

WORD OF THE PRESIDENT

RAOUL NEHMÉ | PRESIDENT JOUZOUR LOUBNAN



Jouzour Loubnan is celebrating today 7 years of continuous green success. Seven is the most significant number across religions and cultures and so are our forests which stretch from North to South Lebanon and from Mount Lebanon to the Bekaa. There are seven days of the week, seven colours of the rainbow, seven notes on a musical scale, seven seas and seven continents. Snow White ran off to live with seven dwarves, there were seven brides for seven brothers, Shakespeare described the seven ages of man, Sinbad the Sailor had seven voyages. And when Ian Fleming was looking for a code for James Bond, he didn't go for 006 or 008. Only 007 had the right ring :) So this must be our lucky 7 years so far!

The Jouzour Loubnan team is motivated, solution driven and constantly trying to overcome new challenges to achieve our mission.

We managed to secure the survival and protection of all our planted trees throughout last year's draught and are happy to announce that more than 200,000 native trees are happily growing in our beloved Lebanese soil today thanks to all our supporters and donors who believe in us and believe in a healthier Lebanon.

The details of all the plantation sites can be explored further within this magazine. In addition, we have also developed new individual fencing methods to protect our trees from the sheep and goats' hungry days while keeping the shepherds satisfied and on our side.

Last but not least, new germination protocols have been documented and shared with nurseries this year as a result of our daily research and experiments in our Seed and Germination Laboratory, (more details within the magazine).

Furthermore, Jouzour Loubnan always strives to find innovative and efficient ways to raise funds in order to ensure the sustainability and continuity of the Reforestation campaigns. Hence, we have recently been venturing into initiating a sustainable and independent private public partnership by developing a private-sector-led reforestation fund (PRF) to assist the Government of Lebanon in achieving its goal of 20% forested area by 2050.

This initiative is still in its draft phase and needs your contribution and support to bring it to life. You can read more about this initiative within the magazine.

Last but not least, we had a dream 7 years ago, and there is nothing more valuable and joyful than seeing one's dream become a reality, slowly but efficiently, our children will indulge into Lebanon's growing forests in a healthy, natural and safe environment. Lebanon thanks each one of you for continuing to make our dream a living reality every year!

Raoul Nehmé
President Jouzour Loubnan

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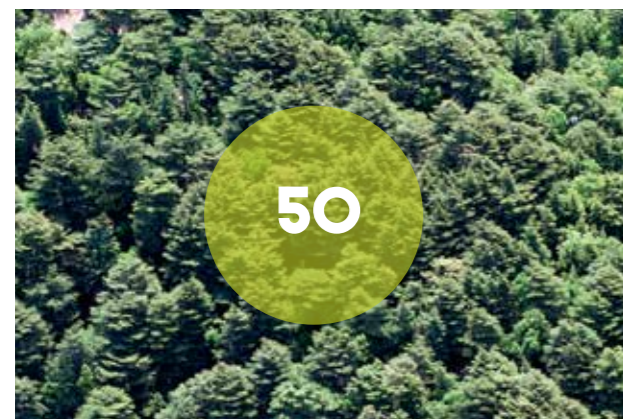
Jouzour Loubnan is an NGO established since 2008 (registration number 491) whose mission is to participate in the restoration of Lebanese woodland and promote sustainable forestation mainly in arid regions. Jouzour Loubnan also focuses on empowering local communities to protect, manage, and benefit from 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

CONTACT US :

m: +961.71.124 000
t: +961.(0)1.429 666 e: contact@jouzourloubnan.org
f: +961.(0)1.398 040 w: www.jouzourloubnan.org

For your donations: +961.1.429 666

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NEWSFLASH

PRIVATE-SECTOR-LEAD REFORESTATION FUND FOR AFFORESTATION AND REFORESTATION IN LEBANON

The Government of Lebanon launched the "40 Million Tree Planting Program" in 2012. Based on this program, the Government of Lebanon prepared the National Afforestation and Reforestation Program (NARP) to increase the forest cover from 13% to 20% by 2030. In response to a request from the Government of Lebanon, the World Bank, Food and Agriculture Organization of United Nations (FAO), the European Union (EU), other international and national institutions and local NGOs have begun providing support to the Government of Lebanon and subsidiary municipalities in implementing NARP.

CHALLENGES

Historically, the forests of Lebanon have played an important role throughout the Middle East. In antiquity, Lebanese cedars (Cedrus libani) -- the central symbol of the Lebanese flag -- and other forest species were exploited for shipbuilding and the construction of temples and other major monuments. The long history of timber extraction, forest fire and animal grazing led to the degradation of forest resources and the loss of most forests. The Civil War (1975-1990), subsequent uncontrolled urban expansion, and frequent fires have further reduced the total forest area by approximately 40% to a mere 13% of Lebanon's land area.

Lebanon is considered a hot spot for biodiversity -- desertification, land degradation, and severe soil erosion are negatively affecting the Lebanese economy and quality of life as well as the environment of the Mediterranean basin.

In the 1960s and early 1970s, Government of Lebanon implemented numerous reforestation projects. However, reforestation initiatives stalled during the prolonged years of civil war and subsequent political instability. Lebanese civil society and universities have tried to

offset shortfalls in government's reforestation efforts. However, such ad-hoc initiatives have been generally uncoordinated, received limited financial support and far from achieving any significant result.

Reforestation in Lebanon on State and Municipal land requires substantial and sustained efforts for protection and maintenance, especially given low seedling survival rates, overgrazing and water scarcity during a period of 6 months, which increases reforestation programs complexity and costs: Using existing reforestation techniques, an estimated minimum investment of US\$400 million is needed to achieve NARP's goals, which is far beyond the Government of Lebanon's financing ability without massive support from International Institutions and bilateral donors as well as the private sector.

PROPOSAL

Jouzour Loubnan proposes to develop a sustainable and independent private public partnership through developing a private-sector-led reforestation fund (PRF) to assist the Government of Lebanon in achieving NARP's goals of 20% forested area by 2050.

This approach aims to facilitate transparency, independence, and integrity in the management of the fund, as well as enable flexible, efficient and cost-effective implementation of reforestation activities. In order to ensure the independent and transparent decision making processes, the PRF will be managed by a board of trustees composed of reputable representatives from the civil society, the private sector and International Institutional Donors.

Key Government of Lebanon ministries such as Ministries of Agriculture, Environment, and Interior and Municipalities will be invited to participate in the board of trustees if they wish so, noting that in any case non-governmental representatives will hold the majority of the board seats and that the PRF will be managed according to private-sector standards with strict corporate governance codes ensuring efficiency and transparency.

Under the board of trustees, there will be a PRF secretariat led by a CEO reporting to the Board of Trustees to act as the program management unit (PMU) for the PRF. The Board of Trustees will make sure that all PRF employees have no conflict of interest with any stakeholder, i.e. NGOs, Government of Lebanon administrations, etc.

NEWSFLASH

PRIVATE-SECTOR-LEAD REFORESTATION FUND FOR AFFORESTATION AND REFORESTATION IN LEBANON

THE PROPOSED PRF AND PMU WILL:

- Raise funds for PRF from various local and international institutions as well the private sector promoting CSR approaches;
- Assume fiduciary responsibilities for the fund;
- Facilitate proactive transparency with all stakeholders via public access to financial records, governance decisions, and relevant project data.
- Develop a Research and Development (R&D) program in close cooperation with universities and local NGOs in order to reduce costs and improve reforestation outcomes, such as survival rates, resilience, biodiversity, soil health, and protection against fire hazards and grazing:
 - Review and evaluate R&D proposals for funding;
 - Administer reforestation grants and other technical and financial assistance to such universities and NGOs to implement these projects;
 - Provide technical supervision, coordination, and monitoring and evaluation of on-going R&D projects;
 - Collect and share best practices regarding public relations, reforestation techniques, governance, etc.;
- Execute reforestation projects as follows:
 - Define, review and evaluate reforestation proposals for funding;
 - Provide support to reforestation partners such as NGOs, civil society organizations (CSOs), private sector companies and municipalities to form and maintain inclusive reforestation consortia, ensuring efficiency as well as representation of disadvantaged and vulnerable stakeholders;
 - Help consortia – composed of municipalities and reforestation partners – develop long-term governance structures for reforested areas;
 - Provide grants and other technical and financial assistance to such consortia to reforest Municipal and State lands;
 - Provide technical supervision, coordination, and monitoring and evaluation of on-going R&D projects;
 - Ensure necessary commitments of local authorities to allow or facilitate the conduct, maintenance, protection, and long-term sustainability of reforestation projects;
 - Encourage and assist consortia in securing legal, financial, and social incentives and protections for reforested areas;
- Develop and implement extensive awareness campaigns in schools, universities as well as for local authorities and stakeholders and for the public at large in order to:
 - Build public support for reforestation and PRF;
 - Protect reforested areas as well as existing forests;
- Liaise and coordinate with stakeholders and, namely, coordinate closely with Government of Lebanon reforestation programs and ensure that PRF activities abide by Government of Lebanon goals and regulations and are complementary to reforestation efforts implemented by Government of Lebanon;
- Provide advisory services to Government of Lebanon in order to improve the legal framework and its implementation; and

Within that scope, the private sector would play a key role in PRF's early success by securing seed financing, serving on the board of trustees, and engendering confidence in other potential donors and supporters. In the longer-term, the private sector involvement will help ensure stable, sustainable funding of the program.

JOUZOUR LOUBNAN'S MISSION

OUR MISSION IS TO PARTICIPATE IN THE RESTORATION OF LEBANESE WOODLAND AND PROMOTE SUSTAINABLE FORESTATION 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 forestation programs and, on the other hand, the benefits of such forestation are tremendous.

The success of our forestation 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.

District //S

A PROUD LEED CERTIFIED REAL ESTATE PROJECT FOR NEIGHBOURHOOD DEVELOPMENT IN LEBANON



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OUR COMMUNITY MATTERS



تعلق ببلدك



INDEVCO HQ Tellet Al-Assafir, Ajaltoun, Lebanon, P.O. Box 11-2354 Beirut, Lebanon
Tel: +961-9-209-112 | Fax: +961-9-235-736 Ext. 3256 | info@indevcogroup.com
www.indevcogroup.com



INDEVCO Group

MEET THE TEAM



RAOUL NEHMÉ | PRESIDENT

Profession: General Manager, BLC Bank
Education: Ecole Polytechnique de Paris & Ecole des Mines de Paris



MAGDA BOU DAGHER KHARRAT | VICE PRESIDENT

Profession: Head of Life & Earth department,
Education: PhD in plant molecular biology, Université Pierre et Marie Curie



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: Organization, BLC Bank
Education: MBA - Management of Financial institutions, USJ - Sorbonne - Paris Dauphine



JOELLE SAAB | PROJECT COORDINATOR & LABORATORY TECHNICAL MANAGER

Education: Sciences & Management, St. Joseph University



BOUCHRA DOUEIRI | PROJECT COORDINATOR

Education: PhD in Plant Ecology



RIAD MOUAWAD | ART DIRECTOR

Profession: Art Director & Partner, BlackInk - visual communication
Education: Notre Dame University, Graphic Design



LARA FAHS | COMMUNICATION ASSISTANT

Profession: Communication and PR Officer at 'Keep it simple' communications agency
Education: Master's in Information and Communication, Université Saint Joseph



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

INCREASE THE
WOODLAND
AREA

JOUZOUR LOUBNAN ACHIEVEMENTS

SINCE 2008...

WE PLANTED 195,759 TREES

FROM **30** NATIVE SPECIES

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

IN **19** DIFFERENT REGIONS OF LEBANON,

WE ACTIVELY PARTICIPATED

IN DOZENS OF FAIRS AND EXHIBITIONS,

SEVERAL WORKSHOPS AND SEMINARS

COUNTLESS LOCAL TV AND RADIO PROGRAMS.

WE LAUNCHED 4 SUCCESSFUL MASSIVE AWARENESS MEDIA CAMPAIGN ON

5 LOCAL TV STATIONS,

6 RADIO STATIONS

AND HUNDREDS OF BILLBOARDS, UNIPOLES, ETC.

WITH THE ASSISTANCE OF

OVER **5000** VOLUNTEERS,

THE LEBANESE ARMY AND FRENCH, SPANISH AND NEPALESE UNIFIL SOLDIERS AND OFFICERS

WE ESTABLISHED AND ARE SUCCESSFULLY OPERATING A LABORATORY

FOR SEED GERMINATION AND CONSERVATION.

WE ORGANIZED FOUR SUCCESSFUL GALA DINERS

WE EFFICIENTLY ORGANIZED

OVER **70** AWARENESS SESSIONS

FOR MORE THAN **1,000** STUDENTS, SCOUTS AND YOUTH CLUBS

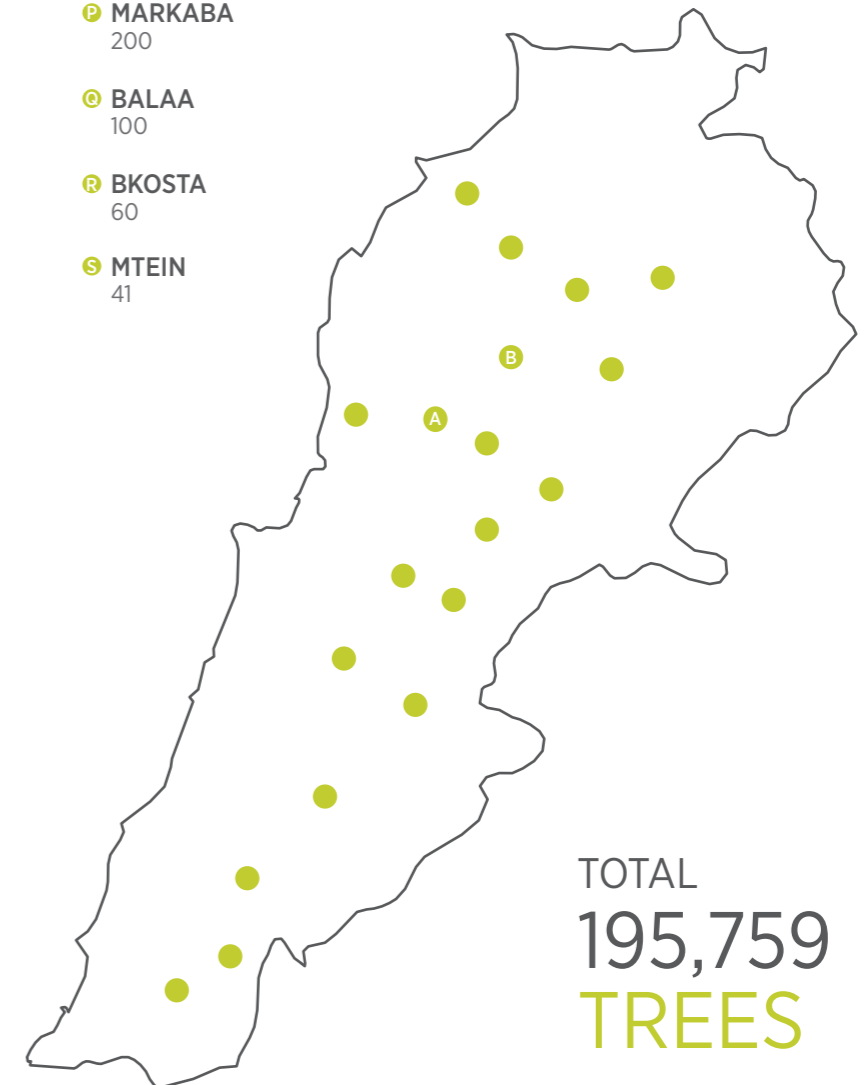
WE'VE HAD NUMEROUS ARTICLES PUBLISHED IN SEVERAL

LOCAL NEWSPAPERS AND MAGAZINES.

WE INITIATED THE GREEN PROGRAM FOR REAL ESTATE AND CAR DEALERS

EXPLORE OUR PLANTATION SITES

- A** KFARDEBIAN
119,452
- B** HARF SHLIFA & BTEDHI
26,950
- C** AYNATA, SOUTH LEBANON
16,924
- D** EHMEJ
9,300
- E** CHABROUH
7,874
- F** EBL EL SAKI
6,465
- G** EHDEN
3,500
- H** DAMOUR
1,500
- I** ZAAROUR
1,400
- J** BTEDDINE
500
- K** TARCHICH
418
- L** AL AKOURA
300
- M** MAYSS EL JABAL
300
- N** MAJDAL SILM
200
- O** SHAQRA
200
- P** MARKABA
200
- Q** BALAA
100
- R** BKOSTA
60
- S** MTEIN
41



TOTAL
195,759
TREES

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



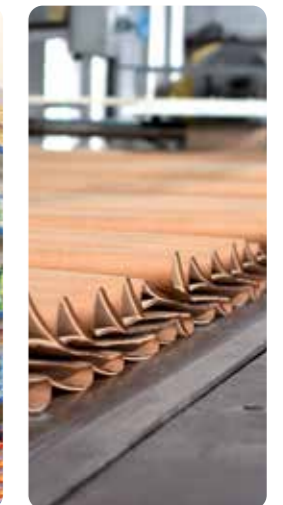
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FOLLOW OUR PLANTATION METHODOLOGY

In order to insure 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 science and, on empiric approaches, due to the lack of prior experience we have in the forestation of some of our plantation areas:

- We plant only 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 either plant trees over two-meters tall or fence the area to be planted and plant mainly 20 to 30 cm tall trees. In other regions, we plant mainly 20 to 30 cm tall trees.
- 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.

In 2013, in order to optimize our plantation techniques, we have been trying several new plantation protocols (1) Seed sowing in shades of nurse plants, (2) individual fencing, (3) plantation of bare root seedlings and (4) plantation without irrigation.

As a consequence we expect our overall survival rate to be reduced for the sake of long-term reforestation protocols optimization. The upcoming tests results will be published in our next issue and will show us which practice is optimal to the seedlings survival and is more cost efficient.



(1)

Sowing seeds without irrigation according to various protocols reducing significantly the cost of reforestation in areas where there is no grazing.



(2)

Individual fencing protects seedlings from grazing keeping the rest of the land open for grazing that reduces fire hazard.



(3)

Using bare root seedlings reducing potentially the cost of reforestation by 1\$ per seedling.



(4)

Planting seedlings without or with limited irrigation reducing potentially the cost of reforestation by 6\$ per seedling.



IN 2014, INITIAL RESULTS WERE ENCOURAGING BUT NOT STATISTICALLY SIGNIFICANT SO WE DECIDED TO EXPAND THE TESTS ON VARIOUS REGIONS IN ORDER TO ASSESS THE SURVIVAL RATES ACCORDING TO TYPE OF TREES, LOCATION, IRRIGATION TYPE, AND MANY OTHER SIGNIFICANT PARAMETERS. ALLOWING FOR HUNDREDS OF SQUARE KILOMETERS TO BE REFORESTED.

YOUNGER NEXT YEAR

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PUMPKIN PATCH STEVE MADDEN WOMEN'S SECRET**



/RETAILGROUP

DAMOUR PLANTATION CAMPAIGN

600 ROVERS FROM “LES
SCOUTS DU LIBAN” PLANT
1500 NATIVE TREES WITH
JOUZOUR LOUBNAN

It is already 8:30 AM on this morning of November 30 2014 when the Jouzour Loubnan team arrived to the Damour site to get ready before the scouts arrival. The anticipation is high. The plantation site had already been divided into 8 plots in which each group will be planting.

Soon after, buses with around 600 energetic young volunteers from the Rovers Branch of the “Les Scouts du Liban”, boys and girls coming from all regions of Lebanon, reached the site in Damour. We could feel their excitement to take part in this all-day long plantation activity entitled “Sow on Good Soil”. The army is there too and so are the Red Cross and the Mayor and officials from the municipality of Damour. Even the locals started showing up, wanting to give us a hand and participate to this big green day...

The Scouts' mission that day was to plant 1,500 native trees and 1.500 seeds.

Jouzour Loubnan team started by welcoming the scouts and all the participants and by raising awareness on the important role played by forests in Lebanon and the threats of desertification. They also explained what was the NGO's mission, highlight its achievements and explain why are we planting in Damour and where the specificities of this region and the soil. This quick brief was followed by a training on the best practices to plant trees and how to insure their survival. Our members and team of volunteers also provided the trees which varied between Pine, Carob, and other native trees. Four hours later, the group successfully accomplished its mission planting all trees and seeds provided to them.

This initiative falls under a larger plantation campaign of 60,000 trees to be planted and protected within this site in collaboration with the municipality of Damour.

“The contribution of the youth of Lebanon is vital to our mission, as they are the hope of tomorrow and they will be the ones protecting our green land”. “We invite all the people from all age ranges, families and friends, to support and contribute to our green mission”

Mr. Raoul Nehme, president of Jouzour Loubnan addressed the volunteers and the participants upon their arrival pinpointing that:

According to the Art. 6 of the scout law “The scout sees in nature the work of God protects animals and plants”. Our role as rovers is to take care of our land and try to make this world a better place. Our Journey Goal urges us to take the initiative and react to this present and to “Sow on the good soil” which is our country Lebanon”.

Rawad Khalaf, Commissioner of the Rovers branch of “Les Scouts du Liban” declared that:

DISCOVER OUR NEW FOREST IN JEZZINE

REGION | TOUMET NIHA, JEZZINE
TREES | 32,000 NATIVE SEEDLINGS

AREA | 500,000 M²
DATE | OCTOBER 2014 - OCTOBER 2018

This project will be 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.

Within the scope of this project, Jouzour Loubnan plans

(1) To increase the woodland area in Toumet Niha and participate in the restoration of its degraded high mountain eco-system in close partnership with the Jezzine municipality by planting 32,000 trees of native species and 4,000 seeds on a total site area of approximately 400 dunums on a municipal land.

(2) To empower Jezzine municipality, to protect, manage, promote and benefit from the project and train its personnel at performing efficiently reforestation activities, while increasing its role in regional forestation development.

(3) To promote environmental awareness by sensitizing the youth, locals and influential stakeholders and decision-makers to save Lebanon's natural resources and its forests, and by raising knowledge and environmental awareness on the multi-purpose forest functions for protection, restoration, conservation and economic development on a local, regional and national level.

Jouzour Loubnan has already worked in close collaboration with the local authorities and municipalities of the Southern region of Lebanon, namely Ebl el Saqi and Ainata. These initiatives have been a great success and they have left a positive impression and deep sense of gratitude from the local community.



PLANT WITH
A SCIENTIFIC
BACKGROUND

ENTER INTO OUR LABORATORY

CONTEXT

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

Forestation 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.

Jouzour Loubnan took the initiative in 2009 of creating the LABORATORY FOR SEED GERMINATION AND CONSERVATION (LSCG) dedicated to this purpose.



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 seedlings 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.



CONSERVATION OF FOREST GENETIC RESOURCES

Forests and trees enhance and protect landscapes, ecosystems and production systems. They provide goods and services which are essential to the survival and well-being of all humanity. Forest genetic resources (FGR) are the heritable materials maintained within and among tree and other woody plant species that are of actual or potential economic, environmental, scientific or societal value. FGR are essential for the adaptation and evolutionary processes of forests and trees as well as for improving their productivity.

The orographic complexity of the Lebanese mountains played a key role in the evolution and the persistence of some Mediterranean tree species. Factors that currently lead to high precipitation in Mount Lebanon also operated during the glacial period, moderating the impact of regional aridity on tree populations. Today, however, the role of these refugia in the persistence of relict species could be limited by rapid climatic change and human-induced land degradation.

The population size of Lebanon increased from 2.6 million in 1980 to 4.3 million in 2010. It is expected that the population will keep on increasing to reach 5.323 million in 2045 (United Nations, World Population Prospects: The 2012 Revision).

Along with population growth, the demand for energy and wood products for both industrial and domestic uses is expected to increase by 40 percent in the next 20 years (globally).

The demand for other forest-related goods (food, medicine, fodder and other commodities) is also predicted to increase. A major consequence of population pressure is land-use change. Forest conversion to crop and pasture land, together with overexploitation, selective harvesting and high tree mortality due to extreme climatic events, in combination with regeneration failure, can result in local population extinction and the loss of FGR (The state of the world's forest genetic resources – FAO-Rome -2014)

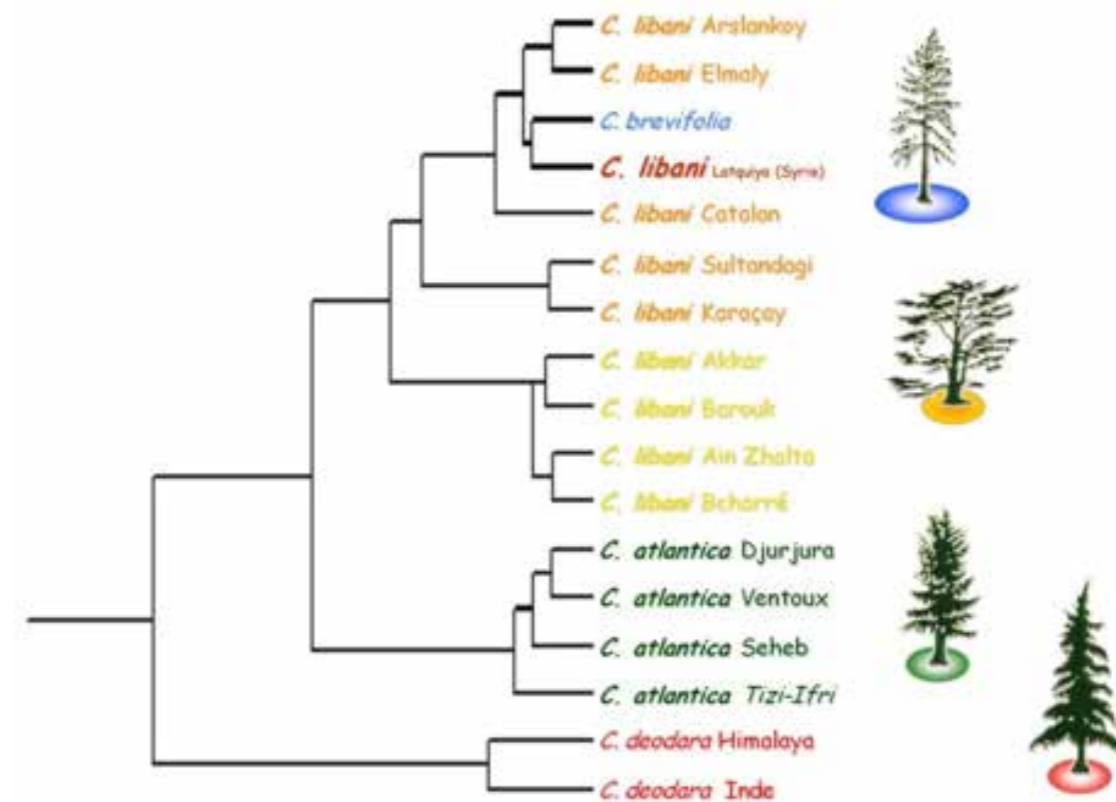
Conservation and sustainable management of FGR is therefore a must to ensure that present and future generations continue to benefit from forests and trees. Loss of plant species or species genetic erosion in forest ecosystems is mostly due to conversion of forest to other land use types, overexploitation and effects of climate.

The best way to conserve FGR is in situ conservation, in naturally regenerated and planted forests. FGR management actions are usually undertaken at forest ecosystem, species (interspecific) or genetic (intraspecific) levels. An array of biotechnological tools is contributing to this knowledge. Genetic diversity studies was already undertaken for the

main coniferous species in Lebanon : *Cedrus libani* (Bou Dagher et al. 2007); *Juniperus excelsa* (Douaihy et al., 2011) *Abies cilicica* (Awad et al. 2014). The genetic diversity of the populations is evaluated and recommendations are made in order to use the adequate genetic material. Taking into consideration such information when choosing genetic resources for reforestation is a key issue for restoration success. It is judicious to target traits suitable for adaptation to varying environmental conditions, including those associated with climate change.

A high genetic diversity serves as a way for populations to adapt to changing environments.

In tree improvement programs, biotechnology tools such as enhanced vegetative propagation techniques and marker-assisted tree selection are making significant contributions. Genomics is also being used in forestry as a tool to enhance conservation, for example through the development of DNA banks. Biotechnology offers innovative means of controlling illegal forest harvesting, with DNA fingerprints (barcoding) now used in timber tracking and export and import of seeds and plantlets for reforestation.





المستقبل



PROMOTE
ENVIRONMENTAL
AWARENESS

بدي شجر لبنان! بتساعدوني؟

SUPPORT US IN SPREADING AWARENESS

“THE BEST TIME TO PLANT A TREE WAS 20 YEARS AGO.
THE SECOND BEST TIME IS NOW”

- Chinese proverb

1. WHY IS JOUZOUR LOUBNAN SPREADING AWARENESS

• **What are we shedding light on**
With forests and woodlands covering approximately less than 13.2% of the overall Lebanese surface, the general public is becoming more aware of the dangers of desertification on present and future generations and hence is getting more involved in the actions aiming at stopping the rapid deterioration in the forest wealth. Today, our nation's future relies on a well-educated public to look after the environment that sustains us.

• Who are we targeting

In this context and parallel to our successful plantation campaigns, Jouzour Loubnan is strongly committed to spreading environmental awareness among the general public as well as educating, training and motivating young generations (schools and universities students), scouts, civil society associations, private corporations, municipalities' officials and local communities, other NGOs and international organizations, on the importance of reforestation and on the protocols of plantation, in order to sustain and preserve the planted areas.

2. WHAT ARE JOUZOUR LOUBNAN'S AWARENESS ACTIVITIES

• Yearly outdoor campaign and media - targeting: the general public

This year and for the fourth consecutive year, Jouzour Loubnan was proud to launch on the occasion of its annual fundraising gala dinner its national awareness campaign with the slogan “بدي شجر لبنان! ساعدوني!” (I want to plant trees in Lebanon! Help me!) voiced out by a young optimistic Lebanese girl.

This campaign was broadcasted on all local TVs and radios and was published on most outdoors media outlets (such as billboards, unipoles, LED screens). It portrays a little girl whose dream is to plant a tree, care for it and make it grow and she is asking us to join and help her in her mission. This campaign's core message and objective is to engage each and every one of us to participate in the reforestation efforts - and the young girl is leading by example. In previous awareness campaigns, the main message focused mostly on raising the alarm of the environmental threats of desertification and the beneficial impact of forests on our health and environment.



2011 CAMPAIGN



2012 CAMPAIGN



2013 CAMPAIGN

SUPPORT US IN SPREADING AWARENESS

2. WHAT ARE JOUZOUR LOUBNAN'S AWARENESS ACTIVITIES

• **School presentations and workshops - targeting: students**

In addition to our national awareness campaigns, Jouzour Loubnan organizes educational awareness seminars and edutainment activities in partnership with local schools and universities located all across the country of the Cedars. During these educational sessions, students from different ages and backgrounds learn more about Lebanon's biodiversity and the vital role of trees in sustaining our rich and unique environment. Students also take part in practical and recreational activities in which they learn to associate each tree with its seeds and fruits so they can identify them while strolling in the nature.



PARTNER	TARGET GROUP
LAU NGO FAIR- BEIRUT	Thousands of LAU students/visitors
GUIDE DU LIBAN	150 persons
ABC ASHRAFIEH GREEN WEEK	hundred mall visitors
USJ - OPERATIN 7E JOUR	Thousands of street visitors in Bourj Hamoud
BROUMANA HIGH SCHOOL	100 students
AZADEA AT LE MALL DBAYEH AZADEA AT LE MALL SAIDA AZADEA AT BEIRUT SOUKS AZADEA AT LE MALL SIN EL FIL	Thousands mall vistors
COLLEGE APOTRES JOUNIEH	60 students
ST LOUISE AJALTOUN	60 students
ST JOSEF ANTOURA	30 students
SSCC KFARHBAB	60 students
GERMAN SCHOOL JOUNIEH	30 students
JESUS & MARY SCHOOL RABIEH	15 students
ST MICHEL SCHOOL SAHEL EL ALMA	30 students
LYCEE AMSHIT	60 students
LEO BEIRUT GATE- AUST BEIRUT	AUST students
FRANCISCAINES	100 participants
BAABDAT MUNICIPALITY	Residents of Baabdat & surrounding areas
SCOUT DU LIBAN	30 chef scouts
SAINTE FAMILLE FANAR	100 students
COLLEGE ANTONIN ROUMIEH	90 students
NOTRE DAME SAHEL ALMA	180 students
COLLEGE BESANCON BAABDA	200 students/ then stand for all the complementary school
LEBANESE UNIVERSTY	10 forestry students from UL
LYCEE LA MARTINE_TRIPOLI	300 students
SSCC JDEIDEH	200 students/ then stand for all the complementary school
RED CROSS	30 participants
COLLEGE ANTONIN ROUMIEH	200 students

• **Stands in festivals and malls - targeting: general public**

Jouzour Loubnan takes part in different fairs, festivals and exhibitions targeting the general public aiming not only to raise awareness about reforestation in Lebanon but also to inform and engage visitors in our plantation campaigns and encourage them to help us by joining our efforts and becoming volunteers. Several edutainment workshops and videos are also presented on these stands depending on the target audience.

• **Plantation campaigns (public, scouts, private groups) - targeting: eco-friendly supporters**

Moreover, our awareness strategy targets groups from different ages and backgrounds. Jouzour Loubnan organizes many awareness and plantation activities in partnership with Scout du Liban and Guide du Liban, as well as other associations (Lebanese red cross, etc..), private corporates, special groups etc... During these joyful public and private plantation days, Jouzour Loubnan members train the participants (students, families, employees, children) on the protocol of plantation and work with them all day to plant as many trees as possible. Jouzour Loubnan also provides all the needed material (seeds, small trees, plantation tools, etc..), and looks after the planted trees for at least 3 years (irrigation and protection) until the roots of those baby trees have grown accustomed to their new environment.

• **Social Media - targeting: Jouzour Loubnan supporters and followers**

Finally, through the NGO's website www.jouzourloubnan.org and its social media platforms (Facebook and Instagram pages), the Jouzour Loubnan team keeps the general public and its growing community of followers updated on its awareness campaigns and activities, plantation days and other special events. These platforms are also used to shed the light on other green initiatives and green tips.

IT IS ONE OF OUR CORE MISSIONS TO KEEP SPREADING ENVIRONMENTAL AWARENESS ESPECIALLY AMONGST THE YOUNGER GENERATIONS AIMING FOR GREENER MINDS AND A HEALTHIER LEBANON.

3. HOW CAN YOU CONTRIBUTE TO SPREADING AWARENESS?

- Organize a workshop with your local community to highlight reforestation's vital need
- Invite Jouzour Loubnan team to your local fairs and activities to help us reach out
- Educate your family, friends and children on the threats of desertification and benefits of forests
- Share Jouzour Loubnan's awareness campaign messages on your social media networks
- Create your own awareness green messages and share them on our pages
- Join our public plantation days
- Donate to support Jouzour Loubnan's green mission

CHECK OUT OUR NEXT ARTICLE ON 'HOW TO GET INVOLVED'



driven by integrity

BEIRUTING AD

شاشة صغيرة وبتساع الكل

HOW TO GET INVOLVED

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 YOUNG AND MOTIVATED OR HAVE A YOUNG AND MOTIVATED SPIRIT?

You can participate in our plantation campaigns. We announce them regularly on our website www.jouzourloubnan.org and on Jouzour Loubnan social media platforms ([Facebook Page](#) / [Instagram Account](#)).



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.



ARE YOU IN THE REAL ESTATE DEVELOPMENT FIELD?

You can join Jouzour Loubnan Real Estate Reforestation Program: "1m² of newly created forest for each m² built" for a marginal cost of 2\$/m² 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 join 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 afterward. 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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otv ad

Naturally Evolving

The tree is a slow, enduring force straining to win the sky.
Antoine de Saint-Exupery, The Wisdom of the Sands



Exclusive Media Representative

LEBANON E-FLORA



The Lebanon e-flora website www.lebanon-flora.org is a large, free access database of detailed information on Lebanese plant species, including, but not limited to, their altitudinal distribution, flowering period, presence in national nature reserves as well as numerous photographs and descriptions for easy identification.

The Mediterranean region is one of the biodiversity “hotspots” of the world but this is threatened by climate change and human activities. Lebanon, due to its complex topography and hydrography, is rich in biodiversity with over 3,500 plant species identified. The benefits of this project are immense for both conservation and awareness. Centralization of data and information on the location of rare or endemic plant species will result in a better understanding of Lebanese flora and this is essential to biodiversity management and conservation.

This project was realized under the direction of Pr. Magda BOU DAGHER KHARRAT head chief of the Life and Earth Sciences Department at the Faculty of Sciences of Saint Joseph University.

The website creation is the result of a huge effort involving the work of ancient and contemporary botanists, the participation of twenty local researchers from different Lebanese institutions (universities, CNRS, NGOs) and images shared by hikers all over

Lebanon from the sea to the highest summits. The Lebanon e-flora database is dynamic and constantly improving, with increasing information available and the involvement of more people, scientists and amateur botanists. In 2013, *L'observatoire Libano- Français de l'environnement O-Life* has hosted Lebanon e-flora as one of its core projects as a national database for flora in Lebanon and a model to develop database for biodiversity in Lebanon.

Previously inaccessible information on botany in Lebanon will now be available to everyone, anywhere in the world. One goal is to make as many citizens as possible aware of the diversity of local flora as well as its fragility, heritage and medicinal importance and, finally, to involve everyone in this adventure to protect environmental biodiversity in Lebanon.



JG GROUP



THE DIFFERENCE THAT MAKES THE DIFFERENCE



*The tree is a slow, enduring force
straining to win the sky*
Antoine de Saint-Exupéry,
The Wisdom of the Sands



ACTIVITY 1 ECOPLANTMED PROJECT



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. Lead by the CIHEAM - Mediterranean Agronomic Institute of Chania (Greece, Kriti), Ecoplantmed is a partnership between: University of Cagliari (Italy, Sardegna), Saint Joseph University (Lebanon), Generalitat Valenciana, (Spain, Comunidad Valenciana) and National Research Institute for Rural Engineering, Water and Forestry (Tunisia, Ariana).

The project aims to contribute to halting the loss of biodiversity and to promote a sustainable development model in the Mediterranean region by enhancing the conservation of native plants and promoting their use in habitat restoration and the plant production sector. ECOPLANTMED is co-financed by the European Union through the ENPI CBC Mediterranean Sea Basin Program with Grant contract Identification number 8/77 of 16.01.2014. The project was selected under the 2nd call for standard projects and addresses Priority 2: Promotion of environmental sustainability at the basin level, and Measure 2.1: Prevention and reduction of risk factors for the environment and enhancement of natural common heritage. The project ECOPLANTMED total budget is 1.050 million Euro and it is financed, for an amount of 0.945 million Euro (90%), by the European Union (ENPI CBC Mediterranean Sea Basin Program) through the European Neighborhood and Partnership Instrument.

CONTEXT:

Besides being one of the world’s most bio-diverse regions, the Mediterranean Basin is also considered amongst the four most significantly altered biodiversity hotspots of the planet. Many valuable native plants are threatened with extinction due to the degradation of their habitats and related environmental risks, which mainly originate from human activities. This inestimable natural heritage should therefore be protected and enhanced through the improvement of local actors management capacity in order to implement preventive measures able to combine economic purposes with ecological restoration.

Combating the loss of biodiversity and promoting a sustainable development model in both sides of the Mediterranean is the challenge that ECOPLANTMED project intends to face. Local administrators will be encouraged to respect the commitments deriving from international conventions (such as the Convention on Biological Diversity) thanks to a common environmentally model significantly contributing to a joined development of the Mediterranean eco-region.

SPECIFIC OBJECTIVE

To promote the conservation, enhancement and sustainable use of native plants of the Mediterranean for ecological restoration of degraded habitats and for the development of new economic sectors by improving the management capacity of local actors

The project is composed from 6 different Work Packages (WP). The work package 6 is coordinated by the Laboratory of Seed Germination and Conservation (LSGC) - Faculty of Science Saint Joseph University. WP6 has as objective the development of a restoration methodology, based on the use of local genetic resources.

In Lebanon, the pilot actions will be conducted in Kfardebian in very close collaboration with Jouzour Loubnan.



The project focuses on the identification of the optimal procedures to make the use of native plant species favorable for both habitat restoration actions and establishment of green areas.

For this purpose 2400 cedars and Juniperus plantlets and many other selected taxa seeds were planted following different protocols. The pilot projects will represent a good test bench for the reproducibility and applicability of the obtained results and the developed procedures in similar cases.

WORK PACKAGE 6:

The pilot site of our study is divided into 8 different plots and is located in Kfardebian (kaza of Kesrewan in the mouhafazat of Mount-Lebanon) on the western slopes of Mount-Lebanon.



A - Seedlings plantation

2400 seedlings of Cedrus libani and Juniperus excelsa, were planted in six plots separated by 200 meters each, three plots to the east and three to the west, following an experimental design to study three different ecological parameters: Irrigation, plant nurse and exposition.

Each plot contains 400 seedlings: 200 cedars seedlings and 200 junipers seedlings, then each 200 seedlings were divided in four different treatment categories (figure 2 and 3).

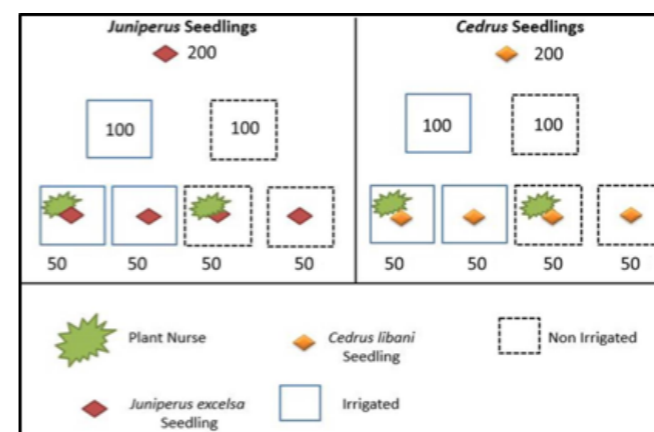


FIGURE 2: The experimental design of seedling planting in each 1 ha plot.

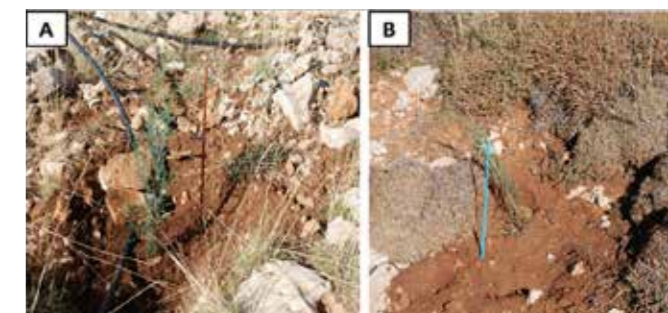


FIGURE 3: Juniperus excelsa seedling plantation – A: with irrigation without plant nurse – B: without irrigation with plant nurse.

B - Seeds Sowing

3330 seeds belonging to five different species (Cedrus libani, Crataegus monogyna, Cotoneaster nummularia, Juniperus excelsa, and Rosa canina) were sown in two different plots, following an experimental design to study the effect of the presence or absence of a plant nurse. A different number of sowing spots is chosen for each species to put a certain number of seeds (figure 4, 5 & 6)



FIGURE 4: Sown seeds species | A: Crataegus monogyna | B: Cedrus libani | C: Cotoneaster nummularia | D: Rosa canina | E: Juniperus excelsa

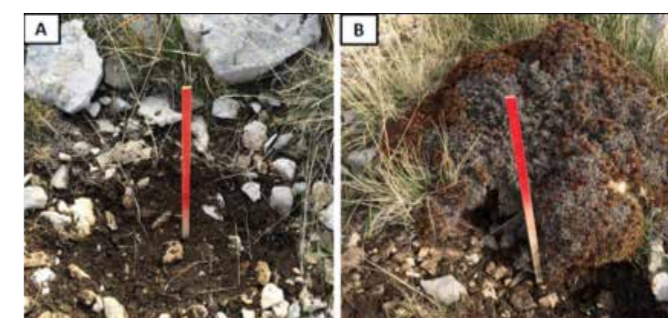


FIGURE 5: Cedrus libani seed sowing | A: without plant nurse | B: with plant nurse.



ECOLOGICAL RESTORATION IN THE MEDITERRANEAN REGION CHALLENGES AND OPPORTUNITIES

SAINT JOSEPH UNIVERSITY, 15 - 16 OCTOBER 2015

EcoplantMed
International Conference

CALL FOR PAPERS



We are glad to invite you to submit research papers to **ECOPLANTMED** International Conference hosted by the project partner Saint Joseph University (USJ), in Beirut, Lebanon on **15 and 16 October 2015**.

ABOUT ECOPLANTMED



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 project aims to promote the conservation, enhancement and sustainable use of Mediterranean native plants for habitat restoration and for the development of new economic sectors, by improving the management capacity of local actors.** **ECOPLANTMED** has a total budget of 1.050 million Euro and it is financed, for an amount of 0.945 million Euro (90%), by the European Union under the ENPI CBC Mediterranean Sea Basin Programme 2007-2013.



THE CONFERENCE TOPICS

The Conference focuses on ecological restoration of Mediterranean type habitats (forests, coastal/dune habitats, arid areas, wetlands, etc.) that faced degradation by urban development, fire, invasive species, overgrazing, quarries, mines, etc. It will address issues such as: cases of restoration of Mediterranean habitat types, criteria to select species for restoration purposes, importance of the seed banks in conservation of plants for restoration, genetic quality of plants, morpho-physiological quality of plants...

Two keynote speakers, Jordi Cortina and Thierry Dutoit, will be shedding the light on ecological restoration and related topics.



CONFERENCE VENUE

ECOPLANTMED International Conference will be held at Saint Joseph University on its new Campus of Innovation and Sports (CIS), Beirut, Lebanon.



PROCEEDINGS

The proceedings of all oral presentations (invitational conferences and oral communications) will be published in a special issue of Plant Sociology Journal.



CONFERENCE WEBSITE

For more information about the **ECOPLANTMED** International Conference, abstract submission and registration, please visit

<http://fs.usj.edu.lb/ecoplantmed/>.



Project funded by the
EUROPEAN UNION



ENPI
CBCMED
CROSS-BORDER COOPERATION
IN THE MEDITERRANEAN

ACTIVITY 2 EXPANSION OF THE LABORATORY

FOR SEED CONSERVATION AND GERMINATION



Plants and trees play a critical role in maintaining life on this planet. They sit at the base of the trophic pyramid, providing food all the way up the chain to humans at the top. They provide services such as climate regulation and flood defense. They contribute to soil formation and nutrient cycling, and they provide us with shelter, medicines and fuel. Nowadays, hundreds of thousands of plant species are threatened with extinction due to land-use change, over-exploitation, overgrazing, natural regeneration problems, etc.

But, having a wide range of techniques available to us, there is no technological reason why any plant species should become extinct. Over 90% of seed-bearing species studied to date produce desiccation tolerant ('orthodox') seeds. Following drying, orthodox seeds are capable of surviving long-term storage under cold conditions. Theoretically, seeds may survive for many decades, centuries and even millennia. After storage, seed dormancy can be removed, and it would be relatively easy to germinate seeds and propagate plants.

Therefore, Jouzour Loubnan is planning to expand the Laboratory for Seed Conservation and Germination, in order (1) to intensify seed conservation collaboration across Lebanon; (2) to develop and implement a seed collecting plan that prioritizes critically endangered species; (3) to conserve plant taxa that are prioritized for urgent conservation in the collecting plan through seed banking; (4) to research and disseminate data on the plant taxa collected for conservation and restoration activities and finally (5) to define germination protocols for species facing natural regeneration problem in-situ (in the wild).

In fact, five more additional rooms will be added to the current laboratory situated at the Faculty of Sciences of Saint Joseph University of Beirut in order to have more space for seed treatment, seed germination and conservation.

ECOPLANTMED project will be providing part of the new equipment for the new facility and Jouzour Loubnan will be financing the remaining costs.

In this same context, and because training the staff is vital to the operation of the new facility, Ramy Sakr the field and laboratory technical assistant participated in an internship for students who are interested to learn new techniques in cleaning, counting, stocking and germinating seeds of native species of the Mediterranean ecosystems.

The internship was held at the Seed Bank of MAICh University, Greece from February 16th till February 25th, 2015 in the framework of ECOPLANTMED project.

The main objectives of this internship:

- Learning new techniques of seed germination and getting familiar with the common germination protocols,
- Working with new equipment, and learning their benefits and utilities,
- Visualizing the different steps that seeds undergo in a seed bank, starting from the cleaning process till their storage,
- Visualizing the herbarium belonging to the seed bank, and the different steps to establish a herbarium specimen.



KEY DATES

May 15, 2015:

Deadline for abstract submissions.

September 15, 2015:

Regular registration period ends.

July 15, 2015:

Abstract review process complete.

July 30, 2015:

Final program with date and time of all sessions available.

October 15, 2015:

Onsite registration.

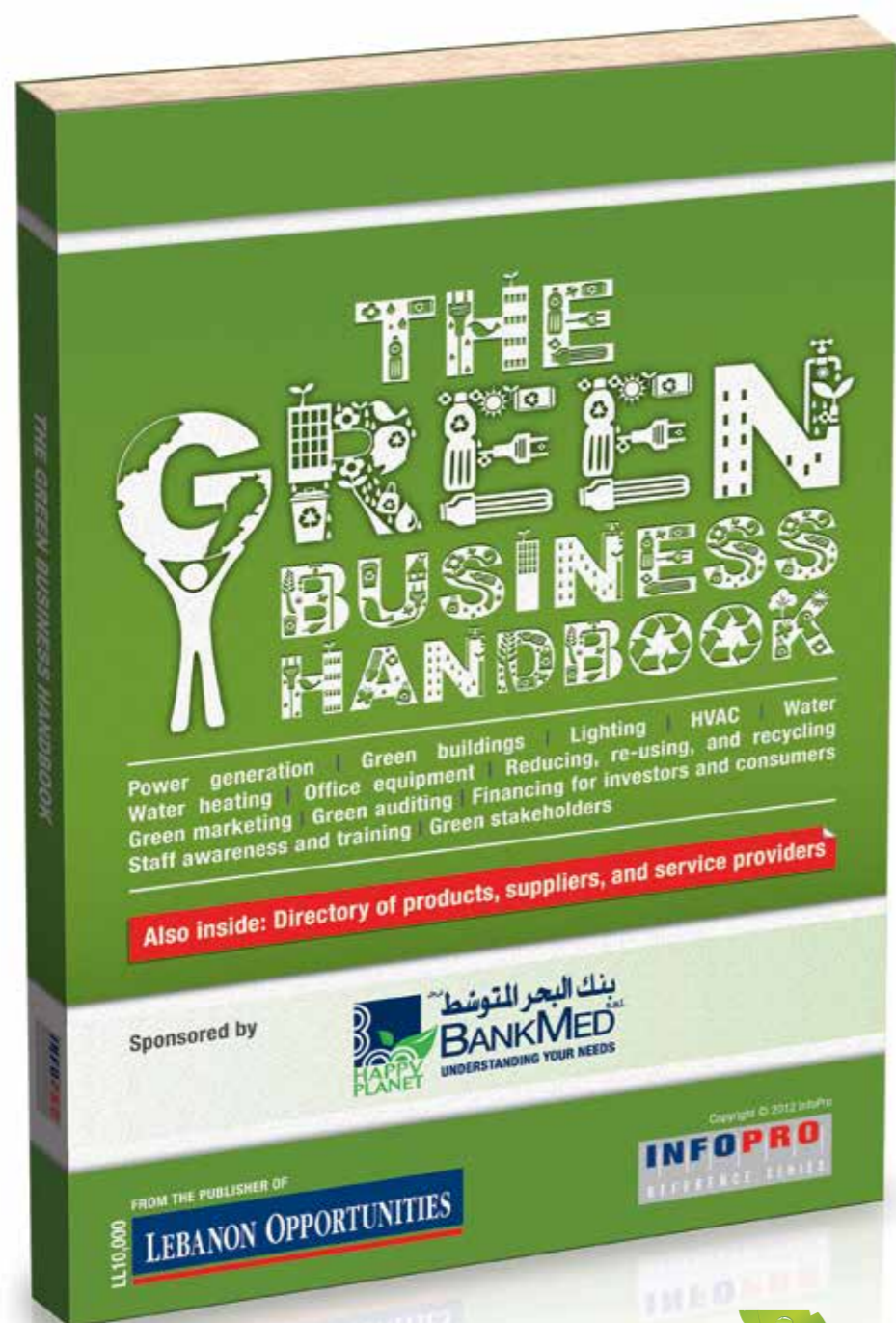


APRIL 16, 2016:

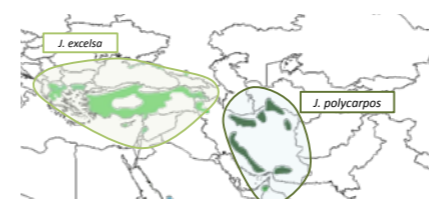
Deadline for sending papers to the president of the organizing committee for publication.

ACTIVITY 3

A NEW SPECIES OF JUNIPER IN LEBANON "JUNIPERUS POLYCARPOS"



Available in all bookstores
For more info or to order (01)739.777 ext.143



A l'Est de la région Méditerranéenne (ERM), plusieurs espèces de Genévriers (*Juniperus*) se développent et jouent des rôles clés dans leurs habitats respectifs. Tous les genévriers au Liban ont le même nom commun « Lezzab » alors qu'elles appartiennent à différentes espèces.

Les espèces *J. excelsa*, *J. foetidissima* ont des aires de répartition qui se recouvrent, alors que *J. polycarpus* aurait une répartition plus à l'est vers Géorgie, Iran, la péninsule arabique et Pakistan.

J. excelsa est l'espèce la plus répandue à l'Est de la région méditerranéenne avec des formations pures plus ou moins ouvertes. *J. foetidissima*, morphologiquement très proche de *J. excelsa*, se différencie de cette dernière par son feuillage plus épais ayant une couleur verte plus foncée et surtout grâce aux cônes femelles qui ont moins d'échailles et contiennent uniquement une ou deux graines. La distribution de *J. foetidissima* est liée à celle de *J. excelsa* mais avec une aire de distribution plus septentrionale et plus réduite.

D'autre part, lors des travaux de recherche précédents conduit dans notre laboratoire (Douaihy et al. 2011, 2012 ; Adams 2014), nous avons mis en évidence la présence de *Juniperus polycarpus* au Liban alors que dans la littérature l'aire de répartition de ce dernier s'arrêterait à l'ouest de l'Iran. En effet, Douaihy et al. (2011) a décelé dans le lot des populations de *Juniperus excelsa* étudiées, deux populations qui se distinguent nettement des autres.



Juniperus excelsa | Hermel



Juniperus foetidissima | Quammouah



Juniperus oxycedrus | Ras el Abd



Juniperus foetidissima | Quammouah



Juniperus polycarpus | Aarsal

Il s'est avéré que ces deux populations appartenaient à *Juniperus polycarpus* (Adams et al., 2014).

Des études écologiques (Douaihy et al., 2013), biométriques (Douaihy et al., 2012) et biochimiques (Adams et al., 2014) appuient également cette découverte. La forte ressemblance morphologique entre ces deux taxons rend leur distinction difficile, alors que génétiquement, deux pools bien distincts peuvent être discernés.

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ARCENCIEL ACHIEVEMENTS 2014

Arcenciel is a non-profit, apolitical and non-confessional association established in 1985. Its mission is to participate in the sustainable development of society by supporting vulnerable communities and integrating marginalized individuals. On November 18, 1995, the organization was recognized of public utility by the presidential decree N.7541. Arcenciel conducts its operations through 8 programs and 13 centers spread over the whole Lebanese territory.

2014 has been an active year for Arcenciel; we served people from all walks of life, landed regional environmental and agricultural projects, continued our internal restructuring...

These numbers include products and services physically provided to people, they exclude:

- the impact of treating the waste produced by 80% of hospitals in Lebanon
- the impact of recycling more than 360 tons of solid waste
- the impact on people's well-being of our agricultural program
- the 100,000 visits at our ecotourism domain in Taanayel



80,000
PEOPLE SERVED



2.6 MILLION
SERVICES PROVIDED

219 PERSONS
PER DAY

IN 2014, ARCENCIEL WAS AWARDED:

- Chevalier dans l'Ordre national de la Légion d'Honneur by the French Government
- The UN Intercultural Innovation Award - by the UN Alliance Of Civilizations
- The National Energy Globe Award - by Advantage Austria, rep. the Republic of Austria
- The Award for Impact on Civil Peace - by the NGO collective Wahdatouna Khalasouna
- The Best Idealistic NGO award - by the UNDP and the Lebanese Ministry of Social Affairs
- The Earth Card - by the UNDP and the Banque Libano-Francaise
- The Waterfront City Cares Trophy - by Waterfront City



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LEBANON MOUNTAIN TRAIL THRU WALK 2015



For the 7th consecutive year, the Lebanon Mountain Trail Association is organizing its annual April Thru-Walk where a team of Thru Walkers will hike the entire 470 km from Andqet in the North to Marjaayoun in the South. They are joined throughout the trek, by other hikers who participate for varying durations (weekends, weeks, etc.)

120 hikers from 13 countries will be participating in the 2015 Thru Walk

This year we are walking for our Cultural and Archaeological Heritage. Many generations took the trails before us. They left behind cultural and archaeological remains and assets that we need to take pride in and safeguard for our benefit and for the benefit of the generations to come. Unfortunately many of these sites are degrading and slowly disappearing either by neglect or by lack of funds. They urgently need attention and conservation!

During the Thru Walk, we're shedding the light on 4 of them.

1-THE AFQA ROMAN TEMPLE COMPLEX - MOUNT LEBANON

One of the most important religious sanctuaries lying above Jbeil with strong religious significance to the inhabitants of the city of Byblos. The temple was constructed in honor to Achtarout (Venus), the Goddess of Beauty and lover of Adonis, the God of Desire and Beauty. The temple was partially destroyed in 523 A.D. by the emperor Constantine the Great due to its pagan significance. As a result, the temple of Achtarout/Venus was transformed into a Christian church.

2- THE EMIRS CHEHAB CITADEL OF HASBAYA - SOUTH OF LEBANON

The citadel has a rich history that goes back to the Roman times, if not earlier. There is evidence of a previous Roman temple of which no remains are visible other than foundation base blocks. Excavations might reveal more. The present status goes back to the late 12th c. from the Crusaders period, where a military watch tower was built to survey the area.



3- THE CHURCH OF SARKIS AND BAKHOUS IN QOBAYET - NORTH OF LEBANON

The church of Sarkis and Bakhous was built in honor of 2 saints (Sergius and Bacchus), who became martyrs beginning of the 4th c. A.D. The Saints were officers in the Roman army in Syria. Their Christian faith was revealed when asked to attend to sacrifices to the God Zeus. They were ultimately tortured to death by the Romans in 303 A.D. As a result, there are many churches around the Middle East dedicated to their martyrdom. The church is said to date to the 5th-7th c. A.D. according to local present day historians. Further archaeological scientific research is needed on site.

4- THE HADRIAN INSCRIPTION OF TANNOURINE - NORTH OF LEBANON

The Roman inscription carved into the rock depicts the region's historic character. A decree imposed by the Roman Emperor Hadrian (117 to 138) forbids its citizens to cut down namely juniper, oak, cedar and pine trees and reminds the indigenous of the right of the emperor on these forests. During the April Thru-Walk, the LMTA is organizing cultural stops at each of the sites to shed the light on their importance. Cleaning activities by hikers, volunteers and local communities are scheduled.

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CECARS BOX: Adoption Kit

Thanks to the "CEDARS BOX", (a concept developed by Clement Tannouri), contributing to the preservation of the Cedar of Lebanon and the reforestation of the country's largest natural heritage, is now Simpler than Ever. Indeed, "CEDARS BOX" gives you the opportunity to adopt a Cedar Tree, give it a Life and a Land on which it can grow so that in turn, it becomes a witness to our existence and history.

No need to have a green thumb or to climb mountains. In fact, it is the association "Jouzour Loubnan" that will plant the Cedar Tree that you will be adopting. And since the adoption is done online, all it requires is a simple click. "CEDARS BOX" is a generous gesture that is rich in meanings and importance and is within everyone's reach.

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CECARS BOX: Ready to Plant

FOREST FIRE RESEARCH AT THE UNIVERSITY OF BALAMAND



Increasingly, Lebanon's forests are exposed to degradation due to urbanization, fires, climate change, human neglect, improper management, outdated laws, and poor law enforcement. During the last decades, changes in traditional land-use and lifestyles, depopulation of rural areas, decreases in grazing pressure and wood gathering, and increases in the urbanization of rural areas are leading to the recovery of vegetation and an increase in accumulated fuel.

Land-use changes are found to be parallel to the changes in the fire regime, from being few in number and affecting small areas, to becoming very numerous and affecting large extensions every year. Although the main reason for fire increase in the last decades is changes in land use, climatic factors should be considered as a contributing factor. In this context, the Biodiversity Program at the Institute of the Environment, University of Balamand has been extensively involved

in developing research and studies for improved assessment, monitoring, and management of wildfire risk in Lebanon. These are considered as necessary steps to help in developing the capacity of stakeholders in assessing and adaptively managing wildfire risk in Lebanon. Most recently, the Program finished a 2-year project entitled "Towards a better assessment and management of wildfire risk in the Wildland-Urban Interface in Lebanon: gaining from the US experience" funded by the US Agency for International Development (USAID) and supported by the Partnerships for Enhanced Engagement in Research (PEER) in agreement with the US National Academies of Science (NAS). According to Dr. George Mitri, the Program Director and the Principal Investigator of the project, 33% of the Lebanese territory (including forests, shrublands, and grasslands) is characterized by moderate to very high risk of fires, while the average length of the fire season is 147 days knowing that the season can extend up to 200 days in some years. In addition, Lebanon's

climate proved to have increasing trends of drought promoting recurrent, larger, and more intense and severe wildfires in the near future, especially with the continuous lack of implementing Lebanon's National Strategy for forest fire management (Decision No.52-2009) and proper forest management planning. The results of the USAID-PEER project most of which can be accessed through a web-application tool called FireLab (ioe-firelab.balamand.edu.lb) in addition to the results from pilot community-based fire risk management project, previously developed and implemented in partnership with Lebanon Reforestation Initiative (LRI), are expected to pave the way towards a better assessment and management of wildfire risk in Lebanon, and to contribute to better legislative measures in the forestry sector.

Contact:

George Mitri, Ph.D.
Director of the Biodiversity Program
Institute of the Environment,
University of Balamand - Lebanon
Email: george.mitri@balamand.edu.lb





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UNE CEDRAIE SUR UN TERRAIN PRIVE

En 1974, Elie Badaro décide de planter des cèdres.

Il rentre en contact avec son ami John Stephens, P.D.G. d'une multinationale: "International Paper Company".

A la demande d'Elie Badaro, John Stephens expédie par avion 8.000 plans de Cedrus Libani.

Ces plants, après avoir souffert dans des entrepôts, seront acheminés vers Laklouk et plantés dans une parcelle de terrain qui appartient à sa femme, Layla Younes Badaro.

Une dizaine de personnes s'attellent à les planter d'une façon arbitraire, en creusant des trous d'une trentaine de centimètres.

Des 8.000 plants, non irrigués, il est resté 3.000 qui ont donné, 40 ans plus tard, des arbres qui mesurent dix mètres en moyenne.

En 2001, Kamal Elie Badaro décide de lotir cette parcelle et de réserver la portion plantée de cèdres comme jardin public comme le prescrit la loi.

Désormais, ces cèdres pousseront dans un climat propice, à 2.000 mètres d'altitude, en mémoire de feu Elie Badaro qui disait:

“SI CHAQUE LIBANAIS AVAIT FAIT PAREIL, ON AURAIT REBOISER NOTRE LIBAN”

Kamal Badaro



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USAID'S LRI PROMOTES A GREENER LEBANON



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Over decades, Lebanon has been increasingly facing environmental challenges causing serious damage to its forests and leading to the degradation of its green cover.

To overcome these challenges, hundreds of men and women in more than a dozen communities throughout the country committed themselves to restore the damaged ecosystems of their communities and improve the livelihoods of future generations, an effort that resulted in the planting of more than half a million native trees since 2011. Their work was facilitated by the Lebanon Reforestation Initiative (LRI), a multi-year program funded by the United States Agency for International Development (USAID) and implemented by the United States Forest Service (USFS).

Beyond planting trees, LRI implemented numerous activities and achieved significant technical improvements during the past four years, largely through its extensive community engagement strategy and capacity building process. These activities include sharing reforestation best practices, introducing new seedling production techniques, establishing

“The Cooperative of Native Tree Producers of Lebanon,” developing an advanced mapping platform, and replicating new approaches for wildfire management.

LRI also strived to empower women and involve them in the environmental cause. For two consecutive years, LRI celebrated Women’s Day by engaging women and their families in a public reforestation day. This year more than 200 volunteers from various Lebanese regions gathered to plant 1,000 native seedlings.

Furthermore, LRI launched its first twinning activity in January 2015, as part of a long-term twinning program that aims at partnering previously mentored LRI communities with other surrounding ones for the purpose of knowledge transfer, inter-sectarian dialogue, as well as building a lasting bond between both groups. Based on pre-defined selection criteria, Kfar Denis was selected to be twinned with LRI previously mentored Rashaya community. Both communities organized their first joint planting activity on March 26, 2015 in Kfar Denis, in the presence of Heads of Municipalities of both villages.

In line with LRI’s strategy to sustain and continually improve reforestation efforts, LRI organized a workshop on the 23rd of April, 2015 on the occasion of Earth Day under the title “Sharing Modern Reforestation Techniques for the Sustainability of EARTH’s Forests.” The workshop, which was attended by various reforestation stakeholders in the country, established a reforestation platform that helps ensure the sustainability of Lebanon’s forests.

Through all these activities, LRI is providing local communities and their constituent stakeholders with ownership of reforestation projects, which helps promote success and longer-term sustainability.

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