

# WORDOFTHE **PRESIDENT**

#### Nobel Peace Prize for Reforestation... Is it a reflection of our times or an alarm?

In 2004, the Nobel Peace Prize was awarded to Wangari Maathai for having planted 30 million trees! While in the 20th century nature conservation made significant progress on setting up a global network for protected areas, we hope that the 21st century will be the era of forest restoration. The fact that, for the first time, this highly esteemed prize, which has long been associated with political feats, had been awarded to an environmental achievement is in itself a major and remarkable accomplishment for the future of human civilization.

It is a comfort but also a challenge for us and for Lebanon to see that such a success in forest restoration is possible and can be highly rewarded, in addition to the self-satisfaction of seeing our country become once again *Lebnan el akhdar*...

Too much damage has already been done for us to afford to ignore our declining forest resources. If we wait until tomorrow to restore forests, it will be too late. If too little is left, it will take longer, and will be more difficult and will cost much more to begin restoring a healthy forest... and it may also be too late...

At Jouzour Loubnan we are aware of this urgency and we invite practitioners, researchers, decision makers and the civil society at large to join us in saving our forests: as the Nobel Committee has noted, "too many wars are fought over dwindling resources. If we do not do something about it, this may well be the new security scourge jeopardizing our future and that of our children".

**Raoul Nehmé** 



# AND WE SAY THANK YOU!



It was obvious to all of us that preserving the trees is the answer to ensure the oxygen supply for future generations, starting with our own children and grandchildren.

We were determined to start militating for this purpose; luckily, we got to meet Jouzour Loubnan's members ... and the story began.



Since then, year after year, our group puts all its energy, determination, knowhow, contacts and resources to help Jouzour Loubnan raise funds in order to plant... and plant... and plant...



Confucius once said:



"If you think in terms of a year, plant a seed: If in terms of ten years, plant trees: If in terms of 100 years, teach the people."

Jouzour Loubnan plans for a year and plants seeds Jouzour Loubnan plans for decades and plants trees Jouzour Loubnan plans for hundreds of years and creates awareness to educate people

We can proudly say:



« Together, we plant tomorrow's forests »

Claude, Denise, Maha, Nada and Zeina

# OUR FRIENDS' TESTIMONIALS





#### Khalil Harfouche President of the Union of Jezzine Municipalities

In this dark tunnel we're living in... a light spark... Jouzour Loubnan among other NGOs is going against the current. With Jouzour Loubnan, we are trying to bring back the cedars to the South (Jezzine) by planting more than 30,000 trees!

With Jouzour Loubnan we are planting not only trees, but a new culture by engaging the society with us and spreading a "Green spirit" among its members...

We will never lose hope! We will keep fighting until we reach our objective: A green and clean Lebanon ...



**Jean Akiki** Mayor of Kfardebiane

ان سعي جذور لبنان لإعادة زرع الجمال في سفوح جرودنا أيقظ فينا نحن المسؤولين عن بلدتنا احترام هذا

الجمال والمحافظة عليه وإعادة الثقة بأرضنا المعطاء والإفادة من جمال تشجيرها والمردود الإيجابي الذي تعود به الشجرة على الصحة العامة وعلى المناخ وعلى الإنتاجية الفردية في نطاقنا البلدي وفي المنطقة عامة.

والبيئة اللبنانية التي يتباكى عليها من يدعون حمايتها وهم يمعنون في تشويها ولم تجد هذه البيئة من يعمل جاهداً في سبيل احيائها وانعاشها سوى جذور لبنان الجمعية اللبنانية الاصلية فصدى عملها بات يتردد سياحة بيئية ناشطة ومفيدة على بلدتنا الى ما خلقه مشروعها في جرودنا من فرص عمل متنوعة وعديدة يفيد منها ابناؤنا وأهلنا فينعكس ذلك رخاءً ورفعةً لمستوى حياتهم الفردية والاجتماعية.

الى ذلك فان الانعكاسات الإيجابية لمشروع حملات جذور لبنان بتشجير جبالنا في كفردبيان في نفوس أهلنا وتفاعلهم المسؤول معها أحيا فيهم العاطفة الوطنية والتعلق بجمال وطنهم وأصالتهم المتجذرة كالأرز في جروده والنابعة من صلابة ايمانهم بذرات ترابه المقدس.

ان جذور لبنان غدت الأمل لإعادة لبنان الأخضر فتفاعل المجتمع الأهلي معها ايجابياً حتى اخر حدقات الاعجاب وأسمى درجات الالتزام.



Roger Akiki Site supervisor in Kfardebiane

امتازت تجربتي المهنية مع جمعية جذور لبنان فهي والحق يقال بأنها تجربة رائعة وعمل مثمر وراحة نفسية وتعامل المسؤولين معي ومع سائر العمال كتعامل افراد الاسرة الواحدة بالتضامن والشعور الإنساني وتفهم لحاجاتنا ومطالبنا والأهم التقدير الذي نلمسه من كلام المسؤولين وعيونهم الساهرة على استمرارية نجاحهم وتقدير جهودنا لأن في النهاية استمرارية عملنا وكفاحنا هي ثمرة جهدنا وثمرة تضحياتهم وتفانيهم. واليوم والأمس وفي الغد نجاحهم وكفاحهم وإيانهم بأهداف جمعيتهم من أهدافنا المشتركة.



#### Sayed Morkos Site supervisor in Ehden

كان اللقاء الأول مع جمعية جذور لبنان سنة ٢٠١١ من خلال مشروع تشجير في منطقة «مقبل الضهر» في أعالي محمية اهدن بالتعاون مع اللجنة المختصة وبلديات زغرتا واهدن وقد تم حشد مجموعة من الشباب والشابات لهذه الغاية وكنت المسؤول عن استمرارية عمل المشروع ورعايته.

فيما كانت جمعية جذور لبنان تواكب تطور العمل من خلال زيارات متواصلة للموقع فتجدر الإشارة الى ان التعاون مع الجمعية مبني على الثقة المتبادلة والاحترام مع الحث على الاهتمام الأشجار لتأمين نموها بشكل سليم واستفدنا من الخبرات خصوصاً وجود شخصاً مثل د.ماجدة خراط والخبراء المحليين والأجانب.

أرجو دوام هذا التعاون في المستقبل وتطويره نحو الأفضل لكي نستطيع تحويل المساحات الجرداء الى مناطق خضراء تضج بالحياة.



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Jouzour Loubnan is a NGO established since 2008 (registration number 491) whose mission is to participate in the restoration of Lebanese woodland and promote sustainable forestation mainly in arid regions. Jouzour Loubnan also focuses on **empowering local communities** to protect, manage, and benefit from the plantation projects and promotes environmental awareness of natural resources amongst younger generations. To date (2015), Jouzour Loubnan has planted irrigated and protected more than 200.000 trees across the Lebanese territory

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**1** Jouzour.loubnan

🖸 JouzourLoubnan

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As responsible corporate citizens, we understand that our activities have important and direct consequences on our community that is why we are committed to sustainable development with the aim of making a difference in four areas: **Our Business, Our People, Our Environment and Our Community.** 



# MEET THE **TEAM**



**RAOUL NEHMÉ |** PRESIDENT **Profession:** General Manager, Holding M. Sehnaoui **Education:** Ecole Polytechnique de Paris & Ecole des Mines de Paris



#### MAGDA BOU DAGHER KHARRAT | VICE PRESIDENT Profession: Head of Life & Earth department, Faculty of Science, Saint Joseph University Education: PhD in plant molecular biology, Université Pierre et Marie Curie, HDR, Université Paris - Sud



HANI HOYEK | ACCOUNTING Profession: Strategic Development, BLC Bank Education: Grande Ecole de Commerce EM Lyon



HIBA ABOULHOSN | COMMUNICATION & MEDIA Profession: Communication and PR Consultant, Partner, 'Keep it simple' communications agency Education: Masters in Communication, Edinburgh University



RAMI KOZHAYA | PROJECT MANAGEMENT Profession: Quality Control and Assurance, Audi Bank Education: MBA - Management of Financial institutions, USJ - Sorbonne - Paris Dauphine



JOELLE SAAB | PROJECT MANAGER Education: Environmental Sciences & Management, St. Joseph University



**RIAD MOUAWAD |** ART DIRECTOR **Profession:** Creative Director & Partner, BlackInk - visual communication **Education:** Notre Dame University, Graphic Design



**FARID MAALOUF |** ENGINEER CONSULTANT **Profession:** Metcon United, General Manager **Education:** Civil Engineer, ESIB



TONY CHAHINE | SITE CONTROLLER Education: MS Agricultural Engineering, Lebanese University.



GHADA ZEAITER | TREASURER Profession: Executive assistant, BLC Bank



CHARLES EL HAGE | MEMBER Profession: Retired as Senior Vice-president with Booz & Company Education: Masters of Science in Industrial Engineering & Bachelor Industrial Management, Purdue University, Indiana, USA.



**FREDERIC KHALIL |** MEMBER Profession: Partner, BEAR Education: MBA, Université St Joseph & Paris Dauphine



FADI NASSIF | GENERAL SECRETARY

# JOUZOUR LOUBNAN'S **MISSION**

OUR MISSION IS TO PARTICIPATE IN THE RESTORATION OF LEBANESE WOODLAND AND PROMOTE SUSTAINABLE REFORESTATION MAINLY IN ARID REGIONS.

We have chosen to intervene mainly in arid mountainous regions as, on one hand, they are very often dismissed in exiting reforestation programs and, on the other hand, the benefits of such reforestation are tremendous.

The success of our reforestation campaigns resides in our commitment to ensure the appropriate irrigation, guardianship and protection of the trees we plant. This success can be difficult to achieve, more so in arid regions due to extreme weather conditions, lack of surface water, poor soil quality and overgrazing. In order to overcome the issues at hand, we devised a special program taking into account, for each region, all technical and socio-economic aspects related to such complex environments.

#### AS A RESULT, JOUZOUR LOUBNAN HAS THREE INTERCONNECTED GOALS:



PLANT MAINLY IN ARID REGIONS Increase the woodland area in Lebanon by planting indigenous species to restore degraded high mountain ecosystems and develop wildlife habitats.



**EMPOWER LOCAL COMMUNITIES** Empower the local community to protect, manage, promote and benefit from the projects.



**PROMOTE ENVIRONMENTAL AWARENESS** Promote environmental awareness of our natural resources amongst younger generations, locals and officials.

## WE DO NOT PLANT TREES, WE PLANT CHANGE & POSSIBILITIES."

700



101



#### ABOUT AZADEA FOUNDATION:

Founded in 2011, Azadea Foundation is an NGO managed, financed and sponsored exclusively by Azadea Group Board Members and Employees. Its vision is to be the leading regional Foundation in creating and restoring green spaces in cooperation with international organizations, NGOs and governmental agencies.

Azadea Foundation has hosted four plantation days with Jouzour Loubnan to date, planting over 10,000 trees in the woodlands of Lebanon with the help of over 800 employees, their family members and representatives from local Media. It has also restored the historical 22,000 square meter President René Mouawad, Sanayeh Garden and is committed to maintaining it for a period of 10 years. With an endless dream to reforest Lebanon, the Foundation is taking lead this year to impact young generations by spreading environmental awareness and education, in the hopes of slowly changing their daily habits. So far the Foundation has engaged with over 20,000 children through malls, schools and custom-made initiatives tackling contemporary environmental topics.





WWW.AZADEA.COM/AZADEAFOLINDATION

# INCREASE THE WOODLAND AREA

# JOUZOUR LOUBNAN ACHIEVEMENTS

SINCE 2008...

## WE'VE PLANTED 225,000 TREES

FROM 30 NATIVE SPECIES

ON MORE THAN 3 MILLION SQUARE METERS, I.E. 300 HECTARES,

IN 19 DIFFERENT REGIONS OF LEBANON,

#### WITH THE ASSISTANCE OF

OVER 10,000 VOLUNTEERS,

THE LEBANESE ARMY AND UNIFIL SOLDIERS AND OFFICERS

#### WE'VE EFFICIENTLY ORGANIZED

OVER 70 AWARENESS SESSIONS

FOR MORE THAN 10,000 STUDENTS, SCOUTS AND YOUTH CLUBS

#### WE'VE ACTIVELY PARTICIPATED

IN DOZENS OF FAIRS AND EXHIBITIONS,

SEVERAL WORKSHOPS AND SEMINARS

COUNTLESS LOCAL TV AND RADIO PROGRAMS.

#### WE'VE LAUNCHED 5 NATIONAL MASSIVE AWARENESS MEDIA CAMPAIGNS ON

6 LOCAL TV STATIONS,

**6 RADIO STATIONS,** 

AND HUNDREDS OF BILLBOARDS, UNIPOLES, ETC.

#### WE'VE HAD NUMEROUS ARTICLES PUBLISHED IN SEVERAL

LOCAL NEWSPAPERS AND MAGAZINES.

#### WE'VE ORGANIZED 5 SUCCESSFUL FUNDRAISING DINERS

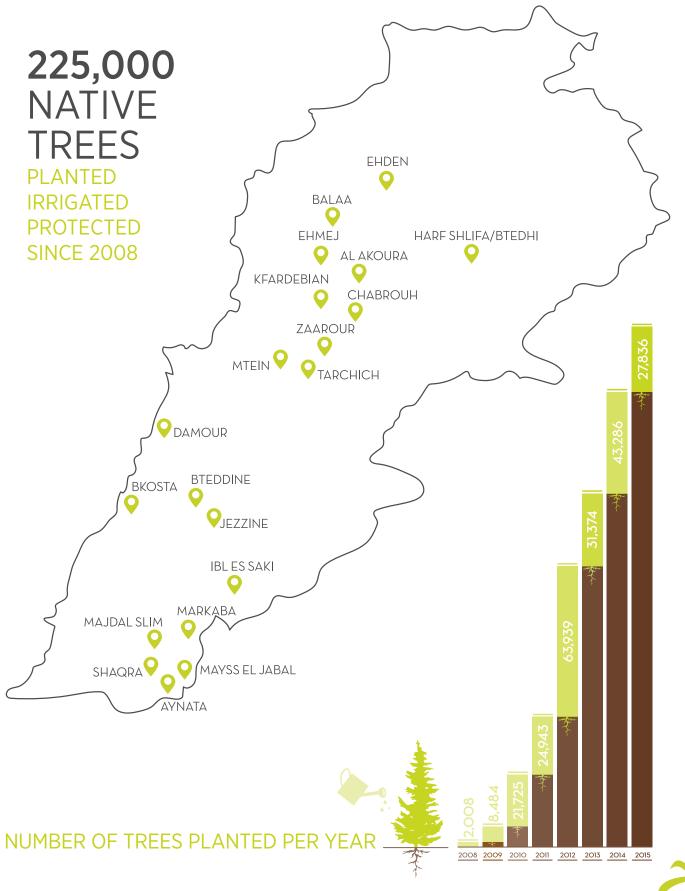
BRINGING TOGETHER ALL OUR FRIENDS AND SUPPORTERS

#### WE'VE INITIATED GREEN PROGRAMS

FOR REAL ESTATE DEVELOPERS AND CAR DEALERS

ALL OF THIS WAS MADE POSSIBLE BY 14 JOUZOUR LOUBNAN DEDICATED MEMBERS AND MORE THAN 100 DONORS ...

# EXPLORE OUR **PLANTATION SITES**



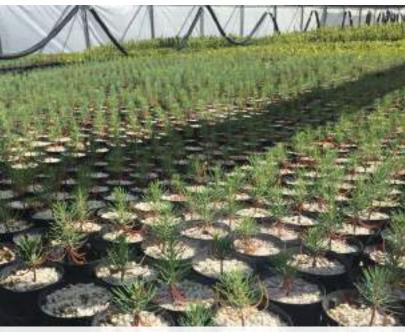
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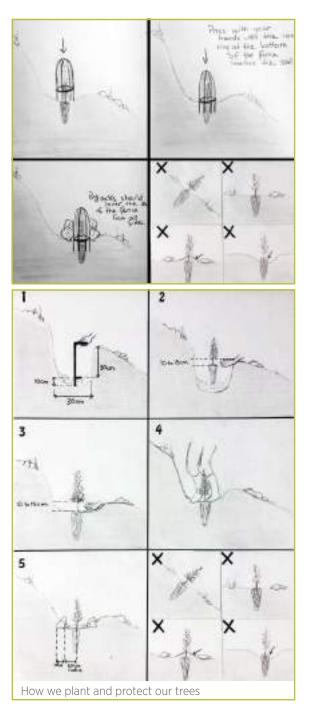
Small and big individual fencing

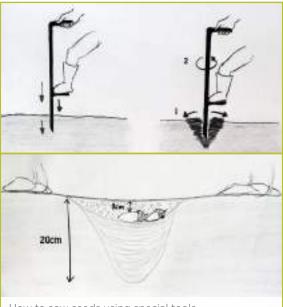


Drip irrigation system



Native seedlings matching required specs





How to sow seeds using special tools

# PLANTATION METHODOLOGY OPTIMIZATION

In order to ensure the long term tree survival, we have defined a comprehensive program based both on scientific grounds, thanks to our partnership with Saint Joseph University, Faculty of cience and, on empiric approaches, due to the lack of prior experience we have in the forestation of some of our plantation areas.

#### In our standard reforestation program:

- We plant one year seedlings on municipal lands based on a contractual commitment from the municipality to protect the forested area.
- We choose the species amongst the native trees in accordance with the studied ecosystem of the targeted region. In addition, we strive to enhance biodiversity through the choice of various native species including shrubs and small plants well adapted to the local environment and its constraints.
- In regions with overgrazing, we fence the area to be planted.
- We purchase the trees from selected local nurseries and for some species like *Cedrus libani* and *Juniperus excelsa* we perform genetic analysis in order to guarantee their origin.
- We apply plantation protocols insuring optimal survival rate after plantation. Professional supervision is provided for each forestation campaign for as many years as needed.
- We install an irrigation system and insure regular watering and guardianship through local personnel for a period of 3 years. This increases the awareness amongst the local community. The watering frequency is decreased progressively every year.
- We control on a regular basis the status of the trees we have planted, the quality of the maintenance and the irrigation and guardianship services.

### This approach has proven to be effective but has faced two serious challenges:

- On one hand, the cost of this approach is too high vis-à-vis large scale reforestation campaigns,
- On the other hand, sheperds are breaking our fences open and allowing their herds to graze in the reforested area causing major damage,

By fencing large areas, weeds are growing and creating serious fire hazard and as such, large areas we have reforested have been damaged by fire mainly due to human negligence.

As a consequence, we have started in 2013 extensive research programs in order to optimize our plantation techniques through (1) seed sowing in shades of nurse plants, (2) individual fencing, (3) plantation without irrigation and (4) plantation of bare root seedlings.

So far, the seed sowing has proven to be effective in Damour but not on high elevation sites where additional tests are required, individual fencing as well as plantation without irrigation has obtained positive results that still need to be confirmed in the coming years, and the plantation of bare root seedlings have proven quite ineffective.

Initial results are encouraging but not yet statistically significant: We will strive to continue our R&D efforts in order to find more efficient plantation protocols and share them with all entities involved in reforestation in Lebanon.



Local community installing the fences around newly planted seedlings





Seedlings protected by individual fencing



Crataegus Azarolus



Our plantation site covered with snow



The making of the individual fences



Excavator digging holes



Seed markers polishing



Hand digging

# JEZZINE REFORESTATION PROJECT

This project is executed in partnership with the Ministry of Agriculture within the framework of the 40 million tree program, under the EU Agriculture and Rural Development Program (ARDP) and is financed by the EU and Jouzour Loubnan.

Jouzour Loubnan has selected for this project Toumet Niha in Jezzine, one of the regions most affected by deforestation in Lebanon. It constitutes a high potential ground to accomplish a multi-purpose reforestation initiative in line with the 40 million trees program launched by the Lebanese Government in December 2012, and steered by the Ministry of Agriculture in order to plant 40 million forest trees in public lands within the next 20 years.

After several months of preparation, we were able to start our work on the ground in the fall of 2015.

Five public plantation campaigns took place between October and November 2015, bringing together more than 300 volunteers, mainly from schools and clubs of the regions and Jouzour Loubnan supporters. The involvement of the local community was remarkable in this region and the cooperation of the municipality was exceptional.

Before the snow paused our work for the year 2015, we were able to sow 3,000 seeds and plant 17,502 native seedlings with individual fencing. The total area planted so far is 36 hectares and the remaining parcel of land will be planted in the 2016 fall season.



Students participation to our public plantations









# CORPORATE Social responsibility

We are all concerned by the fast reduction of native woodlands areas in Lebanon. Thus, each of us can contribute to the reforestation effort. You can help our mission and support our activities first and foremost by contributing financially or by taking part in our fundraising annual gala dinner. Yet, besides donations, you have a wide array of possibilities and opportunities to join us in saving Lebanon's forests and green surface.

#### ARE YOU A PRIVATE COMPANY AND WANT TO REDUCE YOUR ENVIRONMENTAL FOOTPRINT?

You can organize a planting campaign for the employees of your company and their families or even your clients or suppliers. These corporate events have been extremely appreciated by the companies to date. Typically, you arrive on the prepared site in the morning and after a short training, the campaign starts under the supervision of Jouzour Loubnan team assisted by professionals. It lasts for 2 to 3 hours after which, tired but happy, you would gather around a corporate lunch. It is an exciting team building event, and an awareness experience for all participants about the importance of protecting and developing our woodland heritage.





# GREEN **Programs**

#### ARE YOU IN THE REAL ESTATE DEVELOPMENT FIELD?

You can join Jouzour Loubnan Real Estate Reforestation Program: "1m<sup>2</sup> of newly created forest for each m<sup>2</sup> built" for a marginal cost of 2\$/m<sup>2</sup> that can be shared with the acquirer. This program allows you to promote your environmental awareness image and can be used in all of your marketing and sales strategies and promotional materials. A certificate will be provided for each of your clients and your project will be referenced in all of our publications. on our website and our social networks. You may have as well free advertising in our annual magazine.



#### ARE YOU A CAR DEALER / CAR RE-SELLER?

You can ioin Jouzour Loubnan Car **Dealers Reforestation Program:** "one tree planted for each new car sold". Practically this will range from \$10 to \$50 per car sold (depending on the horse power) which covers the cost of 1 up to 5 trees including 3-year irrigation, maintenance and guardianship. This program allows you to promote your environmental awareness image and can be used in all of your marketing and sales strategies and promotional materials. A sticker will be co-designed and put on each car sold in order to promote this program and your project will be referenced in all of our publications, on our website and our social networks. You may have as well free advertising in our annual magazine.



#### ARE YOU A MEDIA, PR OR ADVERTISING COMPANY?

You can support our cause by offering us free ad spaces for our annual awareness campaigns or by covering our activities and spreading the news to the mass public on different media portals. Are you socially or politically active or a key opinion leader? You may assist in the political awakening of the Lebanese Government and its commitment to implement a serious plan in the regulatory field in the application of the law, in the protection and development of our woodland heritage.



We cannot forget that the fight for forestation is a worldwide fight, each of us can participate by already protecting our existing forest, but also by using recycled or certified paper, i.e. paper produced from sustainable forests. You can also contribute by simply using both sides of the papers and recycling them afterword. Not only will you play an active role in the protection of the worldwide woodland heritage, but mainly your return on investment will be less than 3 years.





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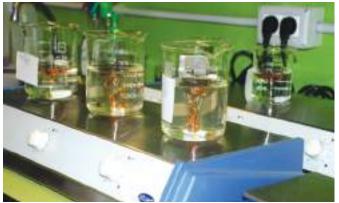
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# PLANT WITH ASCIENTIFIC BACKGROUND













# ENTER INTO OUR LABORATORY



Jouzour Loubnan in partnership with Saint Joseph University

#### CONTEXT

The regeneration and management of woodlands in the Mediterranean needs particular attention: the role of plant cover is essential for mitigating desertification processes.

Reforestation is often limited to a narrow number of species which are easy to grow in nurseries. This practice greatly reduces levels of biodiversity and it is even more worrisome with regards to shrubs and minor hardwood which are the greater part of the Mediterranean woody flora.

Beside cedars and juniper, many other trees of economic and/or of ecological interest are present in Lebanese mountains. Restoring these ecosystems requires the use of dozens of plant species to rebuild strong and resilient ecosystems. Recent international research results highlighted the positive effects of biodiversity.

Unfortunately, there are few nurseries producing Lebanese native species. Learning how to propagate these 'new' plants properly, including those deserving a wider use as drought-tolerant, can be a great challenge as well as a powerful tool to combat desertification and enhance biodiversity.

In this context, Jouzour Loubnan took the initiative in 2009 of creating the LABORATORY FOR SEED GERMINATION AND CONSERVATION (LSCG) in parternship with the Faculty of Sciences of Saint Joseph University.

Our Laboratory is located at the Campus of Science and Technology (CST) of Saint Joseph University (USJ), Mar Roukoz, under the direction of Pr. Magda Bou Dagher Kharrat and the operation of the scientific coordinator Joelle Saab and the technical assistant Ramy Sakr.



#### ACHIEVEMENTS

To date, 300 different Lebanese native species were harvested in the wild according to predefined scientific protocols respecting a minimal number of plants and a minimum distance between contributing plants.

Seeds were then cleaned, measured, weighed, dried and stocked at 4°C:

- Germination protocols were defined for 50 different species.
- More than 1,000 small seedlings, grown in our germination room belonging to different native species, were transferred to a nursery in Bejjeh, Jbeil to be used in our future campaigns near this region.
- More than 200 seedlings, grown in our germination room belonging to Juniperus, Cedrus, Abies, Quercus, were transferred to a nursery in Kfardebian to be used in our future campaigns in this region.
- More than 150 other seedling s were transferred to APJM (Association pour la Protection de Jabal Moussa) nurseries in accordance with our partnership agreement.
- Bulbs and rhizomes for more than 10 endemic or endangered species have been collected and stocked for ex-situ conservation as well as for a future botanic garden collection.

Moreover, before each plantation campaign with Cedrus libani or Juniperus excelsa trees, genetic tests were performed in the molecular biology laboratory of the Faculty of Science at Saint Joseph University to verify their Lebanese origin.





# District //S

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Camphorweed is native to the southern half of the United States and it was first introduced into the Middle East in 1975 south of the Lebanese border to stabilize mobile dunes; five grams of seed were sown on the coast of the Sea of Galilee and the same amount in the Plains of Sharon (60 km north of Tel Aviv). By 1999, camphorweed had spread widely to the surrounding coastal areas.

Camphorweed was first discovered in Lebanon near the northern entrance of Tyre Coast Nature Reserve (TCNR) in 2008, by the chemical engineer Mounir Bou Hamdan. In 2011, camphorweed had not yet become widespread in the reserve, but by 2015 the infestation had increased dramatically.



Invasive vs. native species in Tyre



Eradicating Heterotheca subaxillaris in Tyre Coast Nature Reserve

## ACTIVITY 7 INVASION AND MANAGEMENT OF HETEROTHECA SUBAXILLARIS IN TYRE COAST NATURE RESERVE.

In recent years, camphorweed (Heterotheca subaxillaris) has been documented in the Tyre Coast Nature Reserve and is aggressively encroaching on endemic native species and sensitive habitat. This article highlights the history of its establishment in Lebanon and efforts to control it in the reserve.

Camphorweed has a dual germination strategy, an adaptation commonly seen in plants adapted to unstable environments such as shifting sand dunes. The achenes of disk flowers germinate immediately whereas the achenes of ray flowers remain dormant for a year or more until conditions are favorable for germination. In the TCNR we observed blooming times and growth forms that may be different than those found in United States, for example camphorweed actively blooms during the winter months, from November to March. New rosettes are also formed during this time, presumably emerging from newly disseminated achenes of the disk flowers, or from achenes of the ray flowers that had been dormant in the soil from the previous year. The rosettes remain relatively small during the summer drought, and when the winter rains come again they bolt, flower, and set seed. If not controlled, then a year after the first flowering camphorweed resprouts from the center of the original rootstock, with dead branches remaining on the outer perimeter. These mature plants are robust, with aboveground growth over 50 cm in diameter and about 50 cm tall, a woody central stem about 7 cm in diameter at the base, and a woody tap-root over 50 cm long. It is not yet known whether these large individuals are 2nd generation, 3rd generation, or older. By 2015, portions of the reserve were comprised of solid thickets of mature camphorweed with very little understory.

In 2015, a team from Saint Joseph University in Beirut, under the direction of Dr. Magda Bou Dagher Kharrat and within the framework of , assessed the invasiveness of this species and undertook a campaign to remove it by manually by uprooting the plants on the borders of the distribution area and burning them avoiding seed dispersal. Rosettes and young plants with stems about 1 cm in diameter were easily hand-pulled, but mature plants had to be excavated with shovels or pick axes. Employees of the TCNR continued this work in 2015 and 2016. Within the conservation zone, soils and habitat types were compared between the area that was infested and the non-infested areas; there was no discernable difference between these two areas, implying that the noninfested area is vulnerable to invasion unless prevention measures are taken. Aside from ecological impacts, unless camphorweed is effectively controlled it may directly impact the livelihoods of local farmers who depend on the southern zone of the TNCR for agriculture.

We revisited the site in March of 2016 and made several observations. Camphorweed has spread and is overtopping species of concern such as Beirut milk-vetch (Astragalus berytheus). Camphorweed distribution maps will be updated in 2016 to determine the revised extent of the infestation. Although camphorweed typically grows in sandy, excessively well drained soils, in 2016 it was also found invading wetland depressions dominated by white sugarcane grass (Saccharum spontaneum subspp. *aegyptiacum*). This may be another example of how noxious weeds adapt and expand into to new habitats in a manner atypical than that of their native land. On a more encouraging note, we observed that some areas, which were controlled by handpulling and/or excavation of roots in 2015, remained relatively free of camphorweed in 2016 compared to adjacent areas that were not treated. When handpulling plants in 2016 we found that it is very difficult to get 100% of the root without a small portion of the fine roots breaking off. The fact that the areas treated in 2015 were in better condition than untreated areas may imply that new plants are not sprouting from root fragments, but more research is needed to substantiate this claim.

An initial management plan for control of camphorweed in the TCNR will be completed in 2016. At a minimum a map will be created documenting the new extent of the infestation, and attempt will be made to completely eradicate camphorweed that has invaded the region.



# ACTIVITY 2 INAUGURATION OF EL DICHAR NATURAL SITE FOR ENDEMIC SPECIES IRIS SOFARANA IN EHMEJ



Under the patronage of the Ministry of Environment, Mohammad al-Machnouk, and with the cooperation of the Ehmej Development Association, the Faculty of Sciences of the Saint-Joseph University (USJ) and the municipality of Ehmej inaugurated the natural site of El-Dichar on the Sunday 24th May 2015. The project Determination of Important Areas for Plants and Creation of Micro-Reserves to Conserve Rare or Endemic Species in Lebanon was funded (grant number 63257) by the Critical Ecosystem Partnership Fund (CEPF) which is a global program providing funds to non-governmental organisations to help protect biodiversity hotspots, Earth's most biologically rich yet threatened areas. The project and the studies on the flora were directed by Doctor Magda Bou Dagher Kharrat who serves as Director of the Faculty of Science's Department of Life and Earth Sciences at USJ.

#### The natural site of El-Dichar

More than 62 hectares of public lands were offered to make a sanctuary for Nature. The site of El Dichar was initially intended to be a Plant Micro-Reserve (PMR) as it aims firstly at protecting a rare endemic species. However it was officially declared (Decree number 2878) under the designation of "natural site" as it suited more the national legislation for protected areas and was easier to implement. The natural site is divided into two parts due to the tangle of private and public lands that do not form a continuous area. Anyhow the very located population of Iris sofarana was finally recognised nationally. By protecting the natural habitats of this iris, the habitats of other animal and plant species associated to it are also being conserved.

It is by no means a coincidence that the very rare and endangered endemic Iris sofarana has taken up residence in the calm valley of El Dichar in Ehmej. Located in the Jbeil district in Lebanon, Ehmej is a mountain village connected to Nature that places great importance on the conservation of its natural patrimony. It was granted with an amazing biodiversity and until now, many forests, valleys and slopes remain well preserved.

The rocky slopes under the summit of El Wata, at an altitude ranging between 1650 to 1800 meters and partly covered by a small forest of iron oak (*Quercus cerris*), constitute the natural habitats of El-Dichar with a high diversity of plant species. More than twenty species of tree can be found, mostly deciduous, with species of oaks (*Quercus calliprinos, Quercus infectoria*), maples (*Acer tauricolum, Acer hermoneum*) and whitebeams (*Sorbus flabellifolia, Sorbus torminalis*), but also some evergreen tree species of junipers (*Juniperus oxycedrus, Juniperus excelsa*).

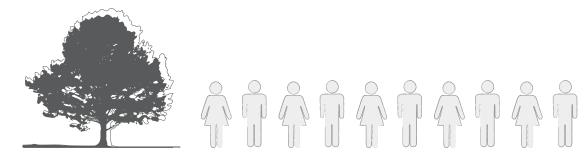
*Iris sofarana* is an endemic species of Mount Lebanon, which means it only naturally occurs in this area. It was first described in 1889 by Sir Michael Foster, an English physiologist, with specimens collected around the village of Sofar. Two forms within this species, the forma kasruwana and forma westii, were described later and differ mainly in size. Besides being an endemic, Iris sofarana is a rare species known from only seven localities in Lebanon, such as Faraya, Dahr el-Baidar and Sofar.

The species is part of the tribe of the Oncocyclus, a group of irises exclusive to the mountainous or arid regions of the Middle East, in an area extending eastward from Turkey to Iran, and southward from the Caucasus to Jordan. The life span of these irises is very short and lasts for a mere four to five days. Contrary to other plant species that have a long flowering period and that are pollinated by many types of insects, Iris sofarana has a low seed production, and therefore a low reproduction rate.

Four other Oncocyclus species are present in Lebanon: *Iris antilibanotica, I.bismarckiana, I.cedretii, I.lortetii.* All these species, including Iris sofarana, are endangered in the wild, which means they have a high risk of extinction in the near future according to the conservation status of the International Union for Conservation of Nature (IUCN). Many threats compromise the durability of the species. Housing and roads construction are the most important threats as they destroy natural habitats, fragment them into isolated patches and prevent the movement of pollinators. With the creation of this protected area close to hiking trails and to the guesthouse of Arz Ehmej, the village gets more attractive to visitors in search of nature. The ecotourism benefits directly to locals and many of them have already banked on the sustainable development of their village. Twelve hiking trails were recently developed in Ehmej and connected to the Lebanon Mountain Trail (LMT). They allow the visitors to explore Ehmej but also to discover other incredible spots in the surroundings of Ehmej, for example the natural site of Jaj Cedars, the Three Bridges Chasm of Balaa, Tannourine Cedars Forest Reserve or the Valley of Adonis.







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# ACTIVITY 3 GREAT MED LEBANON RESULTS

The GREAT Med project is funded by the European Union under the Cross-border Cooperation programme in the Mediterranean (ENPI CBC MED). The project deals with crucial environmental issues as biodiversity conservation, management and monitoring on Mediterranean coasts and focuses in particular on the design and implementation of an integrated strategy for the conservation of the coastal area based on ecological indicators and risk analysis. The main output of the project is a toolkit for assessing plant biodiversity and its vulnerability to potential hazards such as oil spills, HNS (Hazardous and Noxious Substances), urbanisation and tourism pressures. The risk assessment methodology is based on the combination of vulnerability and hazards.

In Lebanon, Saint Joseph University (USJ) team led by Pr Magda BOU DAGHER KHARRAT assessed the vulnerability of biodiversity to fragmentation as a main hazard in the coastal areas of Byblos and Beirut in order to highlight areas where conservation actions are a priority. The geographical coverage of the study area encompasses the coastal zones extending from Monsef in the north to Beirut international airport in the south.

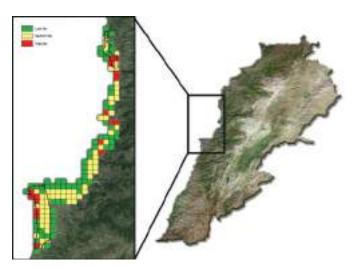
On the ground, the USJ team carried out field surveys to assess the biodiversity in coastal plant species, and developed maps for habitat fragmentation caused by urbanization (in collaboration with the National Council for Scientific Research) in order to calculate risk index on a cell level of 1x1 Km. The resulting habitat fragmentation risk index is shown in the map (below) and available on the GREAT Med website. The risk maps display risk according to three classes: red cells corresponds to the highest fragmentation risk, yellow cells for the intermediate risk and the green one corresponds to the lowest risk.



Matthiola crassifolia - grows only on Lebanese coast

The results show high habitat fragmentation risk in areas such as the old city of Byblos, Raoucheh, Ramlet Al Bayda, Jnah as well as the shore laying at the south of Beirut International airport. The high fragmentation risk in these areas can be explained by a high diversity of coastal plants, the presence of endemic plant species (species found only in Lebanon coasts) and/or natural habitats that are fragmented as a result of high urbanization levels. The cells with the red colour display areas where the development of conservation measures is a priority to preserve our natural heritage.

Environmentalists agree unanimously that preserving natural habitats is the most sustainable approach for the conservation of natural heritage and thus by designing protected areas. As defined by the International Union for the Conservation of Nature (IUCN), a protected area is a clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values.



In Lebanon, there are two marine protected areas: the Tyre Coastal reserve and the palm island (north of Tripoli) and recently the Dalieh area, where the endemic plant Mathiola crassifolia is found, has been declared as a natural site by the Ministry of Environment. Su ch initiative should be supported by the local stakeholders and replicated to the national scale.

Dr Rana El Zein







### مشروع «إيخوبلانت ميد» 'ECOPLANTMED'

استخدام النباتات المحليَّة من أجل إعادة تأهيل البيئة والتنمية المستدامة في منطقة البحر الأبيض المتوسط.

## دليل خاص بنشر بعض النباتات الخاصة بحوض البحر المتوسط







# ACTIVITY 4 ECOPLANTMED - SPECIES PROPAGATION MANUAL

The project ECOPLANTMED: "ECOlogical use of native PLANTs for environmental restoration and sustainable development in the MEDiterranean region" is a joint Mediterranean initiative based on the collaboration among seed banks, research institutes and institutions dealing with native plant conservation and management.

The objective of the species propagation manual is to improve the knowhow of the nursery sector, both public and private, about native plant species that are suitable for restoration ecology and gardening in the Mediterranean biogeographic region. The scientific results on seed germination obtained during the ECOPLANTMED project have been transferred into this manual in the form of easy-to-read protocols. The manual has focused in species which germination protocols were not published using seeds of local origin from the territories of the diverse ECOPLANTMED partners. In addition, standard of germination and plant propagation protocols for the most common Mediterranean species used in forestry and ecological restoration, have been included as an annex to complete the information provided. The manual also contains general recommendations for the collection and curation of seed lots.

This text is disposed for operations in seed germination laboratories, following simple and clear instructions, and trying to adapt them to the common procedures of nurseries that lack of specialized laboratories and infrastructures. We expect that the following methodologies can make easier the work of the diverse local nurseries with respect to propagation procedures for native plant species within their territories, as well as to encourage the use of national and international standards for seed collection, curation and storage.

This manual is also directed to those persons or enterprises interested in the subjects of ecological restoration, garden or landscape design and other engineering and architectural works which require the use of native plant species –such as nurseries owners and workers, public administrations, architects, engineers, seed bank technicians, researchers, and more generally all plant users within the Mediterranean Region. Particular attention is given to students, to whom we have tried to transfer, in simple terms, the research experience and results of experimentation undertaken by the Authors as well as the scientific literature available, with the objective of providing them with the most key elements of this field of study.

It is important to remember that the protection of biodiversity through conservation of genetic resources is not always reserved to public administrations, researchers and academics. The halt of the loss of plant diversity in the Mediterranean, can also be enhanced by the wide public and diverse professional sectors. The promotion of the use of native plant species of local origin in habitat restoration, landscape design and gardening, not only can contribute to stop the expansion of invasive exotic plants, but also to lead the expansion of a sustainable development model. The manual is structured into two main chapters. The first chapter is an introduction that presents to the reader the variety of habitats within the Mediterranean Basin, explains the dangers in the use of exotic plant species as well as the advantages of using native ones, describes the commonly used methodologies for seed collection, its handling, storage and conservation, and the basic scientific and technical background needed to understand the diverse protocols used for seed germination. The actions described in the manual refer to the management and germination of modest quantities of seeds; however it does not exclude the possibility of adapting the manual to larger quantities that may entail the use of mechanically operated techniques available in the cited literature.

The second chapter, which is also the main block of this manual, is a collection of cards for selected Mediterranean native plant species presented with a simple and very graphic format, which have been prepared by the diverse partners of the ECOPLANTMED project according to their local priorities. Finally, a technical glossary of terms considered important for a better understanding of the text, has been included.

This manual should be considered as a dynamic tool in a constant state of development that can serve as a reference point for common methodologies.

Its transmission to a wider public and updates will be possible via the web on the internet site http:// ecoplantmed.eu/. This manual has also been translated in different languages of the diverse institutional partners within the ECOPLANTMED project, to make it accessible to the local stakeholders.





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# PROMOTE ENVIRONMENTAL AWARENESS

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Scout du Liban	30 chef scouts
Guide du Liban	150 persons
Jezzine Youth Club	10 members
Colonie Naturamis	60 students
Baabdat Municipality	Residents of Baabdat and surrounding areas
Centre Culturel Libano-Allemand	20 adults
LAU Beirut - NGO fair	Thousands of LAU students/visitors
USJ - Operation 7 <sup>ème</sup> jour	Thousands of street vsitors in Bourj Hamoud
AUST Beirut - Leo Beirut Gate	AUST students
Lebanese Universty	10 forestry students from UL
Broumana High School	100 students
College Apotres - Jounieh	60 students
St. Louise - Ajaltoun	60 students
St. Josef - Antoura	30 students
SSCC - Kfarhbab	60 students
SSCC - Kfardebian	75 students
SSCC - Batroun	150 students
SSCC - Jdeideh	320 students
German School - Jounieh	30 students
Jesus & Mary School - Rabieh	15 students
St Michel School - Sahel el Alma	30 students
Lycée Amshit	60 students
Franciscaines	100 participants
Sainte Famille - Fanar	100 students
College Antonin - Roumieh	90 students
Notre Dame - Sahel Alma	180 students
College Besancon - Baabda	200 students
Lycee La Martine - Tripoli	300 students
College Antonin - Roumieh	200 students
Ghazir Public Secondary School	150 students
Ajaltoun Public Technical School	70 students
Public Schools of Jezzine	150 students
Zahrit el Ihsan	30 students
ABC Ashrafieh - Green Week	Hundred mall visitors
Le Mall - Dbayeh (with Azadea)	Thousands of mall vistors
Le Mall - Saida (with Azadea)	
Beirut Souks (with Azadea)	
Le Mall - Sin el Fil (with Azadea)	

# EDUCATIONAL ACTIVITIES

Our nation's future relies on a well-educated public to look after the environment that sustains us. In this context Jouzour Loubnan has been partnering with many institution/organization/school etc. in order to spread the environmental awareness through students, scouts, professionals, or every other concerned person. Even though we are a young NGO with only 14 members we manage to organize awareness sessions with all the interested persons or groups, and to participate in most of the fairs and exhibitions we get invited to.

















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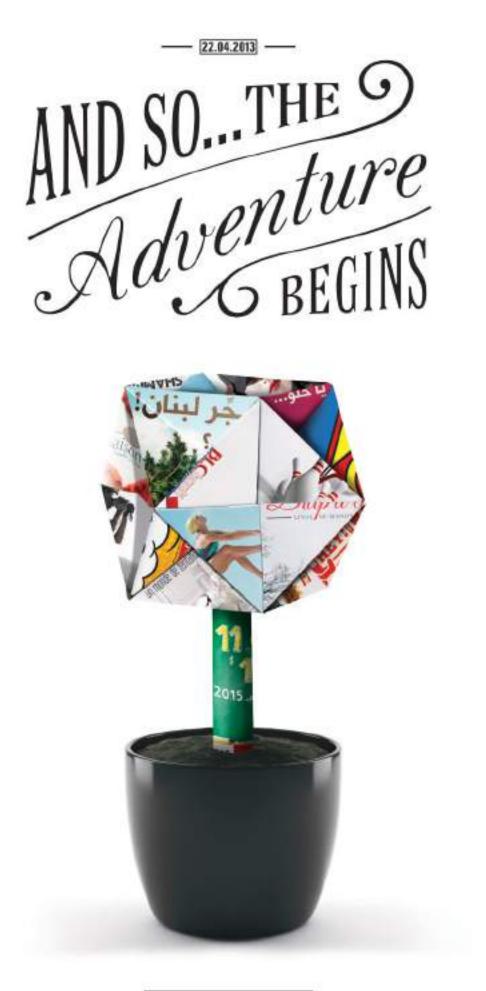






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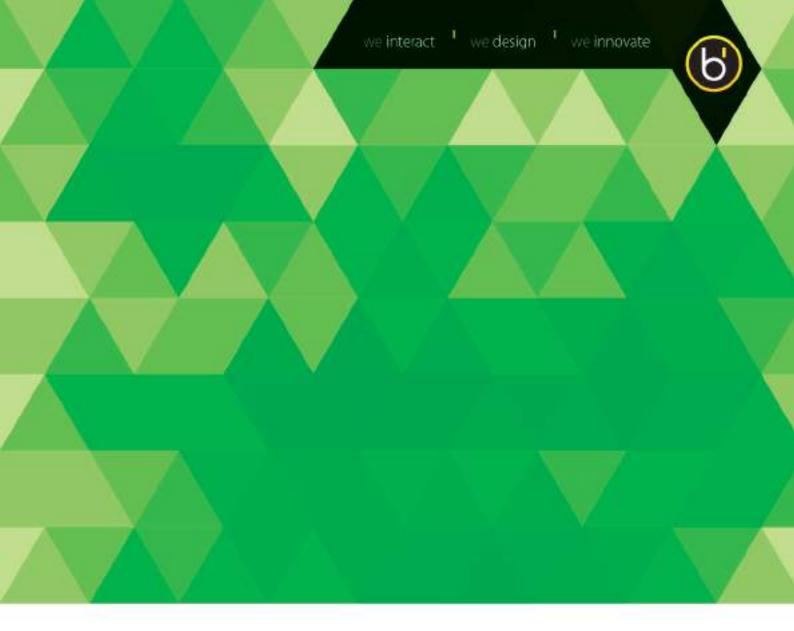




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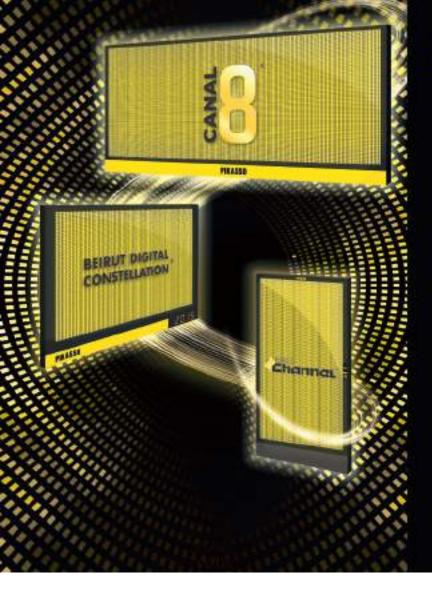


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#### الجمعية التعاونية الزراعية لمنتجي الأغراس الحرجية في لبنان م.م The Cooperative of Native Tree Producers of Lebanon LL

In a collaborative effort to sustain reforestation projects in Lebanon, nine native tree nurseries representing the Cooperative of Native Tree Producers of Lebanon (CNTPL) are working together to produce high-quality native tree seedlings for reforestation. The Cooperative focuses on ensuring more successful national reforestation efforts and responding to a rising demand for quality native tree seedlings. The CNTPL was officially recognized in April 2013 as a government-approved entity.

CNTPL member nurseries collaborate with international forestry experts and institutions to produce vigorous seedlings with improved root structure, able to survive better in different field conditions. Their work has led to a dramatic increase in survival rate post-planting and a decrease in seedling production and planting costs. The Cooperative's protocols are now adopted at the national level providing high quality native tree seedlings to reforestation stakeholders including non-governmental organizations, academic institutions, and private sector companies such as the Lebanon Reforestation Initiative (LRI), Jouzour Loubnan, Lebanese University (LU), etc...

In order to ensure successful reforestation, native seedlings should be ordered within a specific timeframe, taking into consideration seed collection zones and time to ensure appropriate seeds are used for a specific site, seed handling, seedling production time (6 to 12 months) and planting time in the field. Thus, in order to meet the optimal timing for planting during the fall planting season (November – January), seedlings should be ordered no later than May.

*To order your seedling please contact CNTPL:* +961 5 951 521/6 | info@lebnativetreecoop.org



## HORSH BEIRUT A GREEN HAVEN IN THE HEART OF LEBANON'S CAPITAL CITY

NAHNOO is a nonsectarian and nonpartisan youth-lead organization that aspires to provide a platform for young Lebanese to engage in activities that promote selfdevelopment and self-expression and gain the skills necessary to contribute to their communities meaningfully and peacefully. We work mainly on three key topics:

- Advocacy to reclaim Public Spaces in Lebanon.
- Youth Empowerment through Workshops and Advocacy Work.
- Good Governance and Citizen
  Participation in Local Decision Making.



Horsh Beirut (Beirut pine trees forest) is the only public park in Lebanon's capital city and by far its largest green space. The 255,000m<sup>2</sup> urban park has a historical importance among Beirut residents in particular; it holds personal as well as shared memories for citizens. Created by Emir Fakhreddine II in the 17th century, it has since known numerous development and changes such as: timber abuse, the integration of a horse track & casino by the Ottomans, roads construction in the 1950's, bombing in 1982 during the war and finally rebuilding by the Beirut Municipality and Ile-De-France in the early 1990's.

While we are living in an increasingly built up environment, the Horsh represents a fundamental part of our community life on top of its environmental importance. Indeed, this triangular space is at the center of highly diverse neighborhoods with residents from different nationalities, socio-economic, political or religious backgrounds.



This situation leads Horsh Beirut to have the potential to play a positive role in shaping public life, as a public space, and improving the quality of life in the city, as a social and public health need. It serves as a platform for people to interact & express, a much needed space for our youth to enjoy leisure activities and for our children to play in a safe and clean environment where they can observe a variety of vegetation and learn to respect nature.

After being closed for the past 20 years (under claims that local social tensions would lead to its destruction) this green haven reopened in September 2015 following four years of sustained advocacy to reclaim the public's right to access its unique park. NAHNOO's "Together to Reopen Horsh Beirut" campaign demonstrated a successful reactivation is possible through citizens feeling a sense of ownership towards the park, inspiring them to preserve it. NAHNOO believes with proper policies implemented, Horsh Beirut can play an important role in fostering social cohesion and unity between the different Lebanese communities.





# ECO-SUSTAINABLE DEVELOPMENT

*'Fondation Diane' was established in May 2015 by Diana Sfeir Fadel, in response to the ecological disaster and citizen frustration stirring up the country.* 

#### Investments in environmental projects

- Provide financial and operational support to young environmental projects as well as SMEs and municipal projects.
- Encourage and develop eco-sustainable initiatives through competitions, incubations, acceleration.

#### These projects are evaluated and selected based on:

- Their positive impact on the environment (e.g. waste management, water treatment, solar energy, green transportation, bio-agriculture, air pollution...)
- Quality of the teams
- Strength of their economic model

## The objective being to prove that eco-sustainability and profitability are not incompatible.

## **CEECDD** (Chaire de l'Éducation à l'Éco-Citoyenneté et au Développement Durable)

#### Based in the Saint Joseph University (USJ), the Chair aims at rethinking individual behavior models and creating harmony between citizens and nature.

- Develop a sense of ecological civic awareness in schools, high schools, universities and different social groups, through communication and awareness campaigns.
- Provide training diplomas on the above topics.
- Issue scientific research and publications, and hold colloquies, seminars and conferences.

#### CITIZEN CAFÉ, to inform and motivate:

- Resuscitate motivation and sense of solidarity among Lebanese citizens.
- Create debates around current topics.
- Open citizens' eyes on the magnitude of their power, urging them to take action.





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*IRAP was founded in 1960. At this time, a group of volunteers were motivated to create spiritual and human ties with disabled people of all ages and of all regions. A "Home" was built for the whole community to lead this experience. It was a place of meeting and of living at the same time.* 

Progressively, in 1962, the idea took shape for a better service through specializing in precise areas of education for disabled children.

In 1963, the first class for deaf children began. It was equipped with the latest and sophisticated electronic apparatus. IRAP signed an agreement with the Ministry of Social Affairs for a financial, technical and social progress.

From 1963 to 1968, adults and children of the first Home increased considerably. The small house could not contain the development of the educational projects anymore. The move to Aïn Aar, was simultaneous with the ongoing building restoration.

## On the 20th of January 1975, IRAP was recognized officially by the Ministry of Interior under the number 24 AD.





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- The active specialized classes, from "Kindergarten" to High School, as well as the academic or technical "Brevet" and more.
- The follow-up at IRAP of children and young; who have undergone cochlear implant surgery.
- The sector of technical training for the youth, also open to all those from nearby villages.
- The workshops: a whole domain of training and production in artisan and manual works, pastries and kitchen goods.
- The management of cafeterias in some hospitals of the city providing on-the-job training and auto-finance.







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# WASTE MANAGEMENT A NATIONAL ALARM

Since July 2015, Lebanon witnessed a waste management crisis with impending disastrous consequences at the health and environment levels.

Since garbage is a breeding ground for insects and rodents, the proliferation of trash in residential areas will likely encourage pests to spread. Time lapse and changes in weather conditions have affected the release of toxins, contamination of food and water, and appearance of infectious diseases; thus necessitating immediate action. Also alarming air levels of toxic gazes and hydrocarbons have been identified, turning this problem as a very critical emergency situation.

Jouzour Loubnan wants to highlight the positive initiatives of some environmental organisations working hand in hand to help us grow out of this crisis.



#### Most of the Environmental Consequences are:

- Global warming
- Flammability
- Toxicity & asphyxiation
- Decreased agricultural yields
- Poor soil quality
- Increased animal & fish mortality

Causes of the current problem include political favoritism and the absence of long term planning; while its consequences comprise unauthorized landfills and incineration sites near iinhabited areas.

Immediate, concrete and sustainable actions should be taken now to save the country's population, nature and sea.



# E-WASTE MANAGEMENT



"Our future hope is to have a legislation or system structure for disposal of e-waste that prohibits public & private sectors along with individuals from storing old and obsolete electronics and enforces proper disposal through a wide network of collection facilities in order to stop dumping and burning them in rural areas" Maroun Charabati – President

A report published by the United Nations University states that the global use of information technology equipment is growing & global electronic waste has recorded high levels reaching 42 Mt (million metric tons) in 2014.

With rapidly changing technologies and constant consumer demand for the latest devices, the rise in e-waste looks set to continue. With a vision to create a sustainable environment & building regional partnerships, Beeatoona is the only NGO in Lebanon that specializes in E-waste recycling since 2008.

Lebanon faces challenges at the level of consumer awareness, collection, recycling, and disposal of e-waste. Beeatoona raises awareness about the dangers of improper disposal of batteries and e- waste by conducting Training of Trainers programs for teachers, public & private sector employees, local foundations and educational institutions.



Since 2008 Beeatoona has been lobbying for green environment across MENA region. It was able to establish a community based environmental momentum through its projects.

E-cycle is one of the core projects that targets public & private sectors, citizens, and school & university students. E-cycle intends to raise awareness on the environmental health risks associated with disposal of batteries, thus engaging people in sorting, collecting batteries and recycling old electronics.

The rising tensions have become the predominant ethnic conflicts across Lebanon. "Green Lebanon with Peace", brings students from different schools, promoting a non-violence culture through tree planting by uniting the strengths of organizations, people and youth in order to make peace a practical reality for the children of this and future generations.

Those projects are just a glimpse of what we do at Beeatoona. For more information please visit our website: www.beeatoona.org



## SUSTAINABLE WASTE MANAGEMENT SOLUTIONS FOR LEBANON

Lebanon is facing a major crisis in the waste management field: landfills reached saturation; lack of national policy promoting source separation, reduction and recycling of waste; inadequate waste management infrastructure; and inappropriate design of secondary sorting centers and processing.

These problems pose a serious threat to public health and environment. Similarly, the adoption of hasty and inappropriate solutions by municipalities could lead to health, environmental and economic catastrophe in Lebanon. Municipalities, apart from decades of absence in waste management strategies, now bear the brunt of the crisis.

The actual crisis in the country needs an urgent solution, including through awareness sorting at source and the establishment of waste management centers.

This is why arcenciel promotes sustainable waste management solutions through pilot projects systems based on source separation and recycling / composting of waste.

Since the beginning of the crisis, arcenciel provided awareness among general public, and supported more than 80 municipalities in improving their waste management system, providing technical support, training and consultancy.

While accompanying municipalities in the implementation of their own waste management centers as it was the case in Bikfaya and Beit Chaar, arcenciel continues to ensure the collection and recycling of more than 10 tons of waste per day in its centers, in order to reduce the impact of the crisis.

Thanks to the contribution of NGOs, community mobilizers, active and engaged citizens, and various donors, a culture of sustainable development is being diffused and good waste management practices are being adopted all over Lebanon!

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# GUIDE TO MUNICIPAL SOLID WASTE MANAGEMENT



Roadmap



Nature Conservation Center | NCC مركز حماية الطيبعة

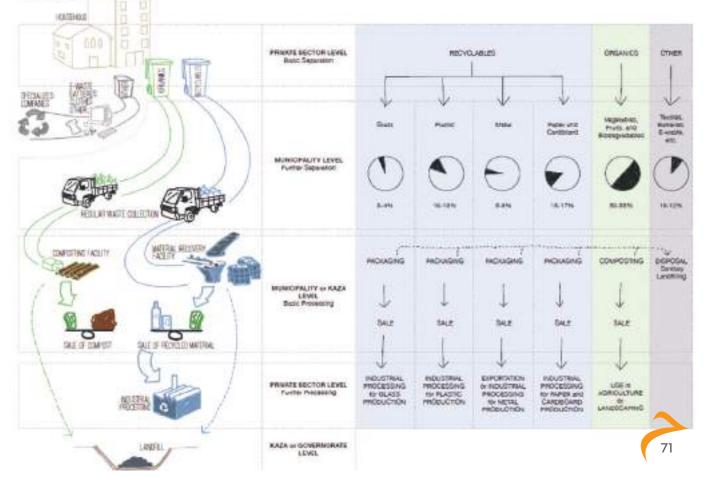
"Waste management is a duty, not a lucrative business", said Dr. Najat A. Saliba, during one of the workshops hosted by the Nature Conservation Center (NCC) at the American University of Beirut (AUB) to tackle the waste management crisis.

At the onset of the crisis, Dr. Saliba, NCC's Director, urged the AUB community to employ the scientific method AUB is known for in addressing the crisis. Faculty, staff, and students responded and formed the AUB Solid Waste Management Task Force.

The Task Force then began working on several projects and studies to compile data about the behavioral, technical, medical, and environmental aspects of the crisis. In parallel, NCC organized activities to make sure people has access to this insight.

The first of these was a workshop on August 6 for municipality representatives to share their perspectives, which revealed that mayors not only felt they lacked the funds and technical expertise to implement independent waste disposal methods, but also the jurisdiction. This was followed by two workshops on September 15 and October 17 to pilot the Task Force's plan (or Roadmap) and refine it, in addition to several meetings with different stakeholders, including the Minister of Agriculture and "You Stink" movement representatives, to collect feedback. NCC also hosted a student-led debate entitled "Ta3a Ne7ké: Let's Talk Trash" to evaluate students' viewpoints and pinpoint weaknesses that have worsened the crisis.

The Roadmap was finally published in the Guide to Municipal Solid Waste Management that was main authored by Dr. May Massoud and Mr. Farouk Merhebi, and launched by NCC on October 29, 2015. This manual gives an overview of waste management in Lebanon, defines integrated solid waste management, presents the different available options, and introduces the Roadmap. The Task Force has since suspended its activities, but NCC continues to pursue applications of integrated waste management in its current activities with villages and students. Most recently, it introduced a Waste Management category to its campus-wide International Biodiversity Day At AUB (IBDAA), inviting students to find partial solutions to the waste crisis through anything from inventions to business plans.





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