



## **RE-MED organized a seminar in Lebanon: "Towards Implementing Circular Economy on Recycled Materials from the Construction and Demolition Sector"**

The Ministry of Environment, with the support of the French Center for Studies and Expertise on Risks, Environment, Mobility, and Planning (Cerema), and the Lebanese Contractors Syndicate for Public Works and Buildings, hosted a seminar (February 24<sup>th</sup>) to launch the "RE-MED Community" platform and its application within the framework of promoting circular economy in the Mediterranean region.

The event was held under the patronage of the Minister of Environment in the Caretaker Government, Nasser Yassin, at the Radisson Blu Hotel in Verdun. Active participants from the construction sector in France, Italy, Lebanon, and Tunisia, including the Tunisian Ministry of Environment, were present to exchange knowledge and showcase innovations in this field.

The meeting began with a speech by Dr. Oumaya Marzouk, expressing gratitude to the Ministry of Environment in Lebanon for organizing the event. She also thanked Eng. Maroun El-Helou and the attendees for their participation. A short documentary film summarizing the RE-MED project was then presented.

Marzouk emphasized that "recycling construction and demolition waste is a fundamental challenge, requiring collaboration between partners to ensure the success of this project related to the use and recycling of such waste." She

highlighted that during this meeting, the "RE-MED Community" platform would be launched by the French company Dynedoc, and Mr. Philippe Escojido would present its associated application and its importance for the RE-MED project. With the population growth leading to an increase in construction and demolition waste, collaboration between Lebanese, Tunisian, French, and Italian partners will contribute to the success of the recycling process.

Marzouk added, "This program aims to support technology and enhance education, with a budget exceeding 3 million euros. It involves various partners representing public authorities, research institutions, construction companies, interested activists, and agencies responsible for setting standards. This project has led to the creation of a unique platform called the RE-MED Community, bringing together all stakeholders in the construction and demolition sectors, including recycling companies, waste transporters, contractors involved in road and building construction, technical centers, and universities. The goal is to establish relationships among these active entities to work together towards finding solutions to the problems caused by construction and demolition waste."

She mentioned, "This project will also provide financial support to encourage companies to invest in recycling facilities, such as 'Fakih Brothers,' which has shown interest in this project and has been selected to launch it in Lebanon. I congratulate them on this achievement. 'FAKIH Bros. for Construction & Trade' will receive a financial support of 60,000 euros from the European Union. The project recognizes the potential that will assist companies in activities related to recycling construction and demolition waste. Once we establish the procedures for waste collection, identification, loading, and utilization in road construction, we can also set standards that companies can adopt and implement when building roads. Therefore, contractors must also consider the environmental factor in road construction to promote rehabilitation through the use of recycled materials in road building, allowing companies to demonstrate the feasibility of adopting innovations and using these alternative materials instead of natural resources."

Marzouk continued, "In this project, we will conduct several tests in collaboration with Cerema and the University of Palermo. We will also conduct various classical tests on construction and demolition waste in Tunisia, enabling us to study the environmental situation, ultimately leading to the creation of a model road. Through this road, we will reach out to companies interested in this new market.

Philippe Escojido, the manager of the French company Dynedoc, spoke about the RE-MED Community platform and its smartphone application during the Mediterranean Day event. He began his speech by thanking the partners and everyone involved in organizing this successful event. He stated, "We hope that the RE-MED project will play a crucial role in promoting the circular economy, especially in light of the climate changes we are witnessing. It also aims to address the recycling of construction and demolition waste and put an end to sand extraction from Crushers and Conveyors. As part of this gathering of experts and researchers, we thought of creating an online exchange platform and developing a smartphone application."

The idea behind the RE-MED Community, which is supported by the European Union, originated from the need for key locations such as construction and demolition sites to share information on material usage and the individuals involved in this sector. It also targets those interested in the circular economy, including the industrial sector, which can reuse and recycle these materials while ensuring their quality and durability for future construction projects. The RE-MED Community website will also provide information on recycling sites and the distances between them to facilitate communication.

The innovative and unique digital tools available on the "RE-MED Community" platform create a multicultural space for exchange. They allow for the dissemination of documentary materials, educational opportunities, job offers, and training programs. These tools include a "database of experts" that presents references on circular economy development and recycled materials. Additionally, the platform provides information on tenders and related events for the RE-MED project. Furthermore, these tools serve as a marketplace, facilitating the publication of material and equipment offers related to the management and utilization of construction and demolition waste.

During the event, Philippe Escojido answered questions regarding the platform's functionality and the participation of small and medium-sized companies, as well as workshops with limited quantities of excavation waste and the interest shown by platform administrators.

## **Helou**

Maroun El-Helou, the head of the Lebanese Contractors Syndicate, also made a speech, stating, "This project should have been initiated two years ago, but today it has come to light. Regarding waste treatment, we should start by addressing

quarries and crushers in Lebanon instead of extracting rocks and sand. This would contribute to utilizing demolition waste in roads and buildings. Cerema has worked on promoting this advanced project, along with the Lebanese Contractors' Syndicate (LCS) and the Lebanese Ministry of Environment (MOE), through various conferences and workshops to encourage collaboration & engagement."

El Helou highlighted that all advanced countries have embraced this concept, and Lebanon will benefit from the necessary facilities through the support of local contractors. Managing large quarries and sorting construction waste are not challenging tasks for Lebanese contractors, who possess the capability to implement sustainable practices. Overreliance on quarries and crushers only damages the environment, and it is time to adopt a different approach.

### **First Recycling Contract Signed**

During the event, the contract was signed between the representative of "FAKIH Bros. for Construction & Trade" Mr. Abbas Fakih, who received a grant from the RE-MED project worth 60,000 euros, and the President of the LCS, engineer Maroun El-Helou. The contract aims to develop and operate a facility for the production, treatment, and recycling of construction and demolition waste.

Helou expressed his gratitude to Mrs. Oumaya Marzouk for her significant efforts in accomplishing this project and reaching this stage. He also thanked the team at LCS, especially engineer Joseph Maalouf, Colonel Elia el Obeid, and Mrs. Mireille Samaha, as well as the Lebanese Ministry of Environment for their notable interest in the success of this project. El Helou concluded his speech by emphasizing the importance of continuing this future-oriented project.

### **Roundtable Discussion**

Following that, a roundtable discussion was held, moderated by General Elia el Obeid, entitled "Reactions Based on the Experiences of Environmentally Committed Construction Companies in the Sustainable and Circular Mediterranean Basin". Several companies presented their experiences and experiments regarding the utilization of alternative resources resulting from construction and public works. Among the speakers was Mr. Abbas Fakih, representing the winning company of the financial grant. He presented the history and activities of his company in this field, stating, "We, Fakih Brothers for Contracting, Construction, and General Trade, have been working in construction, roads, and contracting for

over thirty years. When work stopped in quarries and crushers, we needed crushed stone materials for concrete and leveling, which were exclusively available in crushers located in the Western Bekaa region, about 50 kilometers away from Nabatieh, with extremely difficult uphill and downhill terrain. It means that each truck can only transport two loads per day, in addition to the high costs of diesel, tires, and truck maintenance due to the large excavations on the road, resulting in significant consumption. This prompted us to explore alternative sources."

He added, "Therefore, we collaborated with the municipalities of Alshqif, where we secured 150,000 tons of stones. We purchased a mobile crusher to crush the large stones and convert them into basalt and leveling materials. This contributed to the production of clean materials used in road construction and retaining walls, saving contractors between 60% and 70% of the cost. We obtained a license from the Ministry of Environment and started working until 2016. However, despite the approval of the Ministry of Environment, the Ministry of Interior refused to notify the Governor of Nabatieh to grant us the required license. Therefore, we started using these materials according to the Ministry of Public Works' leveling and crushing. We have been using these materials for over ten years in all the roads, and they are of excellent quality. This crusher and the materials were the ideal solution in terms of quality for road works."

### **Al-Jaouadi**

Then Mr. Zakaria Al-Jaouadi, the director of the Tunisian company REG, spoke about the Tunisian experience, starting with the exemplary project implemented by the Zahra Municipality, which collected and sorted solid waste (8 million tons annually). He said, "Today, we are implementing the circular economy concept, which aims to transform non-salvageable products into usable materials. We thank the Zahra Municipality and the Ministry of Environment for their cooperation in promoting the circular economy culture and combating waste."

### **Marzouk**

Ms. Oumaya Marzouk discussed the RE-MED project launched in Tunisia, aiming to recycle construction and demolition materials due to the significant amount of waste in various sectors. She said, "Cerema's work is crucial for ecological and environmental transformation towards a circular economy. We launched this project and selected partners with complementary skills. We worked in France on recycling construction and demolition waste, and we have facilities for small and medium-sized companies. We collaborated with various companies and

associations to recycle construction and demolition waste. Companies undoubtedly benefit from recycling operations and provide job opportunities through the circular economy. Today, we are turning this technology into a culture through research with private companies and representatives of companies affiliated with unions. Therefore, I call on Tunisian and Lebanese companies to cooperate in building a bridge, even if it spans long distances geographically, to benefit from each other's experiences through the available models and the 'RE-MED Community'."

## **Khalifa**

Engineer Michel Khalifeh stated in his speech, "This meeting is very important and represents a new qualitative leap in the approach to environmental issues and waste management in general. In Jbeil district, we have a centralized center that accommodates all types of waste and the problems they cause because the center is not a landfill. I believe that the Minister of Environment is convinced that waste management should be decentralized under the supervision of the Ministry of Environment.

To ensure that the Ministry of Environment remains the sponsor of this issue, I call for the establishment of national environmental development councils similar to other councils that keep up with new developments and provide a platform for finding treatment sites.

Recently, we conducted a small experimental project in Jbeil city because waste management is an integrated process that starts with household sorting, transportation, and ends with treatment. It cannot be fragmented because fragmentation does not lead us to the right place. Therefore, I advocate for the decentralized integrated waste management. The experimental project focused on sorting tourist waste from its source, such as hotels and restaurants, and then transporting it to the site to manufacture organic fertilizer. Therefore, any plan can rely on decentralization, and this plan requires legislation. I also inquire about whether the 'Ordre of Engineers and Architects – Beirut' considers adopting this type of recycled aggregate in the specifications. Does the tender document include that? Furthermore, I would like to emphasize the importance of integration between the public and private sectors to overcome the waste problem, especially in light of the financial incapacity of municipalities and the absence of any legislation requiring citizens to pay fees for waste management."

## **Rizkallah**

Marwan Rizkallah, the CEO of Mondis company, spoke about his company, which has been part of the Man Enterprises Group since 2019 with the goal of entering the environmental field. He mentioned their camp in Fanar, which employs about 2,000 workers and works on waste and wastewater treatment. He said, "The circular economy is a culture that lies in how we deal with this reality. Since most waste is organic, we have developed a method to sort it before it mixes together. Currently, we sort 10 tons of food waste and provide it to a pig farm. We have also started sorting other materials such as aluminum, plastic, and glass.

The goal of the circular economy is not to let materials become waste but to seek their reuse and recycling. This is the direction we have been working on in the company for the past four years and continuously improving.

Finally, I would like to request officials in the Contractors Syndicate to encourage contractors, when demolishing any building, to sort materials such as iron, aluminum, wood, ceramics, and electrical wires before considering them as waste."

The roundtable session concluded with a speech by Minister of Environment Nasser Yassin, who stated, "The project of recycling and treating construction waste, even if it is difficult to achieve, is extremely important and cannot be implemented without the involvement of the private sector.

Referring to the ministry's plan, which is based on decentralization, Yassin mentioned the establishment of 14 service areas for waste collection and sorting in Lebanon. He said, "The absence and unregulated management of all types of waste, and the way this sector has been handled in previous years, relied on the concept of a major contractor who was only concerned with collecting all the waste or creating a sanitary or makeshift landfill, without sorting construction waste such as plastic, wood, cardboard, and organic waste... This led to the collapse of the financial and administrative reality. Today, in light of the crisis and the pursuit of efficient management of this sector within the principles of circular economy, it is necessary to regulate the various types of waste for their reuse in the circular economy, based on the following points:

- Processing and organizing each type of waste, especially considering the large weights of construction and demolition waste.

- The success of the waste sector can only be achieved through serious participation from the private sector, where everyone bears social and environmental responsibility. This partnership with the LCS and the private sector should serve as a model for managing many of these waste streams.
- There is a need for full conviction among local administrations to adopt decentralization in this sector, and municipalities should strengthen their capacities to be able to accommodate it. Therefore, our plan relies on the existence of 14 service areas, each represented by municipalities or major cities on the coast, where they develop their local plans and regulate their affairs according to the law. In the Ministry of Environment, we have been working for a year to amend Law 80/18, related to solid waste management, so that these municipalities can directly collect fees from companies, stores, and households to allocate them to this sector."

