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FEATURE STORY

AFIR PHASE 2: A POLLINATOR-FRIENDLY GARDEN IN SAIDOUN

In **Autumn 2017**, we had received support from the **Sustainable Lush Fund** (now renamed as **Re:Fund**) for the second year in a row to implement **Phase II** of our project **AFIR Beekeeping and Nature Discovery Center**.

In the first implementation phase (2016-2017), we had begun renovating an old stone house in the village of **Saidoun** - Jezzine caza and set up our **2,000 m² aromatic garden** with our first 2 herb species (**lavender and rosemary**).

When we first rented the garden in 2016 we hadn't had the time to do a proper permaculture design; the plot had become available on a very short notice and we needed to start planting the thousands of rosemary and lavender seedlings we had purchased right away. We only had one week to set up the drip irrigation system and squeeze in as many of the plants as possible. We spent the following year observing and recording info on wild plants, insects, and diseases.

In the second phase (2018) we put together a team of 3 people to work on re-designing the aromatic garden to increase biodiversity and attract more pollinators. The team included **Wael Yammine** who has experience with agriculture and wild bees (now a full member of SOILS); **Fadia Kamel**, a freshly graduated landscape designer; and **Rita Khawand** from SOILS who is continuously expanding her knowledge of permaculture design. We also continued working on the house renovation and experimented with distilling our own essential oils for the first time.

GARDEN REDESIGN

More diverse bee habitats:

We managed to rent out an additional terrace - part of the same plot - in which **wild oregano** (*Origanum Syriacum*, commonly known as **zaa'tar** - زعتر) was planted with a lot of space in between rows. Inspired by the **leaf pattern**, we designed one main straight path and oblique secondary ones. We divided the space in between the zaa'tar rows into a series of 1 m² patches, each with a different **bee-friendly plant species**, since bees are more attracted to a group of flowers of the same species rather than scattered individual flowers.

We ensured our plant selection provided either **nectar** or **pollen** throughout the year, and included plants accessible by wild bees with different mouth parts. We focused on two families of perennial and annual flowers: **Lamiaceae** (different species of salvia, lavandula, thymus, mentha) and **Asteraceae** (calendula, cosmos, echinops, echinacea, chamomilla, achillea, centaurea). We collected seeds of local wild plants around Saidoun (e.g. *Psoralea bituminosa*, *Stachys distans*, *Ononis natrix*) after observing how they attracted a wide range of bees, sourced other native plants from specialized local nurseries, and bought seeds of non-native plants from Europe.

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FEATURE STORY

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We included some **native tree species** (laurel, arbutus, Judas, wild pear, prune) for additional biodiversity. We designed almond tree guilds in a basin shape with clover, violets, and strawberries as ground cover, as well as some bulbs (daffodil, tulip, crocus, onion, garlic). We added blackberries and raspberries to form an edible visual barrier and windbreak.

As for **wildlife habitats**, we designed nests of different sizes that can host wild **solitary bees** so visitors (and ourselves) can observe them more closely.

Working in between heavy rains in **November** and **December 2018**, we were able to define the paths and sections, and plant the trees and some of the flower seedlings that we had available. The remaining plants that needed to be planted in spring are currently being germinated from seeds with the help of *Silvana Khawand* from SOILS.

Rainwater catchment:

We set up a rainwater collection system near the bottom terrace and connected it to one of the neighbors' roof. Rainwater is collected in two plastic tanks of **4,000 liters** each, then pumped to an existing **underground cistern** with a capacity of **27,000 liters** near the highest terrace. Ideally water should be collected uphill but we couldn't find a suitable collection surface higher up.

With the high level of precipitation this winter (more than double the general average so far) all tanks were full in only a few weeks. We directed the overflow outside the terrain instead of into the almond basins as initially planned, because the cover crops weren't established yet and we were afraid they'd drown. The total **35,000 liters** of rainwater collected should be enough to irrigate the new plants in summer and for hand washing during activities.

We also implemented simple **earthworks** to help rainwater infiltrate the soil where needed. This consisted of **semicircular bunds** under trees that were planted on a slope, and **mulch basins** under the trees on flat surfaces.

Soil regeneration:

The garden was initially suffering from **soil degradation** due to previous tobacco cultivation (no organic matter, low biological activity, presence of soil borne diseases such as rhizoctonia), which caused the loss of more than 100 lavender plants. Thankfully, Wael was completing the **Soil Life Course** with renowned American microbiologist *Dr. Elaine Ingham* so we decided to apply a compost tea preparation to help improve the soil's biology. We'll be doing a more structured trial this Spring.

Activity space:

We needed a shaded area for activities and for our mini nursery so we chose a simple metal pergola, requiring the minimum amount of material and very low maintenance. Shade will be provided by climbing kiwi plants, which will also provide food, in addition to some other annual climbers like gourds – which can provide raw material, such as for building bird houses.

CENTER RENOVATION

Stone work:

We built **stone terraces** to increase the center's garden area, as well as a stone fence along the border. We will be planting **climbers** (ivy, clematis, honeysuckle) to form a green visual barrier, and a **bee-friendly windbreak**.

Grey water treatment:

In collaboration with **DIFAF**, we designed a very simple **grey water treatment system** that's easy to replicate, doesn't need pumping, and can adjust to variable flows. The grey water from the center's kitchen sink and from the bathroom shower and washbasin will flow out of the house in the same pipe, then down across the center's garden in a main hose.

Inside the center's garden, the grey water hose will **irrigate 5 trees**. A control valve for each tree will allow us to control the flow depending on the season. The trees will be planted in mulched basins, and the micro-organisms in the mulch will filter out the water. We will take extra care to use **ecological and biodegradable detergents and soaps** inside the center.

For the system to work with gravity only, we had to level the garden's soil so as to create a continuous **2°-3° slope**. This caused a lot of disturbance to the soil and it will need some care before we can plant trees and shrubs in it.

For now, we planted some winter cover crops (fava beans, lupine, vetch) and we'll be planting some Spring cover crops soon.

Reported by the Editorial Team



LET'S SHARE OUR NEWS

SOILS' FIRST SCHOOL TEACHER TRAINING IN PERMACULTURE DESIGN

In **Autumn 2018**, SOILS Permaculture Association Lebanon was invited by the "Institut des Frères des Écoles Chrétiennes" to conduct a training for school teachers on **designing gardens with students using permaculture** at the **Mont La Salle school - Ain Saadeh**. This was the first training of its kind we have undertaken, so we were excited to do things right.

We split the program into 2 phases to make it easier for the teachers to commit. **Phase A** consisted of 6 sessions (4 hours each) introducing the teachers to permaculture design while doing the design exercise on the Mont La Salle site. **Phase B** consists of follow-up sessions with each of the trainees in their school while they design and implement the actual gardens with their students.

11 teachers from 6 different branches of the establishment's network (Mount Lebanon, Beirut, and North Lebanon) enrolled in phase A **between December 2018 and March 2019**. The participants came from diverse backgrounds: biology, maths, Arabic language, science, etc., and each worked with students of a different age group. Diversity is enriching but it also means we had to adjust our content to different levels of experience and learning.

The training was designed and conducted by *Rita Khawand*, *Karim Hakim*, and *Wael Yammine* from SOILS Permaculture Association Lebanon, in both Arabic and English. We prepared handouts in French, though, because the teachers are francophone.

For our design exercise we assigned 2 adjacent plots within the school grounds to 2 groups of trainees.

TRAINING SESSIONS

Session 1 included an introduction to **agro-ecology** and **permaculture** history, ethics, and principles, as well as pattern observation.

In **Session 2**, the trainees learned to draw a **site base map** by mapping the plots in the demo field at the Mont La Salle school then drawing **scale maps** in class. They only recorded existing elements such as fences, trees, shrubs, buildings, etc. The plots are randomly planted mostly with ornamental trees and shrubs, and with a cover of lawn.

Session 3 was dedicated to surveying the site. The trainees observed sun and shade, traces of water flow on the soil (such as erosion or wet spots), existing plants, etc. Wind was tricky to observe on a non-windy day, so we asked *Carole*, one of the teachers, to record videos on windy and rainy days. We then dug holes in the soil to observe the soil profile and took samples to test its texture using hand and jar tests. The soil suffered generally from compaction and erosion, so we spoke about nutrient cycling and soil micro-organisms.

Session 4 concerned the **people** who will be using the site or have an influence on it. The trainees started by defining who those stakeholders are, then designing questionnaires for each to better understand their needs/wishes, resources, and restrictions. Since it was a Saturday we couldn't ask questions to either the administration or the students, so we asked *Carole* again to get some answers by the next session. We then talked about how to protect crops naturally by methods like crop rotation, attracting beneficial insects, etc., and how to care for the soil by using no-dig beds.

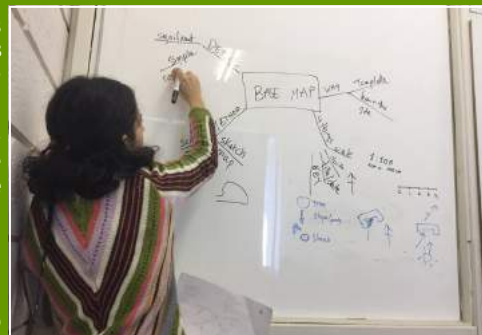
We discussed the answers *Carole* got from her class in **Session 5**: most of the students wanted to have outdoor classes in the garden and grow fruit trees and vegetables. Taking people's wishes and the information collected during the site survey into consideration, we collectively defined the key and supporting functions, then started choosing the elements and systems that would support these functions. We then played the "zoning game" to introduce this important design tool, before showing some pictures of urban gardening examples for schools who don't have access to soil. As it was a rainy day, the three of us visited the plots after class to find out that clean rainwater from one of the playgrounds was flowing from a pipe and could be captured easily.

Lastly, in **Session 6**, we projected the maps of the 2 plots together so we could look at them as one interrelated system (until then, the groups were working separately each on their plot). We looked at the functions defined earlier: education, food production, improving soil, increasing biodiversity, etc., and at where each function can be best achieved making the most out of the existing microclimates and resources. It was obvious that food production had to go into the sunny plot A which had more space and less trees, whereas elements which don't need direct sun (e.g. compost, nursery, bird houses) or can profit from shade (seating area) could be placed in plot B, which is very shady and crowded. The trainees then went back to their groups to work on placing some of the elements. We handed them a list of trees, berries, and shrubs indicating the size, fruiting time, and ecological function of each. An important factor for schools is to choose plants that fruit during the academic year. Finally, each group explained to the other how and why they chose to place the elements the way they did.

All in all it was a very enriching experience for us, and hopefully for the trainees. Our first impression was that there was too much information for them to assimilate, especially since not all of them had a scientific background, so, had we known, we would have simplified things more.

We have yet to **implement a garden** with one of the schools in phase B to get a better idea of the whole program's relevance and how it can be improved, so stay tuned.

Shared by *Karim Hakim* and *Rita Khawand*



LET'S SHARE OUR NEWS

JP RECYCLEDISIGN: REDUCE, REUSE, AND WHEN ALL ELSE FAILS, CREATE

Reducing waste is the main goal of **JP RecycleDesign**.

Personally, I would like to see people take a more conscious approach to waste. Little changes like refusing straws with your drinks, reusing plastic bags, or better yet replacing them with eco-friendly reusable bags, can go a long way towards preserving our environment. Supporting local industries and artists is also a step towards reducing waste. JP RecycleDesign has launched initiatives of its own to reduce waste. "Tip the environment," for example, is an initiative aimed at collecting used plastic hookah tips from several restaurants and reusing them so they don't end up in the ocean.

But the fact is we will still have to deal with waste over the next decades. This is where our second goal comes in: encouraging creativity. And this is why all JP RecycleDesign products incorporate plastic waste.

Around six years ago I was swimming in Jounieh when I noticed a lot of discarded plastic and wood in the sea. I thought to myself "what could be done with these materials?" so I began researching upcycling. My passion for always trying new things motivated me to keep exploring different techniques and new materials. It wasn't long before I was hooked. A year later, I partnered with two designers to create an upcycled exhibition, mainly focusing on furniture like desks, tables, table tops, etc. It took us a year and a half to prepare for the event and on the opening day our designs were a hit. Unfortunately, many people still thought of these items as "garbage," and were reluctant to put them in their houses. I understood then that to shift people's perception I would need time and I would need to work on a different presentation.

This is when I first got the idea of using plastic instead of granite to produce a **terrazzo**-type material. I made a few tests without knowing much about the ratio of plastic to cement, and I was surprised by how well the two materials worked together. Since then, I have been constantly trying new terrazzo designs and products. I design my own molds, work on the concrete/plastic mix, and also select different color combinations of plastic – the trick is to actually make the plastic bits show on the surface aesthetically instead of remaining hidden or being distributed unevenly. After that, I smooth out my pieces and finish them with a protective coating.

This terrazzo plastic is my current pet project as it is eliminating large quantities of unwanted plastic. Most of the plastic I use is "donated" by people, companies, and NGOs, or collected during beach cleanups. It is also a very versatile material that can be used in a wide range of products, from coasters to tiles, table and counter tops, planters, containers, etc.

It has taken me years and a lot of trial and error to perfect my technique. Seeing as this is a new material, there weren't any manuals or guidelines that I could refer to. To this day, I continue discovering new things and trying new combinations. I should mention here that I have a "normal" nine-to-five job and that it's only after I am done with it that I head for my workshop and begin tinkering. I am getting very good feedback from customers. Right now, my best-sellers are small pots for cacti and succulents, but customers are calling them "green smiles."

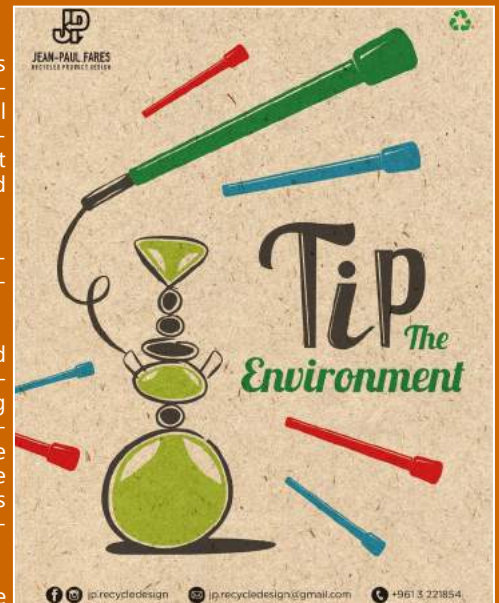
You can check out my collection on my **Instagram** account [jp_recycledesign](https://www.instagram.com/jp_recycledesign) or follow me on **Facebook**: [JP.RecycleDesign](https://www.facebook.com/JP.RecycleDesign)

In Beirut, you can find my products at **The Semicolon Story** in Badaro and at **The Sage Parlour** and **Home Sweet Home** in Mar Mikhael.

As long as we have waste, JP RecycleDesign will continue finding new design applications for it. My journey has just started and it only makes sense that I keep experimenting with new designs and incorporating different waste materials into them.

And, of course, I am open to any collaborations.

Shared by Jean Paul Fares (JP RecycleDesign)



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LET'S SHARE OUR NEWS

THE LEBANON MOUNTAIN TRAIL: HIKE IT, PROTECT IT.

On **March 28, 2019**, the **Lebanon Mountain Trail Association (LMTA)** held a ceremony to inaugurate the **"Hike It, Protect It"** campaign at the **presidential palace** in **Baabda**, under the high patronage of the **President of the Lebanese Republic, General Michel Aoun**.

The campaign aims to protect the world-famous **Lebanon Mountain Trail** and contribute to creating income-generating activities for residents of villages along the trail. The campaign coincides with the LMTA's **10th thru-walk** which will see hikers cross the entire length of the trail and discover its natural beauty as well as its villages' heritage **from March 29 to April 28, 2019**.

The Lebanon Mountain Trail stretches over **470 km** from North to South and passes through **76 villages** and towns at altitudes ranging from 570 m to more than 2,000 m above sea level. Some **30,000 visitors** (more than half of which are foreigners) hike the Lebanon Mountain Trail every year. **Condé Nast Traveler** named the Lebanon Mountain Trail one of the **7 most beautiful hikes in the Middle East and Mediterranean**, and **The Discoverer** website recently listed the Lebanon Mountain Trail among the **"10 Insane Hikes Around the World."**

During the ceremony, the LMTA screened a documentary about the trail featuring testimonials from hikers and residents of the trail, highlighting its natural, cultural, and historical importance.

Our friend **Maya Karkour, President of the LMTA**, talked about the importance of preserving and promoting the trail through responsible and sustainable eco-tourism that brings benefits to locals. She stressed the necessity to ensure the implementation of existing laws and adopt new laws to meet the needs of the sector for a comprehensive development policy and sustainable planning. She pointed out that the LMTA has been working since 2007 on the maintenance and development of the trail, as well as on developing educational and pedagogic programs to celebrate the rich heritage it holds. The LMTA also worked on securing the necessary infrastructure for visitors (guest houses, rest stops, signage, etc.) in cooperation with local communities, municipalities, civil society organizations, and natural reserves.

"I am certain that the Lebanese, when they walk this trail, they would love their country more and appreciate its beauty, which will tie them to it more," Aoun said.

Reported by the Editorial Team



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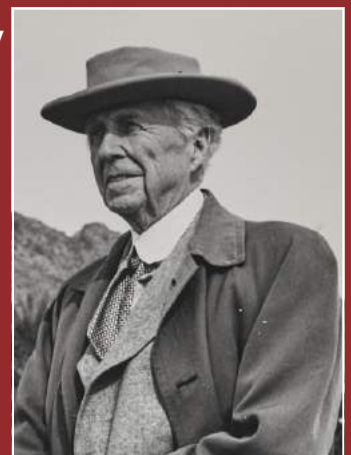
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A THOUGHT TO SHARE ...

"I believe in God, only I spell it 'Nature'."



–Frank Lloyd Wright (1867-1959)

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