

# **Biodiversity Village Award 'Baldati Bi'ati'**

***Salma N. Talhouk & Lama Tawk***

***American University of Beirut***

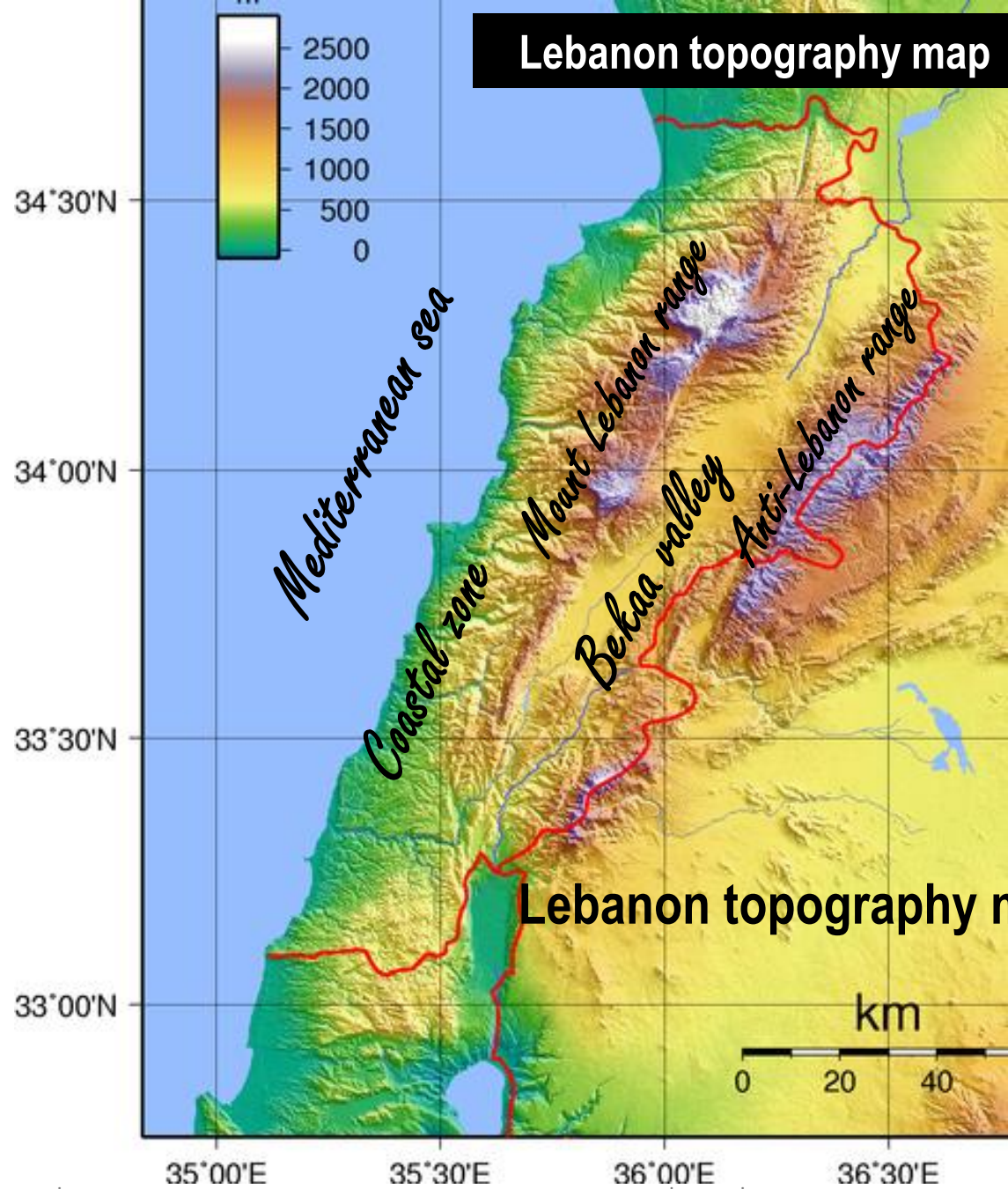
***Faculty of Agricultural and Food Sciences***

***Department of Landscape Design and Ecosystem Management***

***AUB Nature Conservation Center (NCC)***

Lebanon contains typical Mediterranean plant communities, that include botanical elements from temperate, arid, and tropical biomes

It is part of the Mediterranean Basin Global Biodiversity Hotspot, with an estimated 3000 plant species



5<sup>th</sup> SGA Network meeting, Dubai, UAE, 26<sup>th</sup>-28<sup>th</sup> October 2014

Community involvement in the conservation of biodiversity through use necessitates local empowerment that starts with community based data generation.





**Cultivate** willingness to conserve  
**Involve** community  
**Contextualize** sites and assets  
**Provide** recognition and incentives  
**Develop & share** adapted technology  
**Enhance** local know how and capacity

**People guardians and benefactors**  
**Decentralize - Diversify**

**Ministry of Interior**  
Decentralization and  
capacity building of  
local authorities



**Ministry of Tourism**  
Eco-tourism, green  
jobs and economic  
opportunities



**Ministry of Education**  
Awareness and  
knowledge dissemination



**Coca-Cola Foundation**  
Private Sector Sponsor





- Easy to read aerial maps
- Universal icons as “shopping list”
- Formation of local committees
- Recurrent on-site mapping workshops
- Data generation through facilitation rather than intervention
- Direct access to researchers through calls, WhatsApp & SMS
- Iterative capacity building through learning by doing
- Sensitive to gender balance & social diversity
- Readily replicable
- Promoting best practices
- Symbolic incentives – BVA Award & Prize
- Through use – Landscape contextualization
- Consensus building
- Developing local indicators of sustainability



**Easy to read aerial maps**

**Damour**





The **79** icons were  
organized under three  
categories:

landscape and nature  
eco-culture  
eco-threat/opportunities

At total of **1723** sites was  
recorded.

## الثقافة والمجتمع

- موقع ثقافي
- مركز / موقع فني رسم ونحت
- دورات مياه عامة
- حي مختلط
- مستشفى / مستوصف
- مركز للبلدية أو مراكز حكومية
- شبكة انترنت
- مركز استعلامات
- نصب تذكاري
- حي ذو طابع تراثي
- متحف
- مطاعم ومقاهي
- تعليم بيئي
- مدرسة
- ساحة ديوان البلدة
- مراكز دينية
- مكتبة عامة
- مقياس للتلوث البيئي
- نوادي وجمعيات بيئية
- مركز للشؤون الاجتماعية
- موقع تاريخي
- موقع أثري
- مركز / مشغل حرفي
- مركز / موقع فنون يدوية
- مركز / موقع فنون مسرح
- مركز اجتماعي
- مدافن
- موقع تطوعي
- خبير بيئي
- موقع صالح للأولاد
- موقع صالح للكبار السن

## المياه

- مورد مائي
- مياه نبع
- بركة جمع مياه الأمطار
- محطة إعادة تدوير المياه

## التلوث والمخاطر

- مصادر ضجيج غير صحية
- موقع طبيعي مهدد
- مصدر تلوث مائي
- كسارات ومramل
- غابة أو حرش مهدد من القطع العشوائي
- أماكن كوارث طبيعية
- مصدر تلوث هوائي
- مكب نفايات

## الحياة المستدامة

- زراعة بعلية
- زراعة عضوية
- مشتل
- تشجير أشجار موطنية سنوياً
- سطوح خضراء
- بيوت مبنية على الطريقة التقليدية
- تربية النحل
- مرجع للسياحة البيئية
- مولدات للطاقة الشمسية
- مولدات للطاقة الهوائية
- إعادة تدوير
- إعادة استعمال
- أجار موسمي
- بضائع بيئية

## الطبيعة والنشاطات بيئية

- غابات واحراش
- معلم جيولوجي
- شجرة مميزة
- طريق مزروعة بالأشجار
- منتزه على ضفاف المياه
- أماكن مميزة لمشاهدة الطيور والفرشات
- حزام نزوح الطيور
- طيور بحرية
- حيوانات برية
- ساحة عامة
- حدائق عامة
- دروب البلدة
- أراضي مستهدفة للتسليق
- مخيمات بيئية
- ممرات دراجات هوائية
- أماكن تزلج ونشاطات ثلج
- مسبح
- نشاطات رياضية نهريّة
- نشاطات رياضية بحرية
- مشاهد غروب / شروق الشمس
- مشاهد مميزة
- أماكن لمشاهدة النجوم



# Formation of village committees



5<sup>th</sup> SGA Network meeting, Dubai, UAE, 26<sup>th</sup>-28<sup>th</sup> October 2014



# Recurrent on-site mapping workshops





## Data generation through facilitation rather than intervention





**Direct access to researchers through calls, WhatsApp**



**Explore new and diverse venues that better align with local cultural perceptions and expectations to broaden participation in the creation of Village Maps**



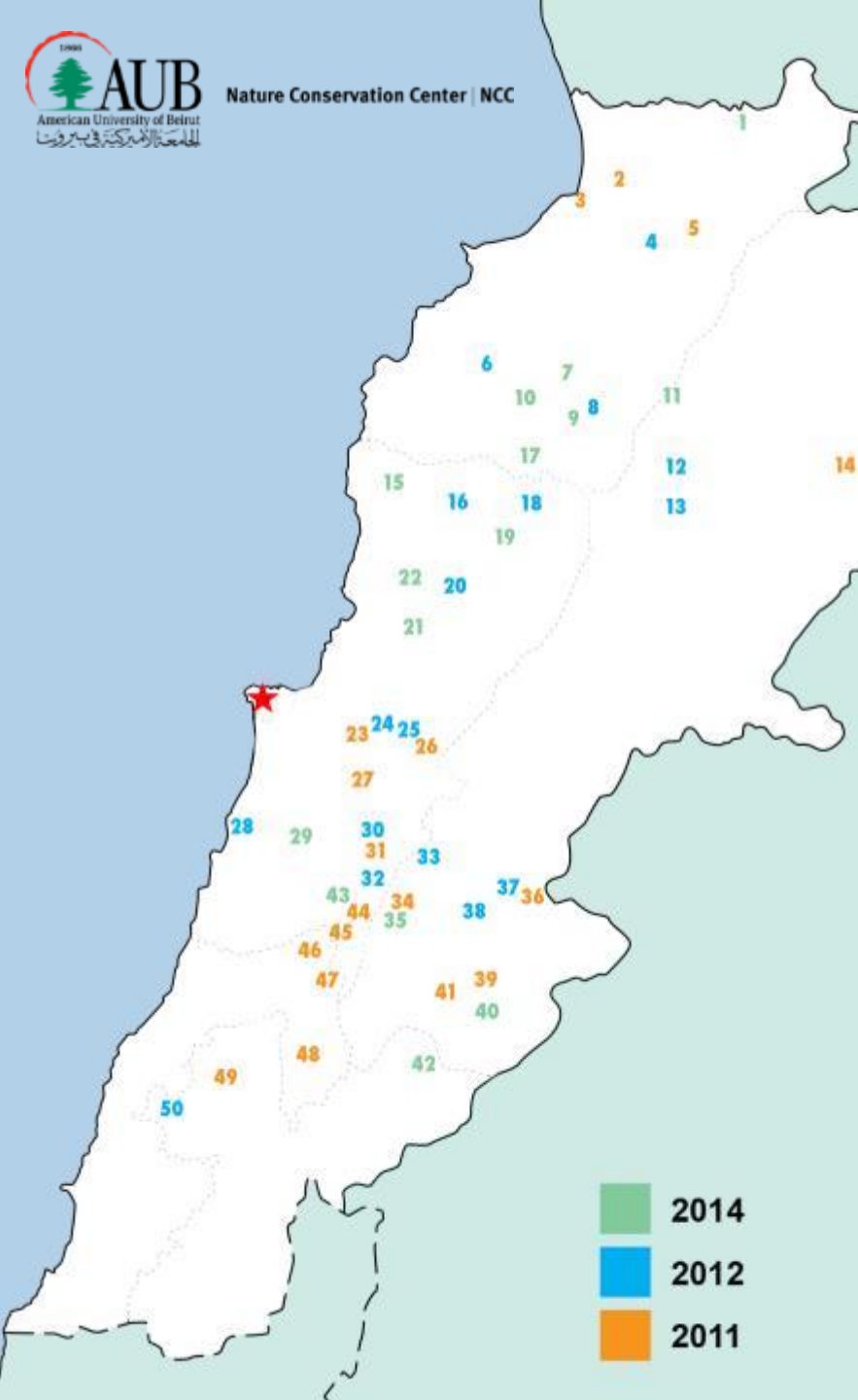
# Iterative capacity building through learning by doing



**Sensitive to gender balance & social diversity**



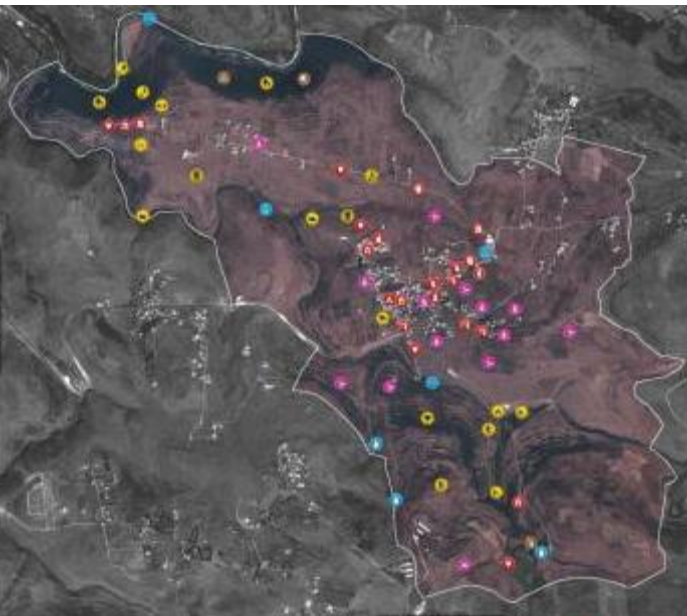




- |                              |                                  |
|------------------------------|----------------------------------|
| 1 Menja                      | 27 Shinai / شانيه                |
| 2 Miniara / منياره           | 28 Damour / الدامور              |
| 3 Bebnine / ببين             | 29 Bsheftine / بشتفين            |
| 4 Hrar / حرار                | 30 Ourhaniye / ورهانية           |
| 5 Michmech / مشمش            | 31 Barouk / الباروك              |
| 6 Kousba / كوسبة             | 32 Maaser El Shouf / معاصر الشوف |
| 7 Ehden / إهدن               | 33 Aana / عانا                   |
| 8 Bsharreh / بشري            | 34 Ain Zebde / عين زبدة          |
| 9 Hasroun / حصرون            | 35 Saghbine / صغبين              |
| 10 Qnat / قنات               | 36 Aita El Foukhar / عيتا الفخار |
| 11 Oyoun Orgosh / عيون ارغش  | 37 Manara / المنارة              |
| 12 Barqa / برقة              | 38 Kamed El Loz / كامد اللوز     |
| 13 Deir El Ahmar / دير القمر | 39 Dahr Al Ahmar / ظهر الأحمر    |
| 14 Aarsal / عرسال            | 40 Rachaya / راشيا               |
| 15 Bentaael / بنتيل          | 41 Kawkaba / كوكبا               |
| 16 Ehmej / إهمج              | 42 Kfeir / كفير                  |
| 17 Tannourine / تنورين       | 43 Baadaran / بعدران             |
| 18 Aakoura / العاقورة        | 44 Mrousty / مرستي               |
| 19 Qartaba / قرطبة           | 45 Niha / نيحا                   |
| 20 Hrajel / حراجل            | 46 Jezzine / جزين                |
| 21 Reifoun / ريفون           | 47 Bkesine / بكاسين              |
| 22 Chahtoul / شحتول          | 48 Rihan / الريحان               |
| 23 Ras El Matn / راس المتن   | 49 Deir Zahrani / دير الزهراني   |
| 24 Deir El Harf / دير الحرف  | 50 Sinay / سينا                  |
| 25 Al Qalaa / القلعة         |                                  |



Applied to 50 villages successfully





Identifying ongoing practices in each village that can serve as national benchmark and inspiration of sustainability to neighboring villages.



Available on YouTube as  
“Lebanon Green Initiatives”



## Symbolic incentives – Map exhibit for private and public s







2014 attended by the Minister of  
sm

## Contextualization of conservation opportunities

Landscape and Nature	(n=35 villages)
Wildlife habitat	97%
Scenic vista	94%
Sunrise / sunset site	94%
Star gazing site	94%
Water feature	91%
Special tree	91%
Migration zone	89%
Public forest / natural area	80%
Drinking water source	77%
Streetscaping	57%
Water front / riverside park	43%
Garden	43%
Geological feature	40%

Eco-cultural landmarks	(n=35 villages)
Birds and wildlife watching	83%
Hiking trails	14%
Kayaking sites	0%
camping sites	80%
Snowshoeing	23%
Local Market	100%
Eco-Agriculture	83%
Bicycle sites	63%
Ecotourism Resources	31%
Museums	6%
Green schools	3%
Pollution monitors	3%
Public WiFi Spots	3%
Public libraries	26%

Eco-threats/ Opportunities (n=35 villages)	
Waste dumps	17%
Water pollution sources	86%
Recycling sites	17%
waste water treatment plants	29%
green roofs	30%
Solar Energy sites	1%



5<sup>th</sup> SGA Network meeting, Dubai, UAE, 26<sup>th</sup>-28<sup>th</sup> October 2014





## Future Plans (top three priorities)

(n=35 villages)

Reforestation	91%
Hiking trails	63%
Rain water collection ponds	57%
Water treatment plants	43%
Forests and Woodlands protection	40%
Camping sites	31%
Solar Energy	30%
Recycling Site	29%

7

# Community based Geo-referenced database

	Region	Village Name (Latin)	Village Name (arabic)	Upper right corner lat	Upper right corner long	Lower left lat	Lower left long	Surface Area (km <sup>2</sup> )	Altitude (m)	Population	Built area %
	Bekaa	Ain Zebde	عين زبدہ	33.639096	35.721354	33.616084	35.676594	5.46 km <sup>2</sup>	980-1100 m	3650	1.98%
2011	Aakar	Miniara	منيارہ	34.547174	36.068365	34.526847	36.054847	1.393	100-200	8000	30.5807% built
2011	Akkar	Bebnine	ببنين	34.527822	35.997999	34.488124	35.976242	6.85	0-120	24000	21.7258% built
2012	Akkar	Hrar	حرار	34.470753	36.153205	34.446542	36.101109	8	750-1150	4700	7.5698% built
2011	Akkar	Michmech	مشمش	34.478929	36.2342	34.412678	36.11953	33.77	700-2000	26000	1.6793% built
2012	North	Kousba	كوسبة	34.328801	35.866987	34.287071	35.835506	6.1	450	9000	11.4571% built
2012	North	Bsharreh	بشري	34.311774	36.142746	34.2065	35.98808	60	1400-3080	70000	3.03424% built
2012	Beqaa	Bar'a	برقة	34.213839	36.166719	34.156952	36.104804	40	1400-2300	3000	1.3210% built
2012	Beqaa	Deir el Ahmar	دير الأحمر								2.9970% built
2011	Beqaa	Ersal	عرسال	34.23459	36.62439	34.046194	36.32793	436	1450-1600	35000	2.3933% built
2012	Mount Lebanon	Ehmej	إهمج	34.148061	35.864373	34.112178	35.763599	17	1000-1450	4500	1.7853% built
2012	Mount Lebanon	Aakoura	العاقورة	34.165164	36.015176	34.039767	35.855048	120	1450-2100	14000	0.5828% built
2012	Mount Lebanon	Hrajel	حراجل	34.047556	35.829144	34.010387	35.781095	12	1450	10000	8.1746% built
2011	Mount Lebanon	Ras El Matn	راس المتن	33.864182	35.690351	33.828254	35.612245	13	500-1000	14000	7.6221% built
2012	Mount Lebanon	Deir El Harf	دير الحرف	33.857784	35.674564	33.841068	35.706246	2.4	1050	800	11.184% built
2012	Mount Lebanon	Al Qalaa	القلعة	33.846393	35.734407	33.830352	35.721318	2	1050	800	23.167% built
2011	Mount Lebanon	Hammana	حمانا	33.832225	35.768535	33.795142	35.718324	8.2	1050-1500	1500	13.0662% built
2011	Mount Lebanon	Shinai	شانيه	33.799589	35.673381	33.776406	35.645314	2.44	1050-1200	7000	20.9918% built
2012	Mount Lebanon	Damour	الدامور	33.736864	35.480061	33.687101	35.416632	2000	150	20000	12.1209% built
2012	Mount Lebanon	Ourhaniye	ورهانيه	33.739096	35.691573	33.708314	35.659331	1760	1200	2000	9.44460% built
2011	Mount Lebanon	Barouk	الباروك	33.715354	35.759992	33.675063	35.665753	18	1250-2220	12000	2.6609% built



# Community based Geo-referenced database

## *Community based conservation and planning*

	Bekaa	Ain Zebde	عين زبدہ	33.639096	35.721354	33.616084	35.676594	5.46 km <sup>2</sup>	980-1100 m	3650	1.98%
2011	Aakar	Miniara	منيارا	34.547174	36.068365	34.526847	36.054847	1.393	100-200	8000	30.5807% built
2011	Akkar	Bebnine	ببنين	34.527822	35.997999	34.488124	35.976242	6.85	0-120	24000	21.7258% built
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2012	North	Kousba	كوسبة	34.328801	35.866987	34.287071	35.835506	6.1	450	9000	11.4571% built



Partnership  
with local  
and national  
authorities to  
promote  
sustainable  
living

Participatory  
planning for  
community-  
based tourism  
to promote  
local  
economies

Local planning  
and  
implementation  
of reforestation  
projects on  
communal  
village lands

Local  
participatory  
stocktaking of  
environmental  
issues as  
preamble to  
their  
remediation

Record  
keeping  
of local  
village  
heritage

# Developing local indicators of sustainability

## Conservation of Village Communal Lands

	<i>Protection</i>
4	Assigning conservation status
3	Regulation of access
2	Fire or other hazard prevention management
1	Grazing management
	<i>Sustainable Use</i>
1	Rain water collection
1	Wild edible plants & medicinal plant collection
1	Beekeeping
1	Eco-agriculture
1	Ecotourism
	<i>Communal Consensus</i>
2	Law enforcement + Communal consensus
1	Communal consensus

## Increasing green spaces on communal lands

### Tree planting

3	> 1000 trees / year
2	500-1000 trees/ year
1	< 500 trees/ year

## Eco-tourism

### Hiking

3	Footpath + signage or maps
2	Footpath
1	Dirtpath + truck track

### Eco-Information (EI)

3	Local NGO
2	NGO
1	International Organization

### Camping (CP)

3	Managed Campsite (Location & signage or maps)
2	Informal camping
1	Built, energy consuming sites



## 50 villages attended workshops



## Conservation through use

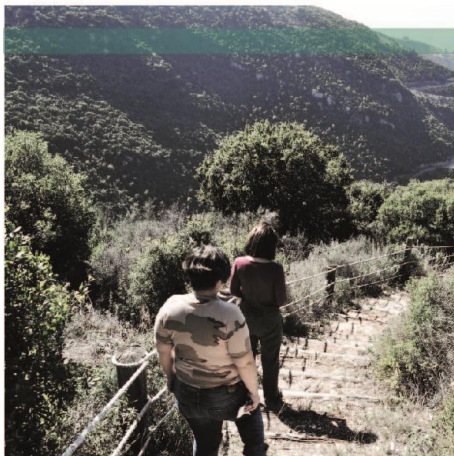


**WORKSHOP #1 at MoT:**  
*Developing community-based  
tourism per cluster of villages*

**WORKSHOP #2 at MoT:**  
*Guest house operation and  
environmental practices*



# Conservation through use



## Forest



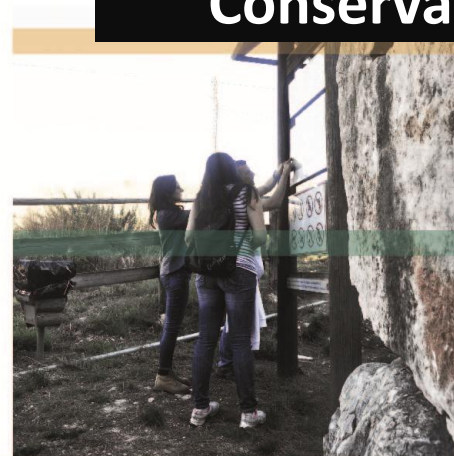
**Bentael Nature Reserve**, suitable for walks and hikes under the dense pine canopy .



Situated at 250 to 850 m altitude, the woodlands harbors several vertical cliffs of bare rock with many small caves and crevices.



Open to the public upon reservation.  
Access fee to be paid upon arrival.  
[www.bentaelreserve.org](http://www.bentaelreserve.org)



## Hiking



Get information about the Nature Reserve trails from the **Reserve team**.  
(009619738330)



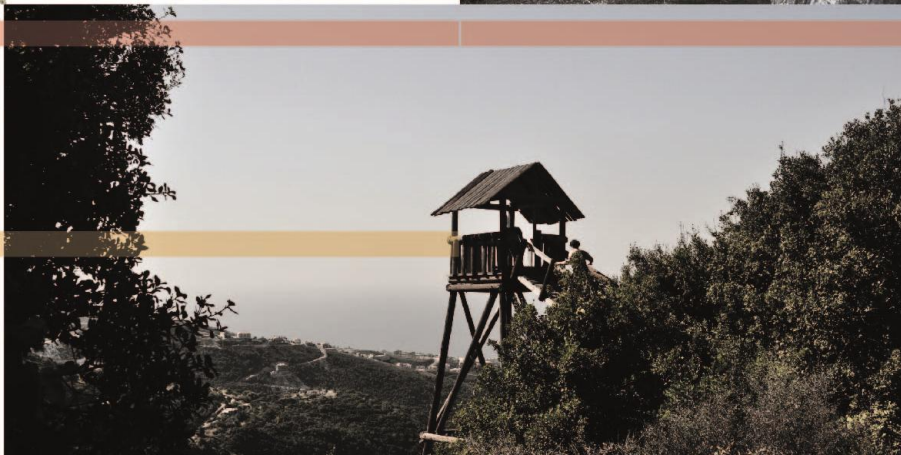
**Volunteer at the Bentael Nature Reserve** headquarters.  
[www.bentaelreserve.org](http://www.bentaelreserve.org)

## Local NGO



**Get near the Bees!**  
Schedule a bee hives tour, and buy your freshly produced natural honey.

## Bee Keeping



## Architecture



Pass by the village of **Behdaydat** known for it's 9th century frescoes on the walls at **Saint Theodore Church**.



**Greet the special tree!**  
Take photos of the old **Carol Tree** at the Carob gate of the reserve.

## Special Tree



**Walk the lush orchards.**  
Make sure to visit during the olive, carob, almonds and fig harvest seasons.

## Agriculture



## Historic Site



Spot the history hidden within the lush forest.



Inside the Reserve there are St. John's rock-cut hermitage and chapel.



This 12th century dwelling is located 8m above the ground, and can be reached from the hiking trails 2 ,1 and 3.  
It is composed of three cavities.



## BENTAAEL

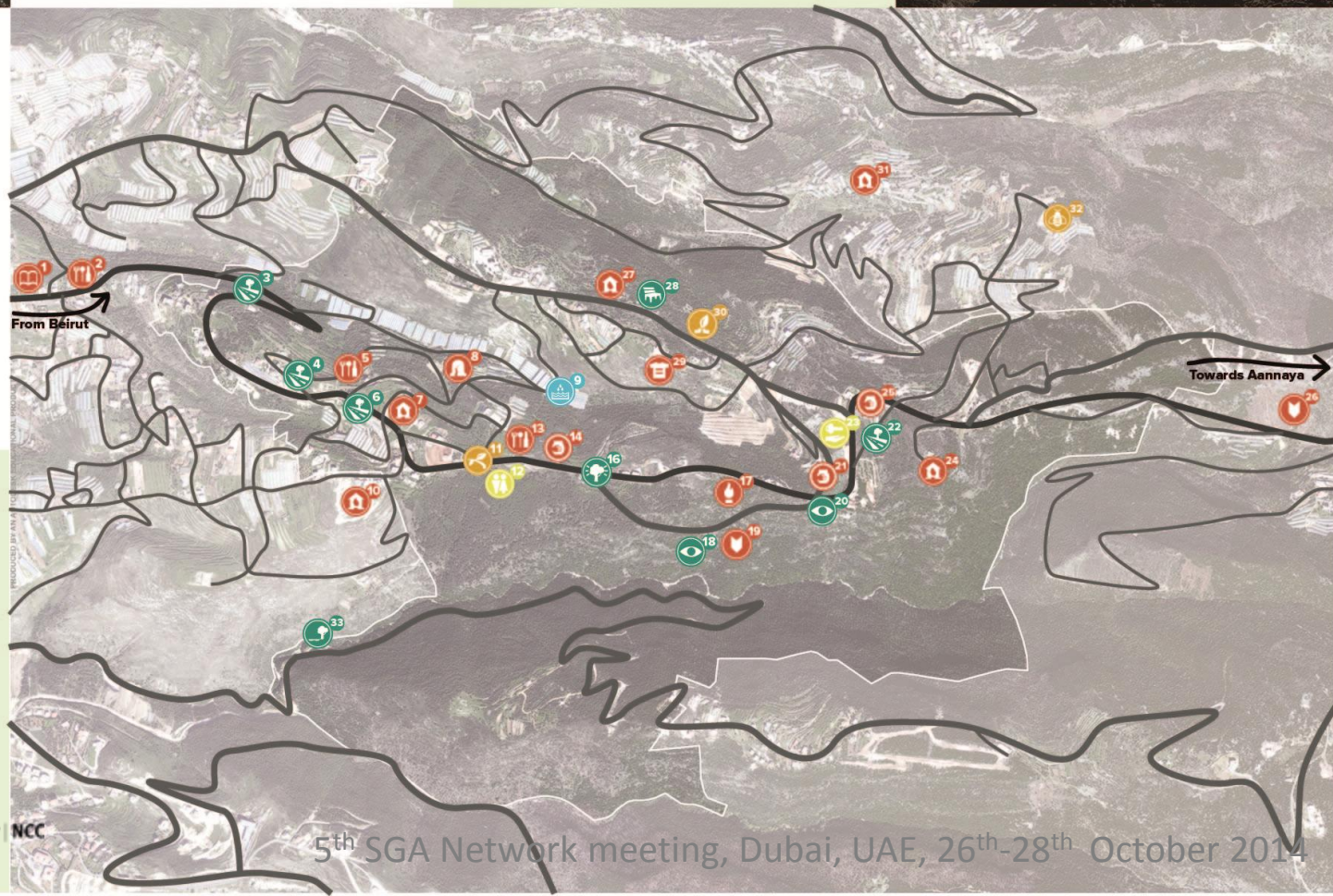
community tourism map



- |  |   |   |   |
|--|---|---|---|
| 1 "Kfar Mashoun Mar Abda" church and public library            | 10 Convent  | 18 Scenic view from the rocks               | <b>Conservation through use</b>   |
| 2 "Matta" Bakery   | 11 Plant nursery  | 19 Roman stele                              |   |
| 3 Street planted with Jacaranda trees                          | 12 Toilets  | 20 Scenic view from the nature reserve tour | Mar Mama "church"   |
| 4 Plant nursery  | 13 "Chez Sahebna" snack and bakery                                      | 21 Bentaael small scale winery              | 29 Maronite Scouts headquarters, Group of Mar Youhana headquarters and the Bentaael Nature Reserve Committee            |
| 5 Seasonal snack "Marhaj"                                      | 14 Sculptor "Kerellos"  | 22 Bentaael small scale winery              | 30 The house of the natural reserve is an eco-information center and the departure point of the annual independence run |
| 6 Street planted with Carob trees                              | 15 Traditional Lebanese guest house (Contact eco-guide on 009613838982) | 23 Guest house (Contact eco-guide)          |   |
| 7 Mar Adna Church  | 16 Carob gate with an old Carob tree                                    | 24 Mar Sarkiss & Bakhoss church             | 31 "Mar Theodorus" church   |
| 8 Mar Adna Cemetary  | 17 Simon Sakr memorial  | 25 "Michel Sakr" copper workshop            | 32 "Kaddoum" honey bee keepers  |
| 9 Rain water collection pond, used to irrigate the cut flowers |   | 26 Roman stele                              | 33 Riverside picnic spots along seasonal stream at the bottom of the Bentaael Nature Reserve                            |

RESEARCH BY SALMA TALHOUK AND LAMA TAWK  
MAP DESIGN BY JOY YOUNAN

- Nature and Outdoor Activities
- Water
- Sustainable Living
- Culture and Society
- Services
- P parking



- Bentaael Nature Reserve  
009619738330  
Eco-Guide Raymond Khoury  
009613838982
- 5 nearby coffee shops and restaurants
- Spend a weekend in an old traditional Lebanese house at Bentaael guest house

Altitude  
650 m above sea level

Population  
300

Nature Conservation Center NCC

5th SGA Network meeting, Dubai, UAE, 26<sup>th</sup>-28<sup>th</sup> October 2014







**50** short documentaries  
**50** municipalities  
**435** km travelled by car  
**50** local committee participants  
**60170** green maps  
**1723** participatory mapping workshops  
**304** ecological sites mapped



MONDAY, DECEMBER 16, 2013

## AUB signs MoU with MOT



A memorandum of understanding has been signed between the Tourism Ministry and the Nature Conservation Center at the American University of Beirut aiming to achieve cooperation in the field of eco-tourism through the exchange of information and expertise. The memorandum was









# Project Team



**Dr. Salma N. Talhouk**  
Program Director



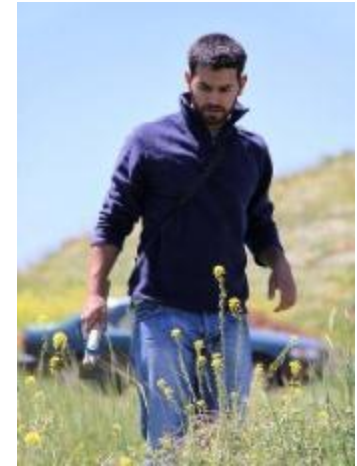
**Khaled Sleem**  
Plant Production  
Coordinator



**Wassim Kays**  
Community Outreach  
Coordinator



**Lama Tawk**  
Biodiversity Village  
Award Coordinator



**Antoine Khalil**  
Tree planting  
Coordinator



**Joy Younan**  
Biodiversity Village  
Award Urban Designer



**Diane Audi**  
Administrator



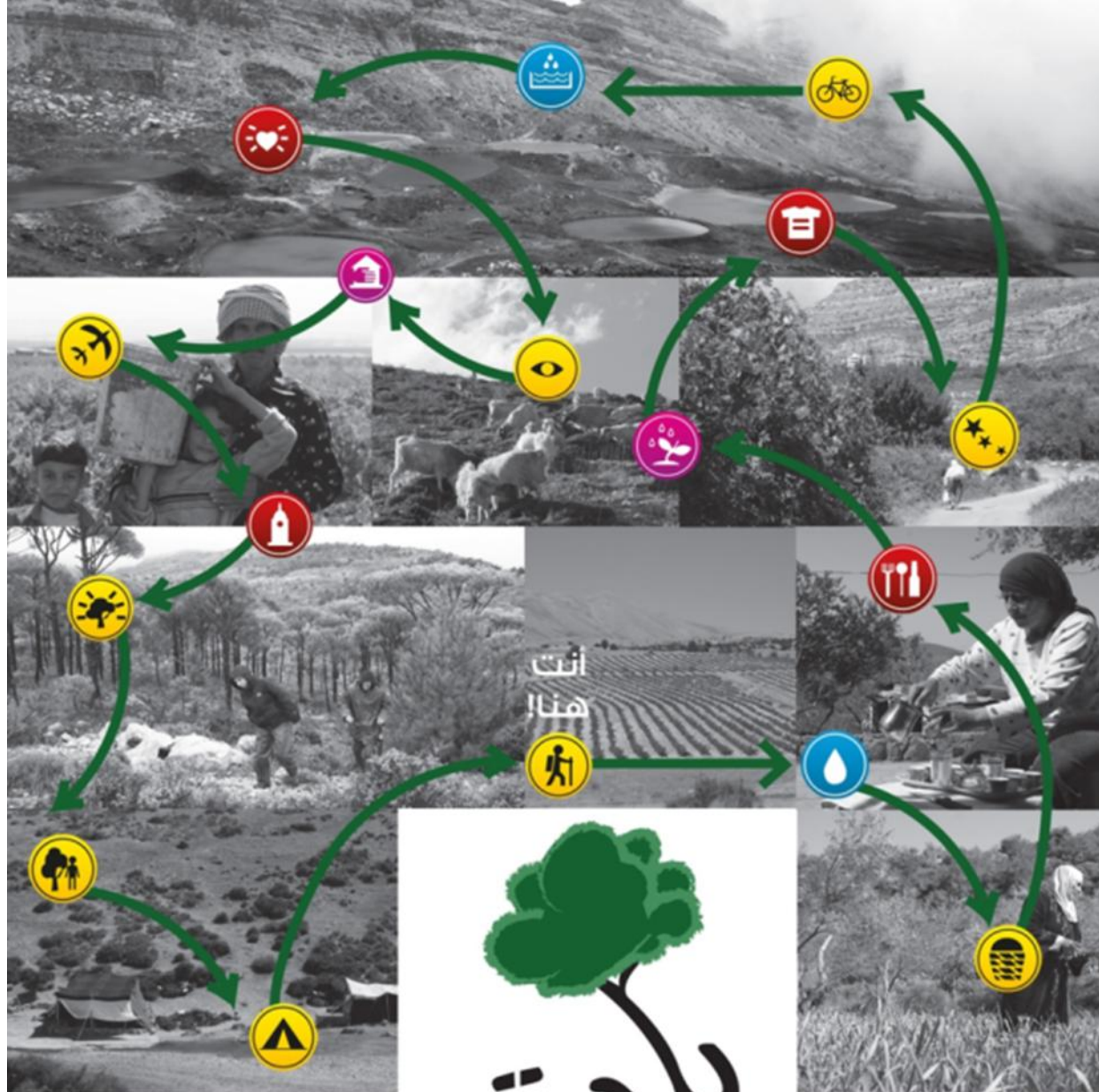
**Sabine Khattar**  
Graphic Designer



**Nada Hakim**  
Biodiversity Village  
Award Field Researcher



**Raneem Bou Ali**  
Landscape Designer



شو بتعرف عن  
بلدك؟

بيدي  
بيدي





THANK YOU

أنت  
هنا!





## Biodiversity village award - baldati bi'ati

Salma N. Talhouk and Lama Y. Tawk

The biodiversity village award is a participatory mapping project that has been implemented nationwide in 50 Lebanese towns and villages. The adopted methodology consisted of a combination of conventional and unconventional approaches that optimized the community's ability to build its own local database and generate a village map that features main landmarks and asserts. The presentation will shed light on the methodology and explain how the data was used to build partnerships and influence policy and opinion of decision makers.