Inter-Agency Coordination Lebanon

Micro-Garden Technical Working Group

Food Security Sector

11th June, 2016

Venue: Intersos, Jemayzeh

Presentations

1. FAO
2. UNHCR
3. Soils Lebanon
4. ACTED
5. Intersos

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Improving the Nutrition of Syrian Refugees and Host Communities Through Garden Walls

Mohamad Hachicho
FAO - National Agricultural Consultant

Food and Agriculture Organization of the United Nations

Objectives:

- To cope with the stressful situation through gardening
- To Improve social relations between people sharing green units and learning from each other
- To innovate and adapt the production units to camp conditions
- To Partially subsidize the diet of the refugees and the hosting communities.

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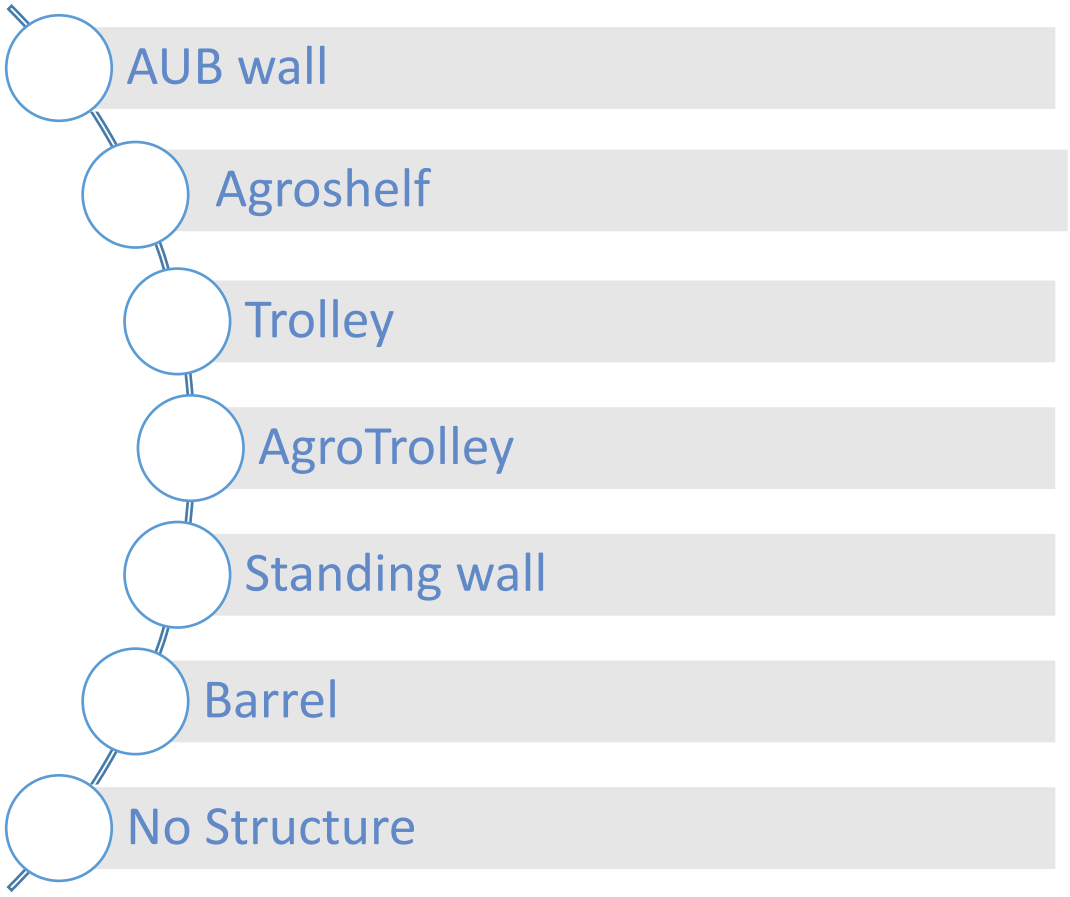
Units Adopted :



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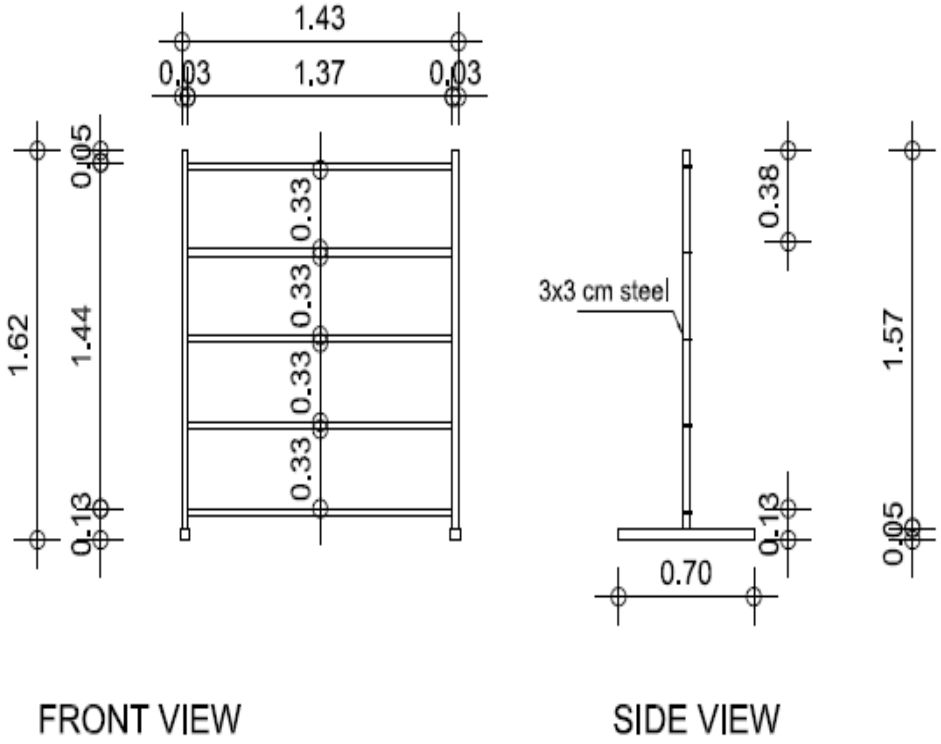
AUB wall



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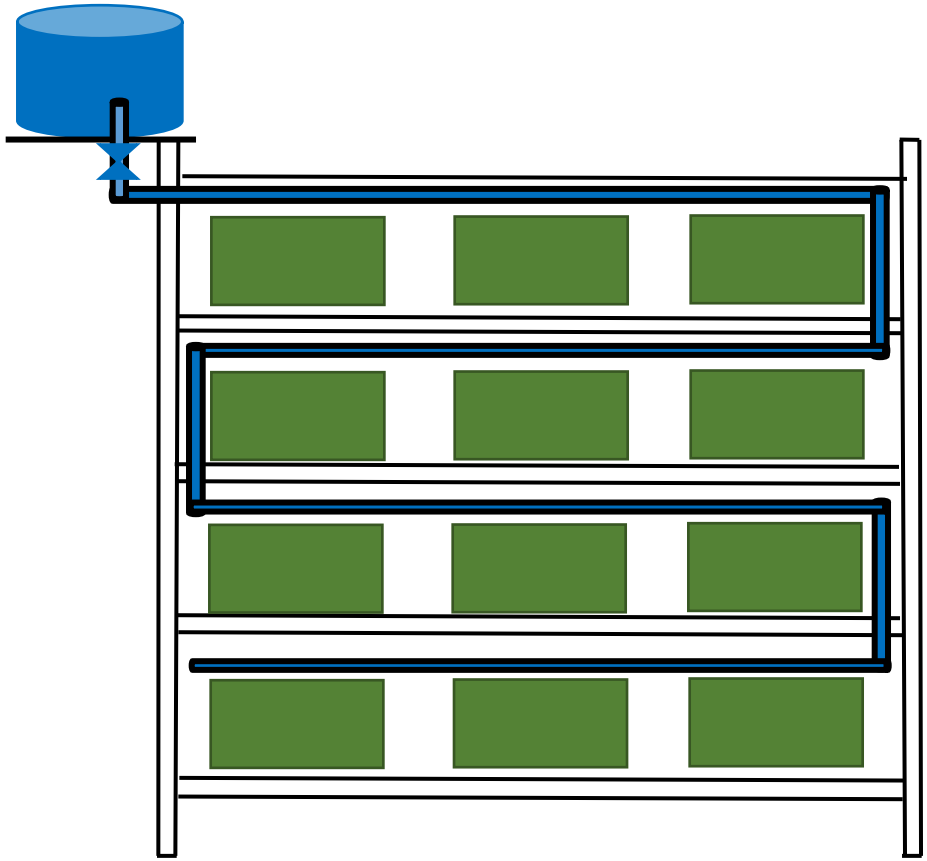
AUB wall
Irrigation Layout



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Agroshelf

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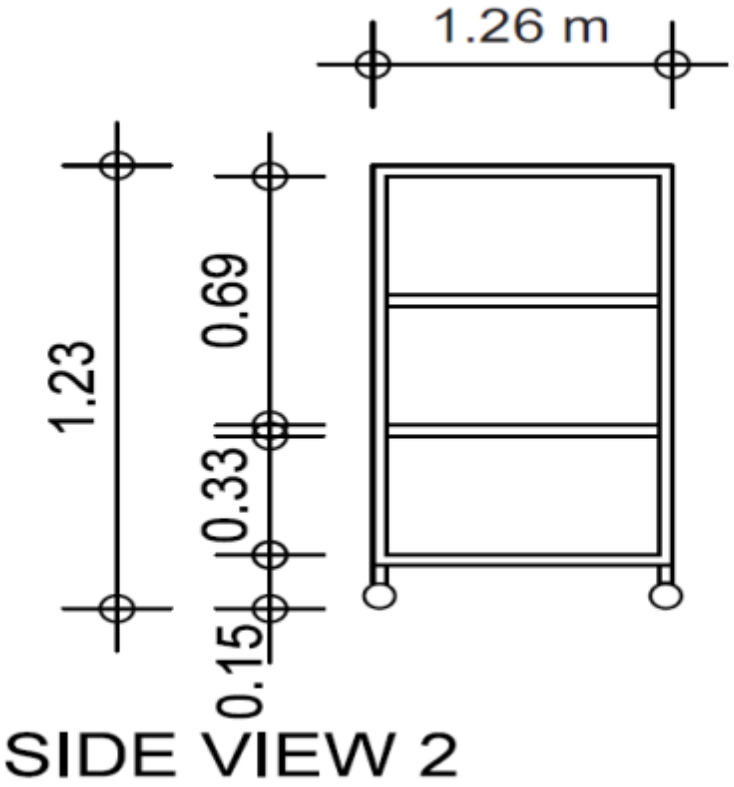
Trolley



SIDE VIEW 2

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Agrotrolley

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Standing Wall

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Barrel

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No Structure

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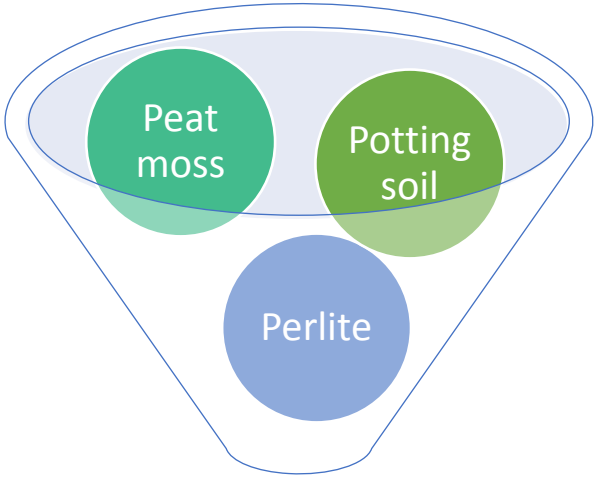
Soil components used in North Lebanon sites:



Benefits

- Better Aeration
- Good drainage

18 liters

- 1/3 Peat moss
- 1/3 Perlite
- 1/3 Potting soil

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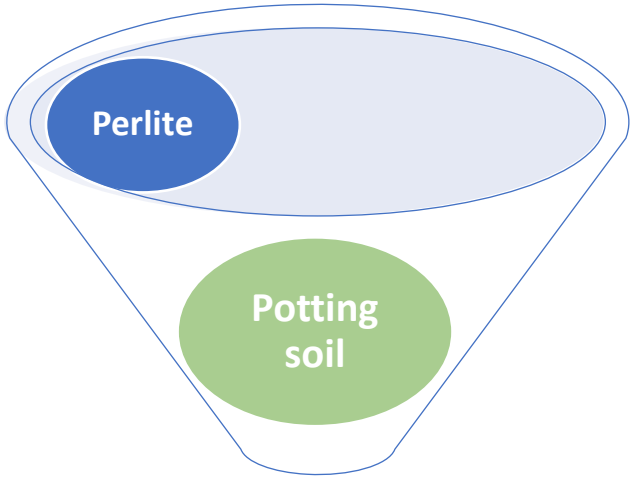
Soil components used in Bekaa sites:



18 liters

Benefits

- Better Aeration
- Good drainage

- 90% Potting soil
- 10% Perlite

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Soil mixture explained:

Peatmoss: 250 L - 340 L

Analysis Certificate

Baltic (Latvian) high bog peat degree of decomposition	H 2 - H5
Structure:	0 - 7 mm
Chemical properties: Volume weight (g/l) dry	< 55 – 90

Potting Soil: 70 L – 100 L

Potting Soil, 80 L

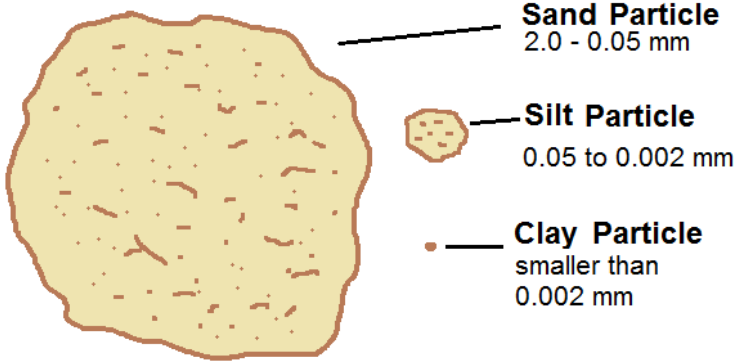
Origin: Degree of decomposition (H) according to von Post	Northern German high bog peat H3 – H7

Composition:
Mixture of approx. 35 vol % slightly to moderately decomposed peat from raised bogs (white peat) and approx. 65 vol. % highly decomposed peat from raised bogs (frozen black peat)

Structure:	very fine

Soil mixture Recommendation:

Use small Bags in order to give each person his share



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Seeds used:

1. Bakla or Purslane
2. Parsley
3. Green zaatar or Thyme
4. Spinach
5. Lettuce
6. **Radish (Not recommended)**
7. Rocca
8. Hindbeh or Dandelion
9. **Rashad or Garden cress (Not recommended)**
10. Coriander

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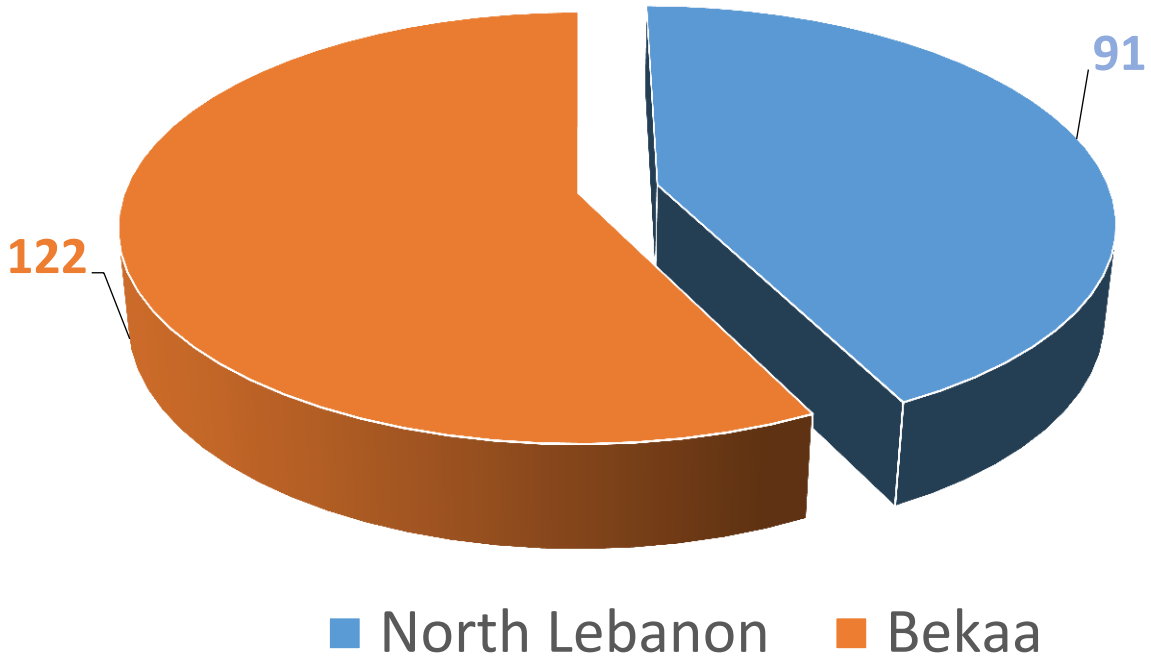
Number of Women beneficiaries:



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Site selection recommendation:

- Must have abundant water supply
- Space availability
- Willingness of the beneficiaries to be part of such agricultural techniques

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Financials :

Structure	Cost of structure $	Number of boxes	Cost of Plastic boxes	Cost of soil + seeds	Cost of Styrofoam	Cost of Linen	Total Cost
AUB wall	**112** $	**12**	**6.7 $**	**10 $**	**5 $**		**140 $**
Agroshelf	**100** $	**15**	**8.4 $**	**19 $**		**9 $**	**127 $**
Trolley	**155** $	**32**	**18 $**	**36 $**	**13.4 $**		**222 $**
Agrotrolley	**160** $	**27**	**15 $**	**31 $**		**16.2 $**	**206 $**
Standing wall	**267** $			**103 $**			**370 $**
Barrel	70 $			**24 $**			**94**
No structure		**20**	**11 $**	**24 $**			**35 $**

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Structures	Advantage	Disadvantage
AUB wall	• can utilize space more efficiently	• Vertical plants will tend to dry up fast and soil will be lost during the irrigation.
Agroshelf	• Can utilities space more efficiently	• Cost high compared to others
Trolley	• Can accommodate significant amount of boxes	• Vertical plants will tend to dry up fast and soil will be lost during the irrigation • Heavy and needs a flat surface
Agrotrolley	• Can accommodate significant amount of boxes • Easier to irrigate	• Heavy and needs a flat surface
Barrel	• More plants per square meter	• Difficult to manufacture
Standing wall	• High production	• High amount of soil • Expensive • Heavy • Water issues
No structure	• Low cost	• Needs more space

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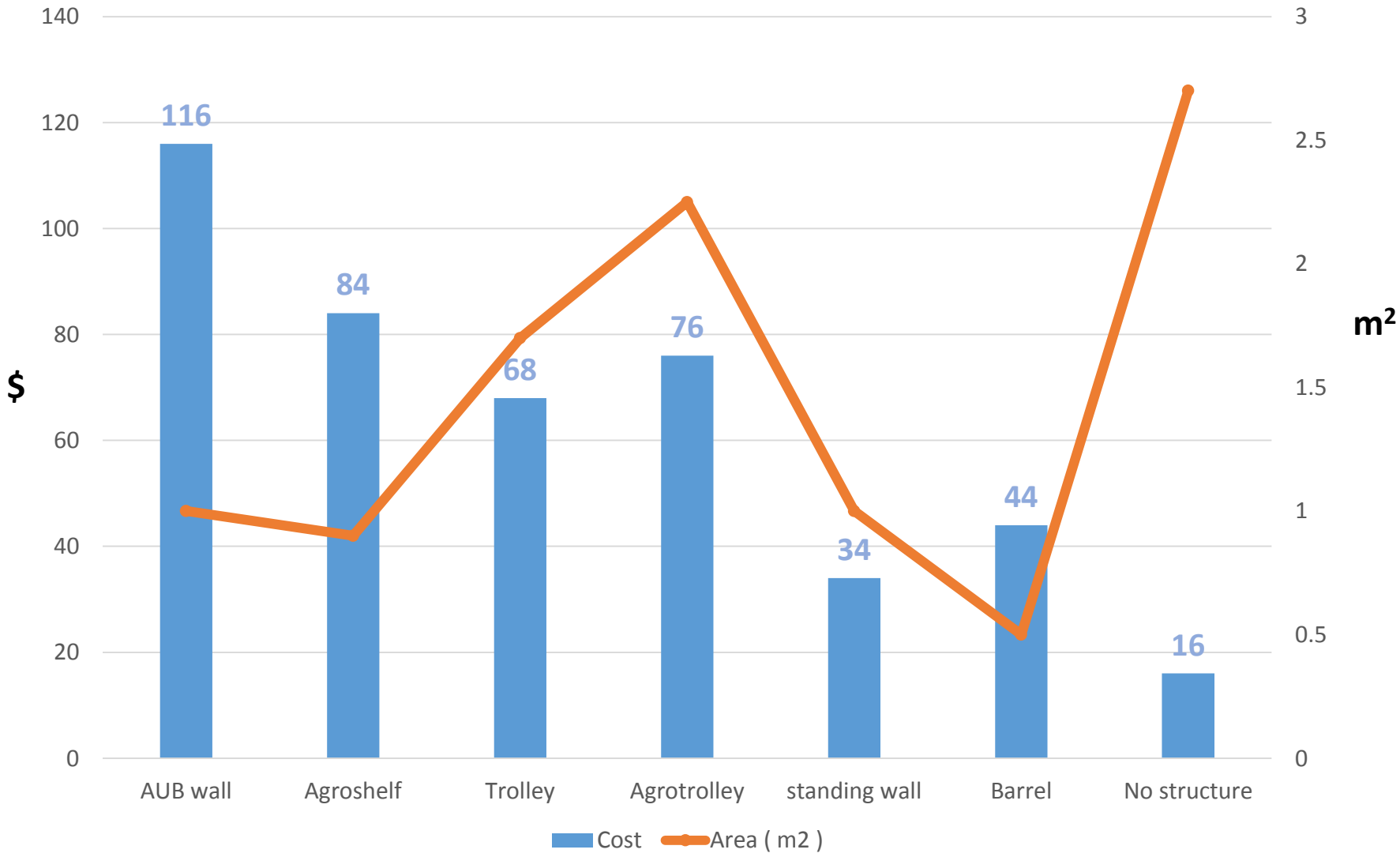
Production of 20 bundles



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Recommendations :

- Visit the site daily , especially the first 2 weeks
- Choosing the site is critical, example some Syrian sites in Bekaa receive water weekly through UN agencies and in some cases delivery might be late 1 or 2 days , which might damage the crop
- Give all beneficiaries the same structure
- It is not advised to plant during mid-summer season
- If Tomato and other vegetables are used , a plant protection program should be adopted prior to implementation. As most pests travel by air.

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THANK YOU

Vertical Garden for Refugees and Host Communities in Lebanon PILOT PROJECT

Key considerations

Aim : Production of fresh nutritious food and Boost psychological well-being . N**ot a livelihood activity**

Target : both Syrian families and Lebanese families.
Urban vs. Rural Context: Both possible as long as space is available (collective dwellings, informal settlements, etc.)

Timeframe : 6 – 9 months

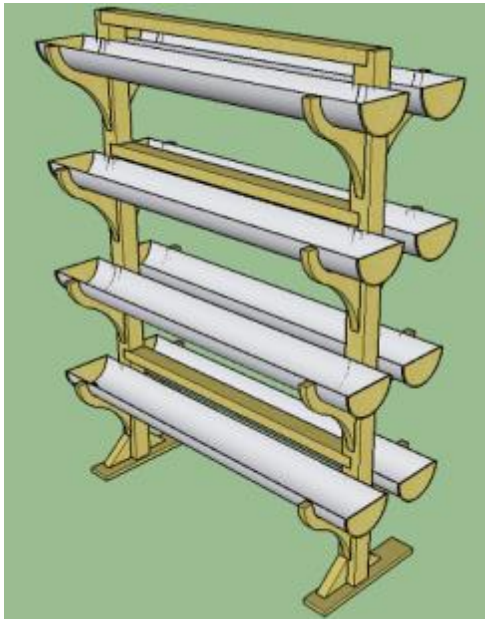
Site selection criteria: water availability; availability of space; willingness of people; dynamism of the community, etc.

- Activity can be replicated and expanded by refugees (using resources they can generate, ex plastic bottles, jars, jerry cans, etc.)
- Structures are light-weight, do not require high investment costs, moveable and do not take up much space (Items can be procured locally, as needed)
- Participation is voluntary, yet it is important to solicit engagement of youth, persons with disabilities, older persons, etc. in the implementation
- Vegetable production is based on consumption preferences with quick yields and requiring little in terms of maintenance

Adopted Planters

Handmade : PVC Planter

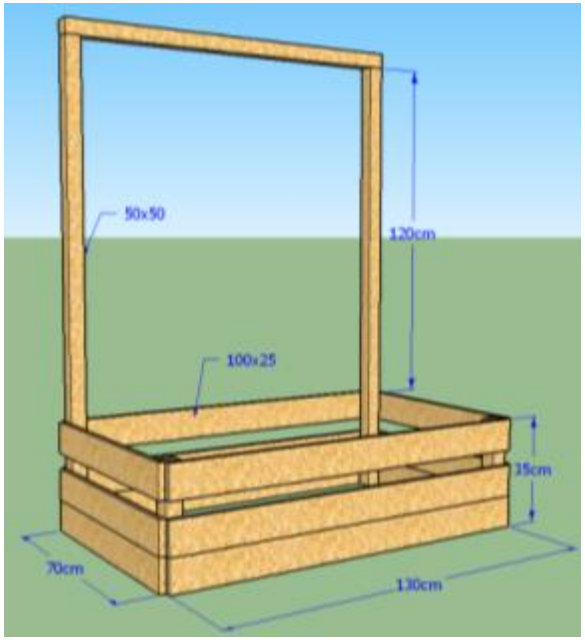
- Planting area : ~2,30 sqm – average water consumption : 2,5 – 4 liters per day
- More suitable for buildings
- Unit cost : $125 (planter + substrates + seeds)



Adopted Planters

Handmade : raised bed planter (wooden)

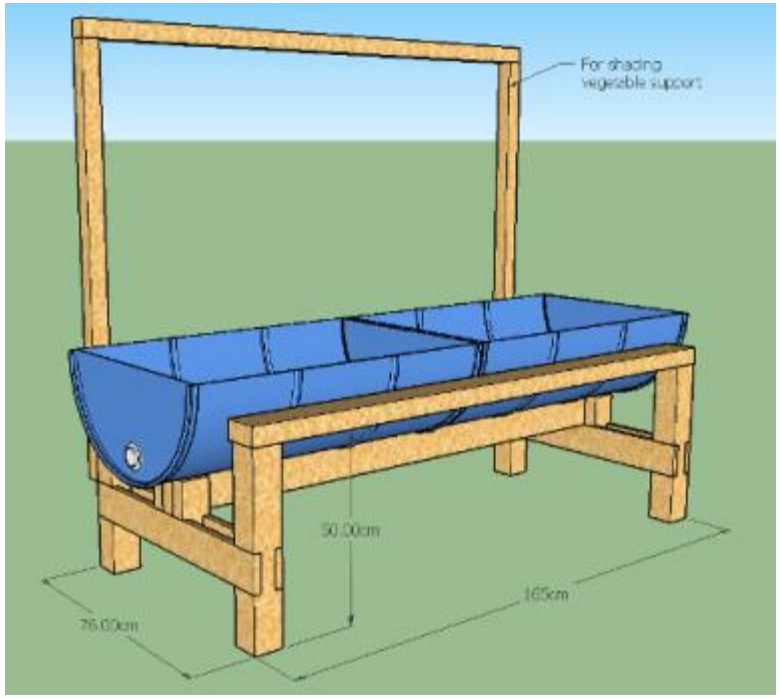
- Planting area : ~1 sqm – average water consumption : 2,5 – 3,5 liters per day
- Suitable for informal settlement (planter size can be customized depending the space available)
- Unit cost : $75 - $80 (planter + substrates + seeds/seedlings)



Adopted Planters

Handmade : raised bed planter (barrel)

Planting area : ~1 sqm – average water consumption : 2,5 – 3,5 liters per day
Unit cost : $80 (planter + substrates + seeds/seedlings)



Adopted Planters

Handmade : used wooden palettes
Unit cost : less than 40$ including substrates and seeds

Adopted Planters

Handmade : using plastic bottles, tin cans, other containers

PILOT PROJECT (300 HHs beneficiaries)

Region	Location& Type	Type	# HH	Planters type	Status
North	Tlal - Akkar	Collective Shelter	19	Mixed : barrel raised bed, pallet and PVC pipe	On-going preparation for the implementation
	Waha - Koura	Collective Shelter	132 (36 planters for all)	Mixed : barrel raised bed, pallet and PVC pipe	On-going preparation for the implementation
	Haj Hassan	Collective Shelter	47	Mixed : barrel raised bed, pallet and PVC pipe	On-going preparation for the implementation
South	Debaneh Station	Informal settlement	34	Mixed : raised bed and PVC pipe	Implementation completed
	Kfarchouba	Collective Shelter	8	PVC pipe	On-going preparation for the implementation
ML	Baaourta - Aley	Collective Shelter	14	PVC pipe	Implementation completed
	Jmeilieh - Chouf	Collective Shelter	9	PVC pipe	Implementation completed
Bekaa	Nabi Chit	Collective Shelter	6		Implementation completed
	Saadnayel 013	Informal settlement	29	Raised bed	Implementation completed
	Saadnayel 016	Informal settlement	32	Raised bed	Implementation completed

Vegetables and herbes : Onions ,green onions (Leeks), Kale, Cauliflower, Cucumber, Eggplant, Lettuce , Peppers, Persil, Radish, Tomatoes, Spinach, Zucchinis, Thymes, Mint, Okra, Peas, Garlic, Arugula

Medicinal : Rosemary, lavender, Aloe Vera, Chamomile, Rhubarb, basilica

4 to 5 varieties per HHs


تراب SOILS
للتربية البيئية لبنان
PERMACULTURE ASSOCIATION LEBANON

Faris camp (Rawda)

Syrian Eyes

2015

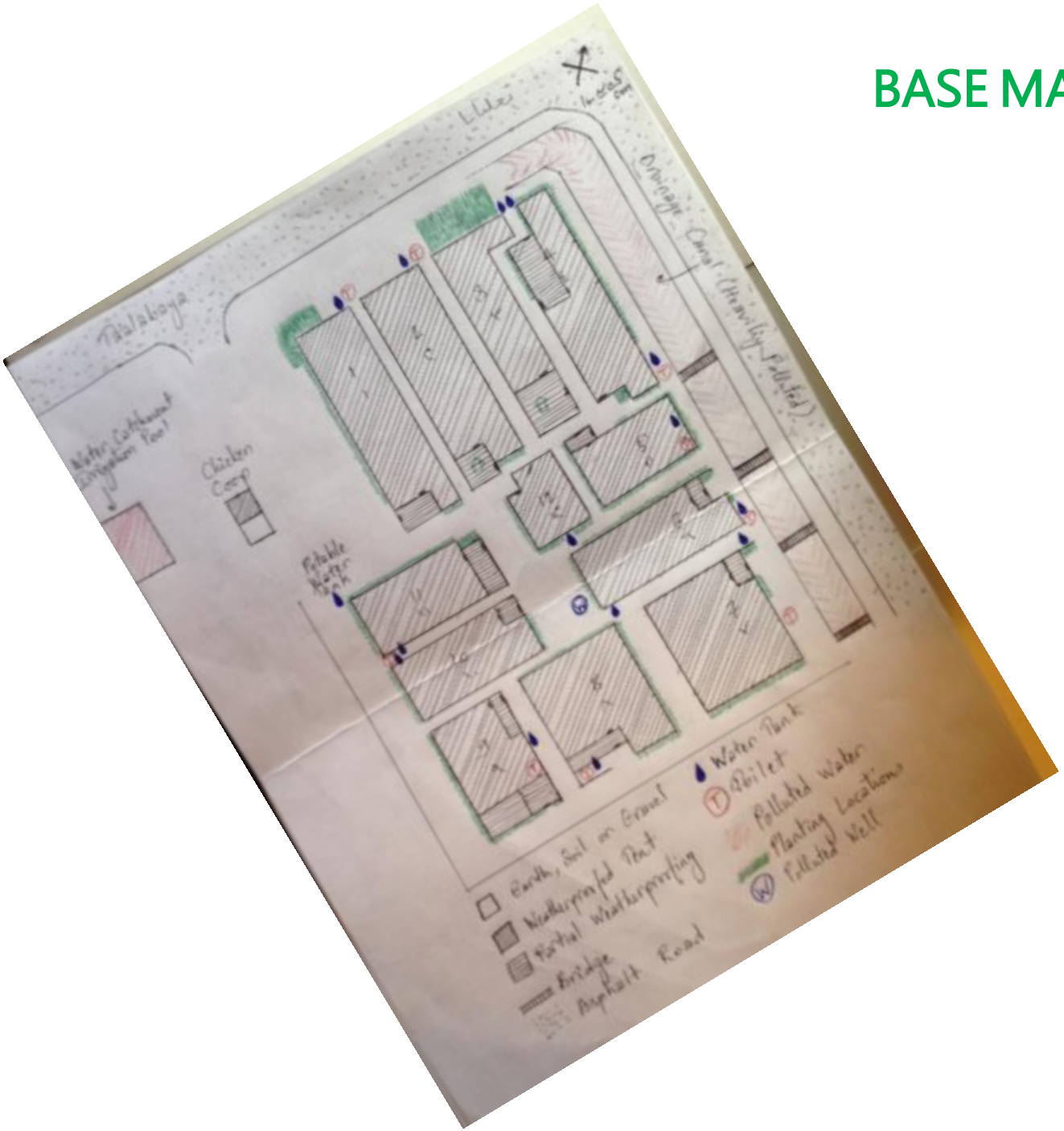
AGRICULTURE WORKSHOPS IN CAMPS
June – Oct 2016

- Location: 6 camps
  - **North Bekaa** (Talia, Baalbeck)
  - **Central Bekaa** (Taanayel, Taalabaya)
  - **West Bekaa** (Rawda, Bar Elias)

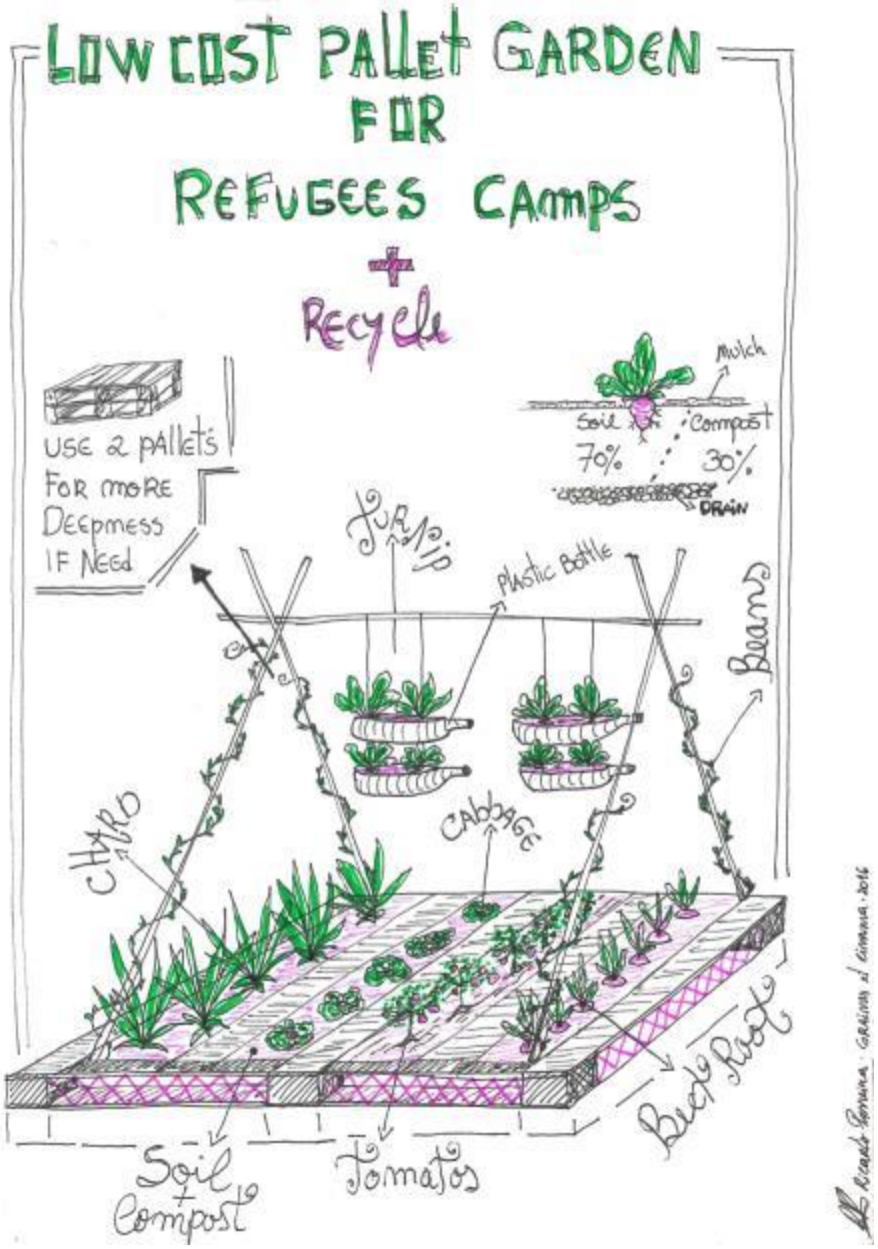
> Site selection: small camps (20 tents) + interest in gardening

> Beneficiaries: 1 per tent (total 120)

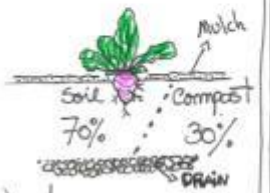
BASE MAP


Water Catchment
Chicken Coop
Fishable Water Tank
Earth, Soil or Gravel
Weatherproofed Roof
Partial Weatherproofing
Bridge
Asphalt Road
Water Tank
Toilet
Polluted Water
Planting Locations
Polluted Well

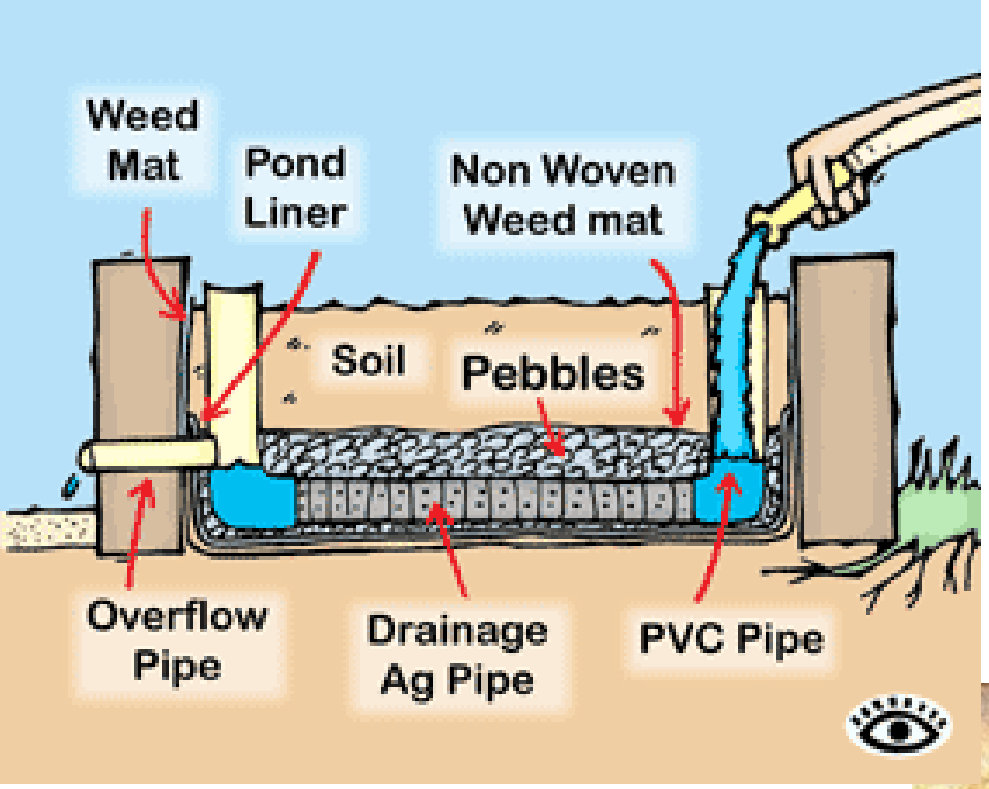
Micro-garden prototypes


LOW COST PALLET GARDEN
FOR
REFUGEES CAMPS
+
Recycle
USE 2 PALLETS
FOR MORE
DEEPMESS
IF NEED
Mulch
Soil
Compost
70%
30%
DRAIN
TURNIP
PLASTIC BOTTLE
Beams
CHARD
CABBAGE
Soil
+
Compost
Tomatos
Beet Root

LOW COST BAGS GARDEN FOR REFUGEES CAMPS + RECYCLE



Wicking Bed


Weed Mat
Pond Liner
Non Woven Weed mat
Soil
Pebbles
Overflow Pipe
Drainage Ag Pipe
PVC Pipe

CROPS

(water, open pollinated, vertical, multiple functions, 12/tent)

High Nutrition

Chard ,okra, purslane ,spinach, roquette, chicory, pepper, parsley, coriander, squash (karaa), sunflowers, beans, strawberry

Middle Nutrition / Requested by Refugees

Onions, radish, chilli, eggplants, armenian cucumber (me'te), tomato, lettuce , potato, corn

Support species

Marigold, lavender, oregano/ thyme, rosemary, basil, mint, tansy, nasturtium

Coordination

Shawish → Municipalities → Landlord *(shawish)*

Educational Material

ILLUSTRATED MANUAL

- Gardening in small spaces
- Soil
- Water management
- Integrated Pest Management
- Harvesting / seed preservation

M & E

- Baseline survey (nutrition)
- Change in diet
- Skills gained
- Health and production of crops

Urban & Rural Gardening

Improving access to nutritious and diverse fresh foods for vulnerable populations in Beirut and Mount Lebanon

&

Enhancing Food Security and Agricultural Livelihoods In Crisis Affected Areas of Akkar

10 June, 2016

Project Summary

Project Title: Improving access to nutritious and diverse fresh foods for vulnerable populations in Beirut and Mount Lebanon

Duration: 12 months

Locations: Lower Metn & Dahiyeh

Direct Beneficiaries: 2,200 (1,118 men/1,082 women)
Indirect Beneficiaries: Approximately 225,000 beneficiaries in LoweR Metn and 225,000 beneficiaries, in Dahiyeh

Beneficiary Selection

Phase 1: Prioritization of neighbourhoods

- Demographics (presence of displaced population)
- Economics (Income/poverty)
- Access to basic services
- Social cohesion

Phase 2: Identification of HHs

- Consultation with local stakeholders
- Referrals
- Female HHs/Negative coping strategies/Food security tools
- Drop-off cases from WFP food assistance with high vulnerability
- Availability of space within HH

Activities

1. 200 innovative HH-level vertical gardens
2. Distribution of agricultural kits
3. Workshops on agriculture & nutrition
4. 8 community gardens
5. 3 committee management mechanisms
6. Food Safety study

Project Summary

Project Title: Enhancing Food Security and Agricultural Livelihoods in Crisis-Affected Areas of Akkar

Locations: Akkar – Wadi Khaled (9 Villages) and Mesh Mesh

- **Project Partners**:
  - Balamand University
  - Akkar Network for Development

Direct Beneficiaries: 3,328
Indirect Beneficiaries: 15,000

- HH level production systems: 350 HHs (2520)
- Training Hubs: At least 100 farmers

Beneficiary Selection

1. HH Survey covering: food security, skills, physical space at HH level etc. Participants to be selected through mapping of pre-identified plots, vulnerability, food security etc. more than 350 HHs
2. Value Chain analysis:

- Mapping of existing agricultural species
- Identification of the three most suitable products
- Examination of the market trends in Lebanon with focus on Akkar
- Supply and demand for the identified products
- Production processes and economic value of the identified species

Relevant Activities

1. Set-up Training Hubs/Nursery
2. Home-based gardening champions
3. Designs for home based production ex. Vertical garden stacks, rainwater harvesting, biogas systems, composting etc.
4. Agricultural inputs to HHs
5. Mentoring
6. Nutrition awareness sessions