والمنتجات الزراعية».

منح اللبنانيين بشيرة دخول الى العراق لمدة 6 اشهر، واتاحت مستثمر لبنان والتعاون بين البلدين.

والصناعات العراقية هي صناعة العراق التي لها اليد الطولى في الصناعات العراقية، وخاصة في مجال الطاقة المتجددة والمواد الخام والمنتجات الزراعية. ونحن نرى في زيارة الوزير الخياط ووفدته الى العراق فرصة جيدة لتعزيز العلاقات بين الصناعات العراقية واللبنانية، خاصة في مجال الطاقة المتجددة والمواد الخام والمنتجات الزراعية».

الدستار

العدد ١٦٨١١ | الثلاثاء ٨ آذار ٢٠٢٢

وزير الصناعة العراقي زار بري وميقاتي بوشكيان: زيارة قريبة الى العراق برئاسة ميقاتي



بري ومجلسه بوزير الصناعة العراقي بحضور بوشكيان (حسن ابراهيم)

بعد نهاية الجلسة، انتقل الجميع الى قاعة الاجتماعات حيث جرى عرض لمعرض عمل مختلف الأقسام ومدريات المهتم في حضور المديرين ورؤساء الأقسام والمسؤولين.

عند بري

كما استقبل الوزير بري وزير الصناعة العراقي مهنل عزيز الخياط والسفير العراقي مهنل الخياط ومندوبين من الجانب العراقي، حيث جرى عرض لمعرض عمل مختلف الأقسام ومدريات المهتم في حضور المديرين ورؤساء الأقسام والمسؤولين.

من جانبه، قال الوزير اللبناني: «نحن نرى في زيارة الوزير الخياط ووفدته الى العراق فرصة جيدة لتعزيز العلاقات بين الصناعات العراقية واللبنانية، خاصة في مجال الطاقة المتجددة والمواد الخام والمنتجات الزراعية».

من جانبه، قال الوزير العراقي: «نحن نرى في زيارة الوزير الخياط ووفدته الى العراق فرصة جيدة لتعزيز العلاقات بين الصناعات العراقية واللبنانية، خاصة في مجال الطاقة المتجددة والمواد الخام والمنتجات الزراعية».

وقال بوشكيان: «زيارةكم اليوم مهمة جدا في التوثيق والاعداد، تأتون في زمن التغيرات الاقتصادية والموالية، ونحن في لبنان والعراق، على ارتباطنا الوثيق الحقيقية التي تربط بلدنا ومجتمعنا، وتوصلت وزاراتنا الصناعية في البلدين الى مذكرات تعاون وتمسيحها وتطويرها، ونحن الآن في صدد تحديد وتوطير هذه الاتيات الاسراع في تنفيذها، تأخيرة ارساء مفهوم الصناعات التكاملية والتبادلية، والتدريب، والمسائل التجارية، والكتلة والارشيف، وفتح آفاق الشراكة بين رجال الأعمال في كلا البلدين».

وختتم: التصميم على النجاح والتقدم موجود لدى الطرفين كما لدينا مشاركة السلطات الرسمية في كل من لبنان والعراق على الاعجاب قديما في العلاقات الى الأمام من دون حواجز. كما أود أن أنقل خيرا سرا الى اللبنانيين عن موافقة السلطات العراقية كما بلغنا معالي الوزير على منح اللبنانيين تأشيرة دخول الى العراق مدة ستة اشهر. كما ان البحث مستمر لانقاء التأشيرات بين البلدين».

الخياط

وتحدث الوزير الخياط وقال: «إننا نسير في الاتجاه الصحيح نحو تنفيذ اول خطوات مذكرتنا التعاون التي وقعناها في بغداد قبل شهرين تقريبا».

معهد البحوث الصناعية

وكان الوزيران والسفيرين والوفد جلا بدعوة من المدير العام لمعهد البحوث الصناعية الدكتور بسام الخياط في مقر المعهد وأقسامه ومراكز الأبحاث والتطوير والبرامجيات، وبعد ترتيبه لهم جولة سياحيا عن المعهد من الاول من نوعه في العام العربي وتأسس في ١٩٥١، ويضم ١٣ مختبرا على نحو خمسمائة طريقة اختبار معتمدة اوروبيا ودوليا، وأكثر القرن، «طور المعهد من خلال شبكة العلاقات الدولية ويعمل على تحديثه وتطويره وتوسيعه وتخصيصه معناه التعاون المحلي لتقديم خدمات في دول عربية والريفية واسيوية».

وشرح أيضا أسس المعهد في تجهيز المباني الخاصة به بالطاقة الشمسية ووجود مراكز لتحديث الصناعات والادراج والتكنولوجيا وتقديم خدمات الطاقة والاستشارات الارادية والتقنية ولتلبية المؤسسات الصناعية العراقية في التوسع.

Memorandum of cooperation between the Ministries of Industry and Agriculture and The Industrial Research Institute to select IRI laboratories to conduct analyses on imported and local goods
24-10-2022



الاصوات
مجلة اقتصادية عربية

الثلاثاء ٢٥ تشرين الأول ٢٠٢٢ | العدد ١٦٥١٣

مذكرة تفاهم بين «الصناعة» و«الزراعة» و«البحوث الصناعية»

وَقَّعَ وزيرُ الصناعة والزراعة في حكومة تصريف الأعمال الاستاذ جورج بوشكيان والدكتور عماس الحاج حسن ووالدبير العام لمعهد البحوث الصناعية الدكتور بسام القرن مذكرة تفاهم بين الوزارتين والمعهد تقضي باعتماد مختبرات المعهد للقيام بفحوصات المنتجات الغذائية المستوردة، والمنتجة محلياً معدةً للاستهلاك المحلي أو للتصدير وفقاً للوائح المفوضات وأسعارها والمهل القسوي لإيجازها والمعايير العلمية المعتمدة لكل عتقة.

وألقي الدكتور القرن كلمة جاء فيها: «تلقي للتوقيع على مذكرة تفاهم بين وزارتي الزراعة والصناعة ومعهد البحوث الصناعية، تهدف إلى اعتماد مختبرات المعهد لإجراء الفحوصات المخبرية على المنتجات الصناعية الغذائية المستوردة والمحسرة، كضمانة وشهادة صابرة عن مرجعية وطنية في منظومة سلامة الغذاء قادراً معهد البحوث الصناعية وتأتي هذه المبادرة المتقدمة حرصاً من المعهد على الصحة والسلامة العامة بالتنسيق مع وزارتي الصناعة والزراعة. يواصل المعهد عمله الدؤوب منذ العام ١٩٨٨، ولم يتقطع يوماً عن النشاط وقت توقفت الإيرادات الخاصة والرسمية في زمن جائحة كورونا. كما نحن زمامتي في المعهد في السنوات الثلاث الماضية عندما تقلعت اوصول المناطق بين بعضها بسبب الاحتجاجات، على التفتل والوصول إلى مركز العمل لخدمة الاقتصاد والمواطن

الدَّيَّار

العدد ١١٩٧٠ الخميس ٢٥ آب ٢٠٢٢

بوشكيان والفرنّ عرضاً تطويراً لصناعة البهارات



عقد وزير الصناعة في حكومة تصريف الأعمال النائب جورج بوشكيان والمدير العام لمعهد البحوث الصناعية بسام الفرنّ ومدير المختبرات في المعهد جوزيف متي، اجتماعاً ظهر اليوم مع عدد من مصنعي البهارات، بهدف الإطلاع على أوضاع القطاع، ودراسة كيفية قيام المعهد بدور تحفيزي أكبر لتصدير المنتجات عن طريق تسهيل الفحوص المخبرية وفق المواصفات الوطنية التي تتبع المعايير العالمية مثل الأيزو والـ codex، انطلاقاً من وجود عدد لا بأس به من المؤسسات التي تعمل في هذا القطاع وهي بغالبيتها صغيرة ومتوسطة وأصبحت متطورة وتبني تقنياً كبيراً من حاجة السوق المحلي، وتلجأ إلى التصدير لأسواق أوروبية وأميركية وغربية وأفريقية. وهنا بوشكيان والصناعيين على عملهم وشجّعهم على الاستمرار والتوسع، وأضعا إمكانات الوزارة بتصرفهم، مع الاستعداد السكلي لإزالة المعوقات الفنية والإدارية من أمامهم.

كما تحدّث الفرنّ عن دور المعهد في نموّ الاقتصاد الوطني، وعن نشاطه الذي لم يتوقّف في أكثر المراحل صعبة، وعن التعاون القائم بينه وبين الجهات الدولية والاعتمادية لإبقاء المعهد على تطوره وجهوزيته في الأبحاث والدراسات والاستشارات، شاكرًا الوزير بوشكيان على دعمه المتواصل.



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