



• Creativity • Collaboration • Continuity • Community

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## FEATURE STORY

### THE ECOPLANTMED CONFERENCE: PRESERVING BIODIVERSITY IN THE MEDITERRANEAN

On **October 14 and 15, 2015** an international conference took place at the Saint Joseph University in Beirut, under the title of "**Ecological Restoration in the Mediterranean Region: Challenges and Opportunities**".

The conference aimed at helping halt the loss of biodiversity and promoting sustainable development models. Scientists and ecologists from **Spain, Italy, Greece, Tunisia and Lebanon** shared their experiences in restoring different regional landscapes: forests, dunes, arid areas, wetlands, etc. The Lecturers focused on the importance of conserving and using native species in restoration projects and the plant production sector, as well as on how to face climate change by increasing diversity and combining local seeds with seeds from areas with a climate close to the predicted one (e.g. from a hotter climate).

I was glad to hear specifically about the following local initiatives:

#### Restoration project of coastal sand dunes in Ouzai:

Landscape Design students of the **American University of Beirut (AUB)** are planning to restore parts of Beirut's Ouzai coast by relocating a zone of illegal settlements, managing sewage water with bio-swales, and re-vegetating dunes with native plants to attract animals and insects to re-colonize the area. I hope this project will be actually implemented.

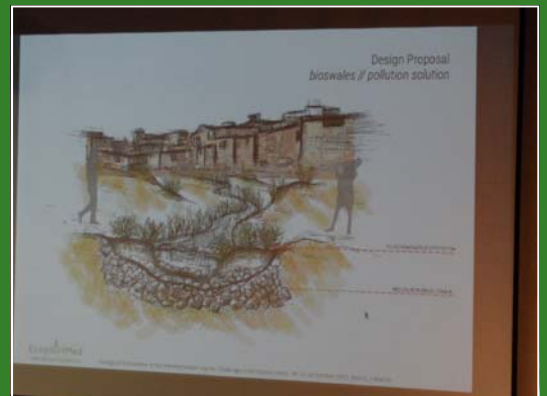
#### EcoPlantMed pilot site in Lebanon in Kfardebian:

Since September 2014, the Lebanese NGO **Jouzour Loubnan** has been working on restoring the original ecosystem on a 6-hectare publicly owned land at 1,900 m altitude, which has been degraded by the over-cutting of trees and over grazing. They experimented with different planting methods of **cedars** (*cedrus libani*) and **juniper trees** (*juniperus excels*) on different slopes by planting seeds and seedlings, with or without nursing plants, with or without irrigation.

#### Mediterranean Mosaics Project in the Shouf Biosphere Reserve:

This project aims to increase the resilience of forest ecosystems to climate change (longer summer drought periods, increased risk of forest fires, decreasing rainfall).

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*Bioswales design proposal for Ouzai (South Beirut)*



*Mediterranean Mosaics project by Shouf Biosphere reserve*

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## FEATURE STORY

### Continued from Page 1

It has designed several pilot initiatives, including: re-planting abandoned terraces with native trees and herbs of economic value, setting up a bio-mass plant that combines woodchips (from forest thinning and agriculture waste) and olive pumice to make briquettes that can be used for heating, experimenting with planting seeds and seedlings without irrigation.

The conference was held within the framework of the **ECOPLANTMED: "ECOLOGICAL use of native PLANTS for environmental restoration and sustainable development in the MEDITERRANEAN region"**, a joint Mediterranean initiative based on collaboration among seed banks, research institutes and institutions dealing with native plant conservation and management.

Shared by Rita Khawand



Nizar Hani (Mediterranean Mosaics project)

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## LET'S SHARE OUR NEWS

### EXPLAINING PERMACULTURE IN ARABIC THROUGH VIDEO

*For many permacultivators in the Arab world, the lack of permaculture resources that take into consideration local climates and plant species, social conventions, etc. can be frustrating. There is even an absence of sufficient resources in Arabic, which is especially an issue when reaching out to growers in rural communities. But this situation also opens a world of opportunity for permaculture "entrepreneurs" to take the initiative and fill this gap. We are pleased to share with you one such initiative by our friends Sari Hawa and Jenny Webster who shot a video in Morocco last year to introduce permaculture to Arabic-speaking communities (with French subtitles). Read about it, check it out and share it.*

Almost a year ago, I spent a whole month travelling through **Morocco**, filming permaculture workshops given by **Bernard Alonso** ([www.permacultureinternationale.org](http://www.permacultureinternationale.org)) to create a short movie for the **RIAM (Réseau d'Initiatives Agroécologiques au Maroc)**, an NGO whose goal is to support the development of sustainable projects in the country.

Morocco being threatened by **desertification**, water took a paramount importance in any project related to the natural world. One of the main points of the workshops was how to respect water, how to preserve it, and how to use it intelligently.

The people gathered around these activities had a common interest in transitioning to a way of life that respects a certain balance between the natural ecosystems and the human lifestyle. During the workshops, the people went through the theory and the practical experience of the tools offered by permaculture, including eco-construction, general Design, water management and filtration, gardening, food forests, Human Permaculture and more.

What always strikes me in such workshops is the intensity of the human experience. I am constantly reminded that the most important transformation in these times of transition is the personal transformation, the one that happens within ourselves. This leads me to the following point: Permaculture is often mistaken to only be a new way of planting food. Permaculture is actually founded on 3 ethics, one of them being **Earth Care**. The 2 other ethics, just as important as the first one, are **People Care** and **Fair Share**. A healthy human environment is key to creating functional projects, and the key to a healthy human environment is to know one's self, to know one's skills, talents and interests, but also one's limitations and shortcomings. Having a balanced team helps us create healthy group dynamics that allow us to achieve the projects that support our collective evolution.

The end-result of that filming trip is presented in this short video **La Forêt, le Sol, l'Eau** (Forest, Soil and Water). Its purpose is to promote Permaculture in the Arabic-speaking world. The movie was filmed and edited by **Jenny Webster** and myself, and narrated by **Najlae Ben Marzouk**.

Shared by Sari Hawa



Click on the image above to watch the video on YouTube and share it in your circles



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## LET'S SHARE OUR NEWS

### MEET SALLY, THE FIRE SALAMANDER FROM LEBANON

Sally is a **Near Eastern fire salamander** (*Salamandra infraimmaculata*) or *Arouss el Ayn* (عروس العين - The spring's bride). I found her 2 years ago as a late baby in an irrigation channel for watering orchards that was close to drying up. She has been a great family member since then...

Sally has her own wet enclosure in my room, with lots of hiding and climbing places. Her food includes earthworms, mealworms, slugs and snails. Her presence turned to be great for spreading awareness related to fire salamanders in Lebanon

*S. infraimmaculata* is the only salamander species in Lebanon. Its members can be easily identified by their shiny soft black skin with bright yellow spots on the back (as warning coloration). These amphibians can live more than 20 years, reaching sizes of up to 30 cm. They are distributed in altitudes between 180 and 2,000 meters (mountainous and hilly regions), often in damp woods and grooves near slow-moving fresh water streams and pools.

Adult salamanders live on land, but they breed in water where the female releases the larvae that developed inside her oviducts (ovoviviparous). Breeding occurs in winter, but one year can elapse between fertilization and the release of the larvae when the female chooses several ponds she finds safe enough. The larvae are born with 2 pairs of legs, 2 sets of external gills and a finned tail for swimming. At this stage salamanders feed on mosquito larvae, aquatic insects, crustaceans and tadpoles of frogs and toads. They are even known to resort to cannibalism (eating their own kind), yet they are more likely to eat unrelated larvae than their litter mates. In the absence of fish in their birth pond, salamander larvae are at the top of the food chain.

Tadpoles grow but stay in their aquatic form for 2 to 4 months (5-7 cm) before they undergo metamorphosis, losing their gills and tail fin, and leaving water in their terrestrial adult shape. Adult fire salamanders aestivate during summer, regaining their activity when the weather is cooler. They spend the daytime hiding under leaves, rocks or roots, and come out at night to search for food. As adults they feed on earthworms, slugs, snails, insects, small invertebrates and even other smaller salamanders. This diet gives them an important role as pest controllers.

Unfortunately, the absence of laws protecting wildlife in Lebanon, lack of awareness and ignorance result in habitat loss for salamanders, making them a threatened species. Firstly, random development and road building are direct causes of the fragmentation of their natural habitats. Secondly, pollution of water bodies by pesticides and sewage, and drying up of water sources due to unstudied extractions of underground water are the main causes that prevent salamanders from breeding and their larvae from developing. In addition, many salamanders are killed by cars while crossing roads, or even worse, some people kill these animals due to the wrong idea that salamanders are fireproof creatures that poison their water.

It's critical to spread more awareness as to the importance of fire salamanders and all creatures in the circle of life, and the role that they play in keeping nature's equilibrium before it's too late.



Young Sally (notice the external gills and tail fin)



Sally (grown up)

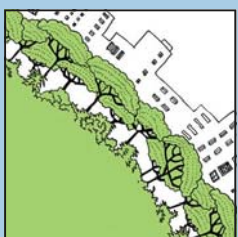


A fire salamander in the wild (not Sally)

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## UPCOMING EVENTS

### HORSH BEIRUT PUBLIC PARK REOPENING



**EVERY SATURDAY**

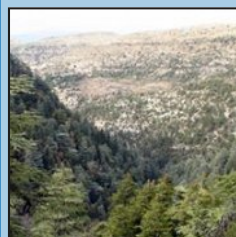
**7:00 a.m. - 7:00 p.m.**

Horsh Beirut, near Tayyouneh roundabout, Beirut

Discover Beirut's largest green space, finally reopen for the public.

<http://www.lebtivity.com/event/horsh-beirut-opening>

### GREEN STEPS IN EH DEN BIOSPHERE RESERVE A DAY OF HIKING AND PLANTING CEDARS



**NOVEMBER 8, 2015**

**7:30 a.m. - 6:00 p.m.**

Ehden Biosphere Reserve

Hike, plant cedar trees and pick seeds. Also discover Ehden's historical landmarks.

Fees: LBP 40,000/person

<http://www.lebtivity.com/event/green-steps-planting-cedars-and-picking-seeds-in-ehden-biosphere-reserve>

### DISCOVER MAR MIKHAEL STREET CAR-FREE DAY



**NOVEMBER 15, 2015**

**10:00 a.m. - 8:00 p.m.**

Mar Mikhael, El Nahr - Beirut

Exhibitions, food and crafts, activities, flea market and more.

<https://www.facebook.com/events/640733006066741/>

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## LET'S SHARE OUR NEWS

### EARTHSHIPS: TRULY SUSTAINABLE AND OFF-GRID HOUSES

I stumbled upon **Earthship Biotecture** and its main protagonist, *Michael Reynolds*, by chance around 3 years ago. For 40 years now, he has been building different models of **fully autonomous houses**. All his constructions are based on what he calls the **6 Natural Principles**. He hasn't invented anything, but he has managed to combine these phenomena to achieve houses that are totally **off-grid** (water and electricity).

**1<sup>st</sup> Principle | Thermal/Solar Heating & Cooling:** Using a "Canadian well" or "Provencal well" system for ventilation. This consists of buried pipes behind the house, and connecting them to a skylight or Velux window above the building's front (which acts as a greenhouse).

**2<sup>nd</sup> Principle | Solar & Wind Electricity:** Using photovoltaic panels that can be coupled with a wind turbine to produce electricity. The secret is to have the house facing South in the Northern hemisphere (and North in the Southern Hemisphere).

**3<sup>rd</sup> Principle | Contained Sewage Treatment:** This involves a septic tank (even a conventional one) to separate solid waste from liquid one. Liquid waste can be reused for waste evacuation, or to water trees whose roots will filter it for later use in irrigating vegetable crops.

**4<sup>th</sup> Principle | Built with Natural & Recycled Materials:** Reynolds builds walls and foundations with tires since they are plentiful and free (this also reduces waste). These are then packed with rammed earth from the house's site. This structure accumulates heat from the greenhouse (see above) inside. To reduce the use of concrete, cavities can be filled with glass bottles, aluminum cans or small rocks. The tires' bottom consists of a simple cardboard to hold the rammed earth in.

**5<sup>th</sup> Principle | Water Harvesting:** This involves collecting rainwater in cisterns buried behind the house to avoid bacteria. The water is then passed through a filtering station and can be used for washing. The resulting grey water will be filtered again and used for irrigation in the greenhouse. Finally, it will be redirected to the bathroom where it will become black water and follow the 3<sup>rd</sup> Principle.

**6<sup>th</sup> Principle | Food Production:** In Earthships, the only windows are located at the front of the house (facing South) to bring in light and warmth (accumulated by the tire walls, and released during the night). This creates an interior greenhouse that can produce food and filter water.

I decided to do some more research and actually experience living in such a home. At the time, I visited the only existing Earthship at the time in Normandy, France. This only encouraged me to know more about these structures and maybe even start building my own personal project.

I had the chance to meet Michael in Sweden over a 3-day seminar. He convinced me to enroll in his academy in Taos (USA) for a 1-month course that involved both theory and practical workshops 6 days a week. Back in France, I got the chance to participate in a workshop at the Champs-Romain commune with the association "Habite Ta Terre" for 3 weeks during which we built an Earthship-inspired house.



*Leveling the rammed earth tire wall for the greenhouse (Taos)*

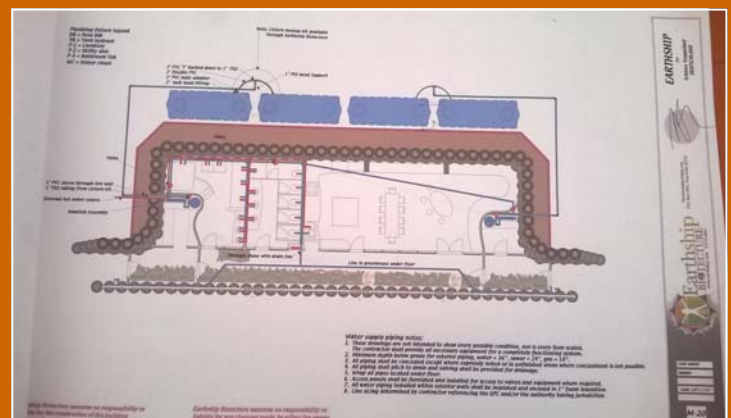


*Roof isolation with cardboard (Taos)*



*Recycled fiberglass panels for roof isolation (Tempelhof)*

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## LET'S SHARE OUR NEWS

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Earthship Biotecture then invited me to volunteer in building and Earthship in the Tempelhof community south of Nuremberg, Germany. This became a collective dining hall with a kitchen, shower and WC area for 14 families living in nearby camper vans, caravans or yurts (the rest of the community - 100 adults and 50 children - already had such facilities).

Now, I am still convinced of the ecological interest of the 6 Natural Principles and I am curious about exploring different building materials - perhaps more natural ones like cob, adobe or straw. I am currently looking for different workshops to learn more about them.

The really fascinating thing about this type of construction is the sharing that goes hand-in-hand with the apprenticeship. There were 17 nationalities represented in Tempelhof, for example, more than enough to build a network of a global movement providing mutual support and knowledge around a residential structure that respects both people and nature.

To find out more, go to: <http://earthship.com/Learn-More/>

*Shared by Philippe Rabaix*



*Michael Reynolds*

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## RE-MAPPING LEBANESE BUS ROUTES FOR SUSTAINABLE COMMUTING

The **Bus Map Project** is an idea that began when two separate, yet similar, lines of thinking came together in mid-2015. Co-initiated by *Chadi Faraj* and myself, the project aims to catalyse and promote a collective, grassroots, DIY approach to public transport advocacy.

In 2008, Chadi began a personal project to map the major bus routes in Lebanon, using GPS data gathered through a smartphone. The outcome of his efforts can be found at [OnlineLebanonBuses.com](http://OnlineLebanonBuses.com), where an Android app with the same name is also available to download. Around the same time that Chadi was developing his app, I was questioning the value of owning a car. This fairly simple thought eventually led me to pursue a doctoral degree on the politics of public transport in post-war Beirut. During my research, I stumbled on Chadi's work, and reached out to him to learn more about his experience. He told me how he'd largely given up on his project, since it did not seem like people were that interested in riding the bus. As we discussed the major obstacles facing the promotion of public transport in Lebanon, we quickly realized that we shared many of the same analyses, hopes and concerns.

We developed **Bus Map Project** because we believe that it's not enough to simply call for improvements. The crisis of car-dependency (which manifests itself as a crisis of traffic congestion) is too great for us to sit around and wait for the government to 'fix' things. Taking inspiration from 'tactical' interventions like Rotaract's 'Bus Stops Project,' we decided that a fundamental gap had to be filled: people should know that a public transport system (in one shape or form, however imperfect) already exists in Lebanon. The best way to show this system is to map it, "turning chaos into order," as our friends at Zawarib often say.

Hence, the map is a way to give people other options. Knowing that the 'Number 6' bus will take you from Cola to Byblos, for example, or that the 'Number 2' will take you from Hamra to Antelias, might make you think twice about driving. Some people will object and say that the bus system is not "efficient, reliable, fast or clean" enough to attract new users. We don't want to engage in such arguments; we simply want to show that many car trips can be reduced today. We also want to insist that for many people in Lebanon, bus travel is the only option. Hence, we hope that encouraging more social mixing between people who want better and those who make do will, over time, will build up momentum for change, from the bottom-up.

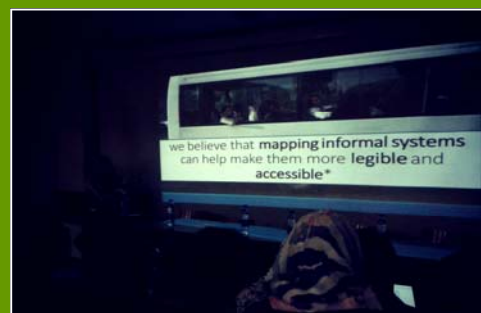
But we don't want to get ahead of ourselves either. Right now, we are trying to slowly build up a sustainable platform that encourages a sense of community while gathering data that can be combined in a wholly open-source bus map. Since our 'soft launch' in July, we have focused our attention on maintaining a Facebook page ([Facebook.com/BusMapProject](https://www.facebook.com/BusMapProject)) to promote our ideas and share snippets of what we've gathered so far. Behind the scenes, we have also worked to build up connections with likeminded people who can help make this a truly collective project. So far, we've partnered with two university lecturers who are integrating this project into their Graphic Design courses this semester. We hope that their output will serve as a basis for a wider call for participation in early 2016.

It is sometimes said that "the means are the ends in the making" – hence, we are very mindful about keeping this project open and participatory. So get in touch if you have any ideas!

*Shared by Jad Baaklini - email: [jad@beirut.com](mailto:jad@beirut.com)*



*Number 16 bus in Qornayel (Photo by Bus Map Project)*



*Above: Chadi Faraj presenting the project during the #CitizenDesigner event at the Lebanese University in Hadath (Photos by Fatima Farhat)*

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## LET'S FOCUS

### TURNING WATER HARVESTING PONDS INTO MULTI-FUNCTIONAL LANDSCAPES

At a time of rising **water scarcity** awareness and the call for increased action towards sustainable management of water resources, traditional sustainable practices, such as **Rain Water Harvesting Ponds (RWHP)** that had been in place for centuries, are being abandoned. These are a valued part of the heritage of some Northern and Southern Lebanese villages, as in the case of **Akoura**.

Water harvesting is indeed a very important aspect of our lives. Now that water scarcity has become a serious issue in Lebanon, I conducted research for my thesis to examine the possibility of developing RWHP areas and promote their value. Promoting RWHP has huge potential if the ponds are used not only for agriculture, but also for creating socio-cultural landscapes.

At the moment, water collection ponds in Akoura only have a mono-functional use; as an agricultural landscape. I wanted to explore the significance of having multi-functional cultural purposes for such ponds as multi-functional spaces (i.e. recreational, aesthetic, fishing, working opportunities, etc.) and its benefits for the local community.



*Akoura ponds*

It takes good water management strategies to transform RWHPs into multi-purpose landscapes. Achieving this would require using the various landscape layers to promote the development of new functions and create multifunctional landscapes. Designing solutions involves embracing the various assets and capacities of an ecosystem in a specific area, from regulatory capacities (i.e. waste reduction and reuse) to socio-cultural implications (i.e. visual quality, human health, and recreational opportunity). Getting people involved helps both the natural and built environments attain sustainability for the better human good.

In my research, I aimed to highlight considerations related to RWHPs aside from pointing out the natural factors and their uses; I wanted to touch on the physical, social and ecological dynamics underpinning their development. Lastly, I wanted to elaborate on the framework for negotiation to prompt the promotion and enhancement of activities around these ponds.

Therefore, my objectives concerned the development of human beings, biodiversity, conservation and the paradigms regarding development and conservation. They related to the landscapes' physical existence and dynamics in a social, ecological and economic light, and how they affected stakeholders. My case studies included RWHPs in Kfar Tebnit, Barouk and Bnachi in comparison with Akoura.

The relations between the economic, social and environmental dimensions of RWHPs in each area are what creates multifunctional landscapes. These three different functions are advocated by the sustainable development's framework, shedding light on their interconnectedness and proposing to offer facilities and amenities in numerous applications.

Multifunctional landscapes with RWHPs can host outdoor activities (i.e. walking, hiking, jogging, etc.) and other forms of leisure or health-associated activities such as environmental learning (i.e. nature, ecosystems, biodiversity), communal meetings and an escape from urban and industrial atmospheres.

The cedar nature reserve in Barouk (Mount Lebanon) has two ponds: The bigger pond serves as a corridor for migratory birds, and the smaller one as a drinking spot for birds and animals. Their other purposes include providing water to put out fires, irrigating plants and serving as a wild-life habitat.



*Barouk ponds*

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## LET'S FOCUS

### *Continued from Page 6*

The pond in Kfar Tebnit (South Lebanon) has been there for ages and is used for swimming, washing and irrigating. It has also turned into a rural natural park destination for residents and visitors. They enjoy the landscape and the waters, particularly around sunset in spring. It is a meeting point for people of different ages and places.



*Kfar Tebnit pond*

Bnachii (North Lebanon) was once covered with olive trees and vines but is now an artificial lake through which a dam allowed creating a nearby pond. With time, the Bnachii lake and its banks were converted into a tourist destination with cafés spread around. Eventually, parts of it became one of Lebanon's most diverse natural reserves.



*Bnachii pond*

It was a friend who told me about Akoura when I decided to do my research on rainwater management. She showed me the area on Google maps and I was immediately attracted by the site. It held special significance for me because the ponds there were used only for the purpose of irrigation which is not a widely profitable activity for the village and its residents. There are several lost opportunities there in terms of economic development and nature conservation.

From the case studies I conducted in the field, I noticed that Akoura faced a few problems, which - if tackled and managed properly - would be solved and turned into opportunities on all levels. For now, however, compared to how the three other areas I listed use their ponds, it would seem that Akoura is a desperate case, hence, my research suggested recommendations for Akoura's development.

Economically, the different potential purposes for the ponds (social and touristic activation) would enhance Akoura's economical status exponentially, bearing in mind that there is no call for any irrigation during half of the year when the area is covered with snow, since no farming activity takes place in that time.

Covering the impacts and feasibility assessment from all perspectives when it comes to Akoura outlines the criteria for finding new uses for its ponds. For instance, the ponds on upper hills are used to naturally irrigate the lands below them, using gravity. Ponds on the lower levels could be used as cultural and leisure hubs in a naturally beautiful atmosphere, rather than having farmers invest more time and money in them to pump water upwards.

As another example, using the collected rainwater for fishing (which would also reactivate the valley's restaurant), and for winter activities like snowshoeing, the economic situation in the village would be improved by at least 10%.

By connecting the various potential applications of RWHPs, multifunctional landscapes are attained. Promoting the different landscape functions under the framework of sustainable development reveals new facilities and amenities which, if applied successfully, creates benefits for the community, the economy and the environment.

To spread further awareness, we should focus on the need to conserve and recycle water - at the very least harvested grey water should be treated to be fit for reuse. Secondly, we should support initiatives related to finding new ways of maintaining and exploiting domestic RWHPs.

*Shared by Nada Jouni*

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## PHOTO OF THE MONTH

To send us your photos, email us on [contact.soilslebanon@gmail.com](mailto:contact.soilslebanon@gmail.com)



Animal lovers in Lebanon rejoice after Bella, the striped hyena, makes a full recovery. Here, she is shown with Dr. Mounir Abi Said leaving the Animal Encounter refuge to be released back into the wild. Thank you to Dr. Abi Said and the "Green Southerners" for rescuing this beautiful creature after it was wounded in a snare and held captive. Check out the full album and story on the Animal Encounter Facebook page: <https://www.facebook.com/animalencounter.org/>

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## GET IN TOUCH, GET INVOLVED


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## A THOUGHT TO SHARE ...

**"A bird doesn't sing because it has an answer, it sings because it has a song."**



**–Maya Angelou (1928-2014)**

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