



ANNUAL REPORT 2013



1. INTRODUCTION

Established in 2011, the Research Center for Environment and Development (**RCED**)/ Beirut Arab University continues its successful efforts to fulfill its mission in carrying out and coordinating interdisciplinary and environmental research, development initiatives in Bekaa Region. Its aim is to understand and protect Lebanon precious natural resources, and contribute to their appropriate management strategies. **RCED** strives to create dialogues and interactive approaches with community members and aspires to establish mutual partnerships with national and international academic and scientific research institutions.

Subsequent to the efforts of the last year, the Managing Board and the Steering Committee in their last meetings - 28. Sept. 2012 & 16. Oct. 2012, respectively- had a comprehensive review and discussion of the perspectives and actions planned for the year 2012-2013. Both meetings provided a set of recommendations and advices to guide **RCED** towards a smooth successful implementation of the various proposed and ongoing activities. This annual report presents the progress of **RCED** has seen during 2012-2013.



2. RESEARCH ACTIVITIES

2.1 “MACROPHYTIC COMMUNITY OF LITANI RIVER AND QARAOUN LAKE”

النباتات المائية في نهر الليطاني وبحيرة القرعون

The project investigates the structure of aquatic macrophytes in Litani Rivers and Qaraoun Reservoir as most important water resources in Lebanon. During the last decade, serious concern regarding the deteriorating quality of the water of the river and reservoir has greatly grown across the country. Macrophyte indices (metrics) have been utilised for water quality monitoring and assessment of the trophic status of water bodies.



Partner Institutions:

Beirut Arab University
Litani River Authority (LRA)
Lebanese University
Athens University

Investigators:

Dr. Safaa Baydoun (PI)
Dr. Hussein Abou Hamdan
Prof. Kyriacos Georghiou
Dr. Pinelopi Delipetrou
Dr. Nabil Amacha
Prof. Lamis Chalak

Duration: 2 years

Funding Sources: National Council for Scientific Research (CNRS)

Objectives:

1. Assess the current status and ecological trends of macrophyte community structure of Litani River and Qaraoun Lake.
2. Contribute to the development of adaptive policies and management strategy to maintain and restore the integrity of the river and lake
- and resolve the instability and unsafety of national water resources.
3. Raise awareness among rural community on the alarming ecological status of the river and lake and the suitability of their water usage.



Progress:

Assessment of physical and chemical parameters of water quality and identification of aquatic macrophytes of selected locations in two seasons (Winter and Spring 2013) have been conducted.

2.2 “HERMON MOUNTAIN: BIODIVERSITY ASSESSMENT TOWARDS A VALORIZATION AND CONSERVATION ACTION PLAN”

بحث عن التنوع البيولوجي في جبل الحرمون

Lebanon is part of the Mediterranean Basin biodiversity hot spot which is the largest of the world's five Mediterranean-climate regions and the second largest hot spot in the world. Mount Hermon is a mountain cluster in the Anti-Lebanon mountain range, a key biodiversity area in the Mediterranean Basin hot spot. The overall objective of this project is to develop a deep understanding of the flora biodiversity of Mount Hermon and improve livelihood of its surrounding areas through sustainable use, conservation, appropriate management strategies and social development.

Partner Institutions:

Beirut Arab University
Lebanese University
Ministry of Social Affairs
Biodiversity Expert



Investigators:

Dr. Safaa Baydoun (PI)
Prof. Lamis Chalak
Mr. Munier Mhana
Dr. Nellie Arnold

Duration: 2 years

Funding Sources:

Beirut Arab University

Objectives:

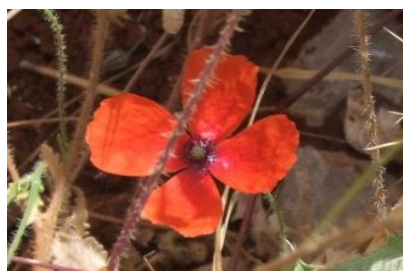
- Assessing the flora of Hermon mountain.
- Assessing the threats and the needs for conserving biodiversity.
- Building up a monitoring data information system for endemic species.
- Gathering knowledge and practices related to the utilization of the species in local communities in terms of edibility and farming systems.
- Identify sites of cultural heritage and areas of interests to environmental protection efforts, usually using natural boundaries or ecological features of the place.
- Improving public awareness of the importance of Mount flora biodiversity and its traditional and cultural heritage.

Progress:

A group of plants has been collected on June 2nd 2013 and ready to be identified.



Hermon Mountain- Lebanon



2.3 “IMPACT OF AGRICULTURAL PRACTICES ON WATER AND SOIL RESOURCES IN

CENTRAL BEKAA”

أثر الممارسات الزراعية على الموارد المائية والتربة في البقاع الأوسط

Water in Lebanon is facing steadily increasing challenges. Numerous reports show alarming deterioration in the quality of this resource and a gradual decrease in its per capita availability. This has been attributed to the growing water demands, lack of efficient management and development strategies, and extensive human practices. Agricultural, in particular, is claimed to be the major consumer of water in the country. Additionally, improper agricultural practices ranging from water overexploitation, misuse or overuse of fertilizers and pesticides, as well as haphazard disposal of farm wastes, are among the major factors adversely impacting water resources and thus the development of agriculture itself.

French Partners:

Dr. Joelle Puig/ Environment Consultant

François Molle/ Institut de Recherche pour le Développement (IRD), France; and International Water Management Institute (IWMI)

Lebanese Partners:

Dr. Talal Darwich/ Center of Remote Sensing - CNRS

Dr. Nabil Amacha/ Litani River Authority

Dr. Amin Shaaban/ Center of Remote Sensing - CNRS

Dr. Therese Attalah/ Faculty of Agriculture Lebanese University

Dr. Issam Gooda/ Faculty of Engineering – BAU

Dr. Safaa Baydoun/ RCED-BAU



Duration: 2 years

Funding Sources: Environmental Observatory-O Life (not received yet)

Objectives:

- Develop a comprehensive understanding of agricultural practices and challenges facing the cultivation of major agricultural crops in Central Bekaa.
- Develop a database of some groundwater wells in the region.
- Assessment of current status of groundwater resources in terms of quality & quantity indicators.
- Develop monitoring program of indicative observation wells.
- Promote society awareness on the impact of current agricultural practices and appropriate management approaches of groundwater resources.

This project was selected among the 10 national projects to participate in the Environmental Observatory – O Life, Lebanese-French joint project developed under the leadership of National Council-Lebanon, The main objective of the observatory to establish joint environmental research and monitoring programs of natural resources in both countries.

3. EDUCATIONAL & SOCIAL ACTIVITIES

Parallel to its scientific research activities RCED has committed to play a key role in the educational and social activities, with particular focus on youth and women. In this respect the academic year has witnessed the below activities at RCED:

“Academic Orientation Forum for the Association of Universities of Lebanon” 30. Oct.2012 – RCED



The Forum was organized by RCED in collaboration with the BAU Alumni at the Bekaa campus, more than 800 students visited the exhibition from different secondary schools in East and West Bekaa, the representatives of several Lebanese universities where there to direct the students and to provide them with the necessary information about the educational programs available, regulations, admission requirements and tuitions.

“Free Medical Clinic”

7. Oct.2012- Al Farouk Primary Health Care Center /Saad-Nayel



RCED and the Faculty of Medicine at Beirut Arab University, in cooperation with **Dar Al Fatwa in Bekaa**, organized the clinic that was inaugurated with the attendance of his Excellence, the Mufti of Zahlé and Bekaa, **Sheikh Khalil Al Mais**, Sheikh Ghanoum Nesbeen, Director, as well as the nurses staff. the team of physicians and doctors was headed by **Dr. Mohamed Hour**, Assistant Dean of the Faculty of Medicine at Beirut Arab University. The medical team offered 250 patients with the needed health care service and provided medications.



“First-Aid, theory and practice”

8. Dec.2012 – RCED

This training seminar was held in collaboration with the Faculty of Medicine and the Faculty of Health Sciences at BAU with the aim to raise social & health awareness and participating in the process of awareness and empowerment of the individual. Participants included secondary students and administrators from Azhar El Bekaa Collage, and first-year nursing students / Faculty of Health Sciences at BAU, Headed by **Dr. Nissrien Abd El Karim**.

“ نحو بيئة أفضل، وسائل في إدارة النفايات المنزلية ”

29. Nov.2012 – Averroes Collage

In order to raise environmental awareness of Public in Bekaa and stimulate the participation of local community in solving environmental issues, including the problem of solid wastes, the workshop was organized in collaboration with the School of Averroes College/Taalabaya, the **Ministry of Environment and Development Services Center in Zahle/Ministry of Social Affairs**.



“National Campaign on the Awareness of Multiple Sclerosis”

13. April.2013 – RCED

In its attempts to promote community health as a substantial component in the development of Bekaa region, the RCED hosted one of the events of the **“National Campaign on the Awareness of Multiple Sclerosis”** The campaign was organized by the **Ministry of Public Health** in collaboration with: **American University of Beirut Medical Center, National Multiple Sclerosis Society of Lebanon/ جمعية الأصدقاء اللبنانيين، الهيئة الوطنية للتصلب اللويحي في لبنان A.L.S.E.P.** The event was enriched by the contribution of **Prof. Mohammad Khedr, Dean of the Faculty of Medicine/BAU**.



4. RCED HERBAL GARDEN

A FRESH START.....

RCED realizes that plant biodiversity conservation is crucial to the environment and human livelihoods.. It also recognizes the national concern for the development of farming community in Bekaa. The Foundation of the garden has been a result of the ambitions partnership of RCED, Faculty of Pharmacy and Green Hand.



An area of 11,000 m² of a fertile land of BAU premises in Central Bekaa allocated to the garden is gradually cultivated with endemic, threatened and commercially important medicinal plants from different agro-climatic zones of Lebanon and the region. The garden will allow efficient propagation and sustainable supply of raw material to the farming community, industries and viable research and enterprises.



Objectives:

- Conserve plants from different geographical zones for having ecological and medicinal importance.
- Design the agro-techniques for cultivation and propagation of medicinal plants and standardize them.
- Document cultural knowledge and understand medicinal properties of medicinal plants.
- Promote the ecological and commercial value of medicinal plants of the region.
- Study and assess various environmental conditions and stresses on the medicinal plants affecting the content and composition of extracts and essential oils.



Beirut Arab University- Bekaa Campus



Fascination of Plants Day, 2013

“Plants in our Life”- Fascination of Plants Day, 2013

15. May.2013 - RCED

RCED has invited school students in the region to participate in the plantation of new plants in its herbal garden. The activity was organized on the occasion of the Fascination of Plants Day, 2013. Students explored the garden, learned about the plants and their importance in our life. Gifts of herbal seedlings were distributed to students to create their school or home gardens.

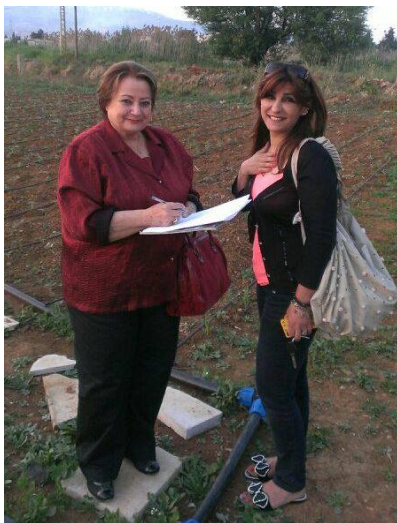
At this starting stage, 10 different plant species have already been introduced to the garden.





Georges Tohme/ President of the Board of Administration of the National Council for Scientific Research (CNRS) & **Henriette Tohme/** Prof in Natural Sciences at RCED Herbal Garden

Dr. Fouad Saad/ Counsultant of Agricultural Affairs at BAU supervising the work at RCED Herbal Garden



Nielly Arnold
Biodiversity
Expert at RCED
Herbal Garden

A GLANCE AT SOME PLANTS IN OUR GARDEN



5. NETWORKING:

The Research Center for Environment and Development (RCED) -Beirut Arab University has hosted the experts in Business Planning and Community Development **Mr. David Wagner** & **Mrs. Florence Wagner** from the International Foundation ACDI/VOCA Farmer to Farmer-Lebanon (www.acdivoca.org) /USAID, for 10 days (between 12th Feb- 21th Feb 2013). The main aim of the visit was to provide support and assistance to RCED to develop a 5-year strategic plan for a project in agribusiness for Bekaa region and build RCED capacities in community development. During the visit **Mr. David Wagner** has developed

the 5-year strategic plan that is currently being submitted to different funding programs for development of environmental and agricultural development. Our guest expert **Mrs. Florence Wagner** had a very rich interactive meetings with a spectrum women's groups in the region (**Women Association for Social Development (WASD)**, **The Lebanese Women Democratic Gathering (RDFL)**, **Ray of Hope**, and **Women's Association of Deir el Ahmar (WADA)**) during which a need assessment was done as a preparation for a continuation visit in the soon future.



www.bau.edu.lb

RCED Webpage: <http://www.bau.edu.lb/Home7>