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Green Tech Start-ups: Effective Solution to Sustainable Challenges in the South Med*

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Executive Summary

The Southern Mediterranean region faces different environmental problems such as water scarcity, arable land depletion, air pollution, inadequate waste management, loss of biodiversity, declining marine resources, and degradation of coastal ecosystems. Despite the significant impact of these threats on the quality of life of the population, they are still not consistently part of the development strategies. South Med public policies are predominantly focused on salient threats to socio-economic development such as high unemployment (especially youth unemployment), poverty, income inequality, limited intergenerational mobility, food insecurity, political instability, and military and social conflicts. Current situation limits public policy in implementing widespread environmental instruments requiring alternative approaches. Among the latter, promising solution is offered by GreenTech start-ups, ecological initiatives that often take the form of small- and medium or social enterprises. They belong to a bottom-up approach where businesses are implemented as a response to current local needs of the society. Despite the high potential of this approach, it develops relatively slowly facing certain constraints due to limits of public policy.

This brief focuses on the contribution of GreenTech start-ups to sustainable economic development in South Med countries. It provides an overview of the current opportunities for environmental innovations in South Med countries and the corresponding role of public policy. Then it explores the main refraining obstacles highlighting the experience of three start-ups from Lebanon, Jordan, and Tunisia working in the GreenTech field with a focus on waste and water management and apparel industries, main drivers of their growth, and challenges they are facing. Finally, it concludes with some recommendations to improve the existing public

policy in order to foster GreenTech start-ups. Among the latter the brief is focused on the creation of an environmentally-friendly ecosystem with legal, financial and educational support.

1. Introduction

Sustainable economic development is one of the key challenges faced by South Med countries in the presence of salient ecological threats. The region experiences different environmental stresses such as water scarcity, arable land depletion, air pollution, inadequate waste management, loss of biodiversity, declining marine resources, and degradation of coastal ecosystems.[1] The costs of environmental degradation for this region range from 2-3% of GDP in Tunisia and Jordan to 5% of GDP in Egypt.[2] The ecological footprint of the South Med countries exceeds their biocapacity on average 1.7 times[3]. Meanwhile the Mediterranean basin is one of the 36 world's biodiversity hotspots, a bio-geographic region that is irreplaceable due to many endemic plants threatened by human activity. At the same time, according to the Environmental Performance Index (EPI)[4], the national environmental performance of the region requires improvement. The 2020 EPI score for South Med countries is 46 (out of 100) in 2020 on average, ranging from a maximum rank of 48 (Jordan) and a minimum rank of 100 (out of 180) (Morocco).[5]

Sustainability is based on three main pillars, *economic*, *social* and *ecologic*, reconciling the *socio-economic* development with *socio-environmental* priorities of current and future generations resulted in constructing an environmentally-friendly economic system, or *Green Economy*. Environmental technologies, GreenTech or CleanTech, can be seen as a keystone of Green Economy. They include the application of environmental sciences for the development of new technologies to monitor, conserve, or reduce environmental impacts. Such sectors as energy, waste and water management, transportation, green construction, green software make significant contribution to the environmental technologies market which is estimated to reach $552.1 billion in 2021 and is expected to grow at annual rate of 4.6% during the 2021-26 period[6]. GreenTech is a crucial element of cost-efficient, low-carbon and socially-inclusive economic development that allows countries to meet the current ecological challenges.

GreenTech is often related to innovation activities, start-ups and/or research and development (R&D) investments. The *amount* of R&D spending is positively correlated with firm size: larger firms are capable to invest more. In the South Med region though, the number of firms spending on R&D is as low as 5.6% of total firms, this share varies from 11.2% in Morocco to 1.1% in Egypt[7]. At the same time the empirical evidence of the relationship between the R&D *efficiency* and firm size is mixed. Thus, it has been shown that small businesses produce more

[1] Abumoghli I., Goncalves A. (2020). The Environmental Challenges in the Middle East and North Africa Region, UNEP.
[2] Croitoru, L., & Sarraf, M. (Eds.). (2010). The cost of environmental degradation: case studies from the Middle East and North Africa. The World Bank.
[3] National Footprint and Biocapacity Accounts 2021 Public Data Package. https://www.footprintnetwork.org/
[4] EPI provides a data-driven summary of the state of sustainability around the world assigning to each country a score out of 100 and ranking them on their environmental health and ecosystem vitality from the most (rank 1) to the least (rank 180) efficient performers.
[5] Wendling, Z. A., Emerson, J. W., de Sherbinin, A., Esty, D. C., et al. (2020). 2020 Environmental Performance Index. New Haven, CT: Yale Center for Environmental Law & Policy.
[6] Global Environmental Technology Market Forecasts to 2026 - A USD 690.3 Billion Market by 2026 with CAGR of 4.6% During 2021-2026. July 26, 2021, BusinessWire.
[7] TNS Scoreboard (https://www.thenextsociety.co/i-data) based on data from the World Bank Group, Enterprise Surveys (http://www.enterprisesurveys.org), The World Bank.

innovation per given expenditure compared to large businesses[8]. Besides, SMEs account for about 90% of business and more than 50% of employment worldwide playing a key role in promoting sustainable economic growth.

The role of SMEs in the South Med region is even more important[9] as they represent a minimum of 95% in total enterprises and contribute at least half of the share of employment as indicated in the table below:

Country	SMEs as a share in all enterprises	SMEs as a share of employment
Algeria	95%	56%
Egypt	From 95% to 98%	75 %
Jordan	98%	60%
Lebanon	95%	50%
Morocco	95%	46%

Source: various sources, please refer to footnote 9

At the same time, SMEs face severe constraints for conducting innovation activities such as lack of capital, human resources, and knowledge; external resources accessibility; difficulties in protecting intellectual property rights[10]. Accordingly, various public policies are needed to create strong incentives and possibilities for SMEs to grow and innovate.

The role of small business is even more important as they often take a form of social enterprises (SEs), an innovative community-centered profit-driven organisations targeting diverse social issues and fostering social and environmental well-being. Accordingly, the role of small- and medium-size enterprises (SMEs) as environmentally-friendly start-ups is of crucial importance for the socio-economic development and greening the economy.

This policy brief discloses the contribution of GreenTech start-ups to sustainable economic development in South Med countries. It provides an overview of the current opportunities for environmental innovations in South Med countries and the corresponding role of public policy. Then it explores the main refraining obstacles highlighting the experience of three start-ups in the field of GreenTech from Lebanon, Jordan, and Tunisia working in waste and water management and apparel industries, main drivers of their growth, and challenges they are facing. Finally, it concludes with some recommendations to improve the existing public policy in order to foster environmentally friendly start-ups of SMEs.

[8] Baumann J., Kritikos A.S. (2016). The link between R&D, innovation and productivity: Are micro firms different? Research Policy, Vol. 45, Issue 6, July 2016, pp. 1263-1274.

[9] Data on **Algeria** - Interview with Abderrahmane Raouya, Minister of Finance, on subsidy reforms, entrepreneurship and public spending. https://www.oxfordbusinessgroup.com/country/algeria.; on **Egypt** - Amr Abdel bary (2019). SMEs Sector : a Key Driver to the Egyptian Economic Develoment. MPRA Paper No. 93034, posted 08 Apr 2019. https://mpra.ub.uni-muenchen.de/93034/; on **Jordan** -Khaled A., Khaled A., Jaradat M. (2019). The Role or Small Medium Enterprises in Reducing the Problem of Unemployment in Jordan. International Journal of Development and Economic Sustainability, Vol.7, No.2, pp. 28-36; on **Lebanon** -Matta J.M. (2018). M/SMEs in Lebanon. Status, strategy and outcomes. SME strategy by Ministry of Economy and Trade. http://www.economy.gov.lb/media/11222/smes-in-lebanon-180412-19-website.pdf; on **Morocco** - Augier P., Castel V., El Malki T. (2019). Identification of barriers to the integration of Moroccan SMEs in global value chains. FEMISE Euromed Report.

[10] Colombo M., Nishimura J., Okamuro H., Stam E. (2019). Promoting SME R&D and Innovation. G20 INSIGHTS policy brief.

2. Opportunities for Environmental Innovations in South Med countries

Environmental innovations depend on a range of different factors that can be aggregated in four main groups related to *demand*, *competitive pressure*, *technological opportunities*, and *public regulation*[11]. In the South Med region, the impact of these factors remains limited.

- *Demand* for environmentally-friendly technologies in South Med countries can be considered as relatively weak. Only 6.6% of respondents in the region consider environmental pollution as the most serious problem for the development of the society, with the least concerns in Egypt (2.2% of respondents) and the highest - in Lebanon (11.5%)[12]. Moreover, when the respondents are offered with two statements, A. "Protecting the environment should be given priority, even if it causes slower economic growth and some loss of jobs" and B. "Economic growth and creating jobs should be the top priority, even if the environment suffers to some extent", only 37.4% of respondents choose A as closer to their own point of view[13]. This result is not surprising as far as the region experiences high unemployment especially among youth - from 30% to 37% in Algeria, Jordan, and Tunisia[14]. Meanwhile, the link between sustainable development and creating new jobs is not clear and can be one of the key stones of public policy to justify the importance of green strategies.
- *Competitive market pressure* is relatively weak taking into account recent transition of the region to the logic of the market economy. Accordingly, competitive position of firms is not determined by their green activity.
- *Technological opportunities* are limited due to poor innovation capabilities. Thus, the Global Innovation Index 2020 ranks the South Med region from 65 (Tunisia - the best most efficient in the region) to 121 (Algeria - the least efficient in the region) positions in the list of 131 countries.[15]
- The link between the *public regulation* and eco-innovations is not clear. While the majority of researchers have shown the positive relationship between the regulation intensity and the environmentally-friendly initiatives of firms, there is some evidence that does not consider this relationship[16]. The success of ecological public policy heavily depends on the type of implemented instruments, their stringency, coordination, and design in the view of particular characteristics of the economy. According to Climate Change Performance Index 2020, the efforts of the South Med regions lead to slight but mixed improvements in climate protection: only Morocco is ranked as a very high performer while Algeria and Egypt - as medium performers[17].

Public regulation can be also seen as an umbrella for all above mentioned factors as far as it is capable to boost the environmental concerns in the society, empower market forces, create innovation-friendly environment, and directly influence the ecological decisions of enterprises. Moreover, the support of SMEs as potential drivers of environmental development can be also provided by public institutes.

[11] Ugaglia A, Ferru M, Guimond B (2012). Moteurs et dynamiques des innovations environnementales des firmes. Le cas du Poitou-Charentes. Document de travail, archive hal-00758925.
[12] World Values Survey, Wave 6 (2010-2014). https://www.worldvaluessurvey.org/
[13] World Values Survey, Wave 7 (2017-2020). https://www.worldvaluessurvey.org/
[14] World Development Indicators The World Bank, 2021. https://databank.worldbank.org/source/world-development-indicators
[15] Cornell University, INSEAD, and WIPO (2020). The Global Innovation Index 2020: Who Will Finance Innovation? Ithaca, Fontainebleau, and Geneva.
[16] See Hamhami, A., Amrani, A.K. & Smahi, A. (2020) Environmental economics in Algeria: empirical investigation into the relationship between technological policy, regulation intensity, market forces, and industrial pollution of Algerian firms. Environmental Science and Pollution Research 27, 45419–45434.
[17] Burck J., Hagen U., Bals C., Höhne N., and Nasciment L. (2021). Climate Change Performance Index.

South Med countries have adopted a number of general and sector-specific environmental and sustainable development policies including corresponding national plans. For a example, as a result of continuous efforts since 1993, Tunisia has become the first country in the region where the right to a healthy environment as a human right is guaranteed by the 45 article of the Constitution 2014[18]. Jordan has recently extended the country's major policy on climate change - the National Climate Change Policy and Sector Strategic Guidance Framework - to 2030 putting the emphasis on adaptation in order to reach both socio-economic development and environmental resilience. The priority sectors include water, agriculture, energy, land use, and desertification[19].

Recently, South Med countries have started to actively develop special programs promoting GreenTech initiatives. For example, in 2020 the European Bank for Reconstruction and Development (EBRD), the European Union (EU), and the Green Climate Fund (GCF) launched two programs aiming to foster a green recovery of the Egyptian economy. The programs offer sub-loans for green investments in energy, water and resource-efficient solutions as well as corresponding technical assistance. Both programs are focused on providing green finance to SMEs. EBRD and the EU also support Jordan in promoting green investments in the private sector by introducing in 2021 the first internationally supported comprehensive green economy programme in the country. The program also sees SMEs as a priority target on the way to green economy. In 2021 the Moroccan Agency for Energy Efficiency and the Ministry of Industry, Trade, and the Digital and Green Economy created a Green Economy "War Room", a centre that to support over 150 different investment projects to develop a sustainable economy.

Despite some success achieved, important gaps and shortcomings in policy remain. One would mention a lack of coordinated policy-making and cooperation on climate change with neighbouring countries even though the region is heavily environmentally and economically interdependent. Many South Med governments remain limited in ambition and action opting for adaptation rather than for mitigation of ecological threats. Lack of systematic approach within and across industries leads to a fragmented legislation that creates obstacles and limits the local environmental initiatives. These shortcomings can be partly justified by the existence of a wide range of challenges such as high unemployment (especially youth unemployment), poverty, income inequality, limited intergenerational mobility, food insecurity together with political instability and military and social conflicts. All of them require corresponding public efforts and funding. Moreover, the COVID-19 pandemic has added more challenges of immediate priority postponing the environmental and sustainable goals.

3. GreenTech Social Enterprises as Potential Solutions to Environmental and Social Challenges

In the current situation a bottom-up approach can be seen as a partial solution to address the environmental challenges. Particularly, small- and medium-sized enterprises (SMEs) acting as **social enterprises** (SEs) could support the environmentally-friendly development of the regions through the engagement of local entrepreneurs.

Meanwhile, public support remains weak as for SEs as for SMEs in general. According to the World Bank Enterprise surveys[20], South Med SMEs are facing severe constraints to their development. The most important among them are *access to finance* (mentioned in Lebanon

[18] "The state guarantees the right to a healthy and balanced environment and the right to participate in the protection of the climate. The state shall provide the necessary means to eradicate pollution of the environment"
[19] Combaz, E. (2019). Jordan's environmental policies and engagement on climate change. K4D Helpdesk Report. Brighton, UK: Institute of Development Studies.
[20] World Bank Data (2021). Enterprise surveys, what businesses experience.

and Tunisia with maximum importance for medium firms in Tunisia - 44.6%), *tax rates* (mentioned in Morocco, Egypt and Jordan with maximum importance for medium firms in Jordan - 29.5%), *political instability* (mentioned in Egypt, Jordan, Lebanon, and Tunisia with maximum importance for medium firms in Lebanon - 39.1%), and *corruption* (mentioned in all countries of the region with maximum importance for medium firms in Morocco - 9.6%). South Med SEs also face different restraining challenges such as *lack of knowledge and skills*, *difficult or no access to financial support*, *poor or even non-existent legal framework*.

In addition, the legal framework supporting social SMEs is a differentiated challenge across the region. For example, in 2010 Morocco implemented a ten-year strategy on social and solidarity economy. In 2020 Tunisia adopted a law on social and solidarity economy aiming to identify the criteria for SEs and to create corresponding fiscal and financial incentives. Other countries have no specific policies or regulations concerning the SE ecosystem. Meanwhile, social entrepreneurship can be seen not only as an effective solution to promote environmental innovation but also as a mean to fight unemployment, especially among youth, and to increase female participation in the economy[21].

4. GreenTech Start-ups: Challenges and Opportunities

South Med GreenTech initiatives represent a relatively new trend in regional development: most of them were created no more than ten years ago in the form of SMEs and/or SEs and more than a half are founded by young entrepreneurs[22]. This new ecosystem can be seen as an efficient solution to a wide range of South Med problems including such salient issues as youth unemployment and ecological and sustainable development threats. The social and environmental importance of GreenTech start-ups is in general recognised by the region but at the same time lack of adequate finance, technical, informational, educational, and legal support as well as underinvestment to green R&D in general is slowing down the new GreenTech ecosystem growth.

Current analysis of the evolution and barriers of GreenTech start-ups universe in South Med countries is based on the following initiatives:

Country	Name and website	Description and motivation
Lebanon and Jordan	**FabricAID** https://www.fabricaid.me/	(*apparel industry, recycling and waste management, Lebanon and Jordan)* **FabricAID** is a social enterprise that aims to establish a socially and environmentally sustainable and scalable value chain in the fashion industry to provide good quality clothing at micro-prices to marginalised communities, promote clothing reuse in general and reduce fabric waste. Currently more than 51 000 beneficiaries take advantage of the start-up initiative. FabricAID also aims to create decent job opportunities for members of the community,

[21] Cicognola G. (2021). MENA Region Social Entrepreneurship Ecosystems: Challenges and Opportunities. MedUP! Promoting Social Entrepreneurship in the Mediterranean Region, EuropeAid/155554/DH/ACT/Multi.
[22] Altman W., Wyne J. (2016). MENA's Cleantech Startups. Unlocking the path to scale and solve environmental challenges. Wamda Report.

		from host to refugee communities, across the value chain.
Lebanon	**LiveLoveRecycle** *www.LiveLoveRecycle.com*	(*waste management, green software)* **LiveLoveRecycle** is a digital platform that connects several stakeholders to facilitate the recycling in Beirut through **digitalizing the waste management sector.** Currently more than 4 000 households take advantage of the mobile application of the company that allows to recycle different types of waste in an easy and proper way.
Tunisia	**Smart Detection** *https://www.euroquity.com/fr/entity/Smart-Detection-29522e42-a25e-4b20-a6dd-f8ee1983120c/)*	(*water management)* **Smart Detection** is a solution for businesses and individuals allowing to control and eliminate water leaks using smart water leak detection system. The project ensures real-time alert, locates the leak with great precision, monitors the state of the leaks without displacement, and minimises losses

All of the start-ups of this survey are examples of a bottom-up approach and based on the strong motivation and personal dedication of their creators, who tried to found solutions to challenges they faced within their communities. In all cases, despite the socio-economic and ecologic importance of their mission, the entrepreneurs have not received sufficient support from public institutes overcoming the challenges on their own or with the help of local communities. Among *the most restraining obstacles* the following four has been mentioned:

- **Legal framework.** The entrepreneurs are facing lack of legal framework to create their enterprises as well as to tackle the ecological and social problems in question. The registration process is not clear and requires a lot of efforts. For example, there is no elaborated social entrepreneurship pathway in Jordan. Consequently, SE can be registered as an NGO by the Ministry of Social Development or as a company by the Ministry of Industry and Trade. Both options correspond to complex registration processes and are not adapted for a SE. Moreover, a status of a company is related to an unfavourable tax regulation.
- **Financial constraints.** So far social enterprises (SEs) are not always present as legal entities in the region complicating the access to funds that are mostly available for NGO/non-profits entity. For example, in Lebanon the financial support can be mostly requested in collaboration with venture capital funds and NGO that can be time-consuming. In addition, no specific incentives are given to social and/or GreenTech start-ups.

- **Availability of skills and information.** Due to the lack of public focus on environmental efforts, the personal interest and motivation of social entrepreneurs play a role of main drivers of GreenTech initiatives. They are facing high barriers to enter or create a market that has not existed before. Lack of knowledge and culture about environmental challenges in the societies mean that additional efforts are required to find and employ workers of necessary skills as well as to convince potential customers of the importance and the usefulness of the new service or product. Moreover, the administrative procedures to register their projects and their innovation in the intellectual property rights remain complicated and require high related costs.
- **Political and economical instability** in the region together with global pandemic crisis imposes even more restrictions and brings even more challenges.

Conclusion and Policy Recommendation

The role of a small- and medium-size enterprises (SMEs), particularly taking a form of a social enterprise (SE), is crucial as the start-ups of this type focus on applying business strategies to foster social and environmental well-being. Meanwhile, SEs face a multitude of challenges, from lack of support in the society and legal framework imperfections to insufficient financial resources that limit the increase in size and operations.

A wide range of socio-economic and political problems in the region puts more pressure on *bottom-up approach* as targeting local authorities and other economic actors such as population, venture capital funds or NGO first. At the same time, the success of this strategy requires particular policies to be implemented and developed.

Some of the recommendations could include the following.

First, it is crucial to establish an ***environmentally-friendly ecosystem*** where all actors - consumers, producers, local authorities, - are aware of ecological threats and appreciate the initiatives that allow to diminish this negative impact. The understanding of GreenTech start-ups as a mean to address a wide range of socio-economic problems should be also well developed. For example, raising awareness on the relationship between GreenTech and youth employment and GreenTech and female participation in the workforce is needed. This is particularly relevant as the market of environmental technologies is not saturated and contains many possibilities for successful niche strategies, it creates opportunities for youth who can apply their entrepreneurial potential locally without having to rely on big investments.

Second, to facilitate these activities, ***the demand should be prepared to accept these initiatives.*** Such means as introducing environmental problems in public discussion focusing on the existing threats and success stories as well as implementation of green consuming strategies of public institutes (reducing waste, purchasing green goods, etc.) can be seen as relatively simple but efficient first steps. One of the particularly promising instruments is ***Green Public Procurement (GPP)***. GPP is defined by the European Commission as "a process whereby public authorities seek to procure goods, services and works with a reduced environmental impact throughout their life cycle when compared to goods, services and works with the same primary function that would otherwise be procured". It is a voluntary instrument that pulls producers towards greening of the production process indirectly through market demand shaping at the same time the public strategy and the strategy of producers as well as

influencing the consumer behaviour. According to the OECD estimation, public purchasing accounts for around 18% of GDP within the Middle East and North Africa region. Turning this share into green purchasing has a significant potential to influence markets, industries, and consumer behaviour.

Third, it is necessary to create a ***dedicated registration pathway*** clarifying the development of SEs and minimising corresponding transaction costs. It is particularly important to simplify this process providing all recommendations, informational support, and guidance for green entrepreneurs. Reduced costs of registration as well as tax exemptions should be also considered.

Fourth, the government is required to provide ***necessary signals to educational system*** strengthening the university courses and training programmes aiming to strengthen environmentally-relevant skills. Among the skills necessary for successful development of GreenTech start-ups, the availability of financial and scientific management are mentioned in the first place. For example, wide introduction of **Extended Producer Responsibility and Circular Economy** concepts in the management and business study programs can have a widespread positive effect all over the region. The OECD defines *Extended Producer Responsibility* (EPR) as a policy approach under which producers are given a significant responsibility for the treatment or disposal of post-consumer products. EPR can provide incentives for waste management and recycling policy promoting the environmentally-friendly technologies and design. And the European Commission defines *Circular Economy* s "a model of production and consumption which involves sharing, leasing, reusing, repairing, refurbishing and recycling existing materials and products as long as possible". It tackles a wide range of global ecological threats such as climate change, biodiversity loss, waste, and pollution influencing both a demand- and supply-side of the market in order to improve the behavioural strategies. Both initiatives can adjust the business philosophy in the South Med region that together with increasing eco-awareness of consumers can create an environmentally-friendly ecosystem favouring GreenTech start-ups. Also, the procedure for recruiting experts should be adapted to the needs of SEs becoming more flexible and efficient.

Fifth, even if NGOs or venture capital funding remains a possible source of financial support of GreenTech start-ups, ***the system of public financial aid*** should be redesigned to grant SEs the access to the long-term funding. This instrument though being important might be not available in the nearest future due to lack of public funding in the presence of a wide range of socio-economic problems. As a preliminary solution, only certain industries could be chosen as a priority taking into account the deepness and danger of existing environmental problem in a particular country. Moreover, with the increase of environmental awareness of population potential investors may get more interested in providing financial support to GreenTech start-ups.

All above mention approaches are able to shape the public policy as well as to signal producers and consumers the importance of environmentally-friendly behaviour facilitating the creation of GreenTech start-ups and benefiting the bottom-up approach in the South Med region.

Entrepreneurs who participated in this study

FabricAID – Omar Itani

Omar Itani is the general manager of FabricAID. Itani is the winner of numerous competitions including the prestigious Global Social Venture Competition (GSVC) in 2018 which helped develop FabricAID into the scale and shape it occupies today. He won the Denis Pietton Award by the French Institute in 2018 as the most distinguished young social entrepreneur from the Arab World and was awarded Young Champion of the Earth for West Asia in 2019 by the United Nations for his work in fabric waste reduction – the highest award given by the UN for individuals under the age of 30. Business savvy and social by nature, Itani has succeeded in growing FabricAID from a seed idea into a full-blown company, putting his problem-solving skills to good use.

Smart Detection – Manel Elleuchi

Manel Elleuchi is a project manager at CRNS and a Doctor at ENIS. She has received a Ph.D. in computer systems engineering in December 2017. She has received the Engineering degree, from ENIS, Tunisia in 2009 and the Master degree in New Technologies of Dedicated Computer Systems, in 2012

LiveLoveRecycle – Georges Bitar

Georges Bitar is the founder of the social enterprise LiveLoveRecycle that was launched in 2015 along with the waste crisis Lebanon was facing. His aim is to make recycling easier by digitizing the waste management (LiveLoveRecycle's Application) while creating jobs for people in need.

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