

CEPF Final Completion and Impact Report

Organization's Legal Name:	Université Saint-Joseph
Project Title:	Conserving and valorizing the Unique Botanical Heritage of Lebanon
Grant Number:	CEPF-108497
Hotspot:	Mediterranean Basin II
Strategic Direction:	4 Strengthen the engagement of civil society to support the conservation of plants that are critically endangered or have highly restricted ranges
Grant Amount:	\$111,990.72
Project Dates:	November 01, 2018 - July 31, 2021
Date of Report:	January 27, 2022

IMPLEMENTATION PARTNERS

- DGA - the Directorate General of Antiquities: Granted USJ team the permission to apply the circum-situ conservation approach in two of the archeological sites (Anjar archeological site and Tyre ruins). The Director of the DGA Dr Sarkis Khoury, followed up very closely our project until the end and attended the last conference of the CEPF project
- HENR – Horsh Ehden Nature Reserve committee represented by the manager of the reserve Mrs Sandra Saba was involved by giving us unlimited and free access to the reserve in order to locate, map and collect seeds from different target species. They also gave us insights on which topic to discuss during the workshop.
- APJM- Association for the Protection of Jabal Moussa was involved by giving us unlimited and free access to the reserve in order to locate, map and collect seeds from different target species. The APJM manager Mrs Joelle Barakat as well as two field guides were in contact with us and accompanied us several time during our field missions.
- JAJ Cedars nature reserve committee represented by Mr. Imad Farhat was involved in the project through discussions of the different new trails we have built along with the informative and directional panels. They also provided us with the necessary documents to draft a preliminary management plan.
- Municipality of Bcharre represented by his President Mr. Freddy Keyrouz accompanied us along all the process. The creation of a microreserve to conserve the endemic and threatened species *Iris cedreti* was our main objective. They provided us with the necessary documents to complete the scientific and legal document and send it to the Ministry of Environment

CONSERVATION IMPACTS

Planned Long-Term Impacts: 3+ years (as stated in the approved proposal)

Impact Description	Impact Summary
<p>Sur la base du succès de l'intégration de la conservation des plantes au niveau de deux sites archéologiques, le Ministère de la Culture développe un plan à l'échelle du pays en faveur de la flore dans les sites dont il a la gestion</p>	<p>During this project, we have implemented a new co conservation technique that takes into consideration both the natural (plant) and cultural (archeology) heritage aspects of Lebanon. The Directorate General of Antiquities were very receptive of the idea and gave us the green light to work in the archeological sites. The fact that both the DGA and the site managers were very satisfied of the results, attended the last conference and expressed their willing to replicate this experience on other sites. We are preparing for a new action for the Mseilha archeological site in north Lebanon</p>
<p>Le modèle de micro-réserve est établi au Liban et des demandes d'appui proviennent de plusieurs communautés</p>	<p>We have submitted a draft law on the creation of a new type of protected area: the microreserve. The law will be issued once the political situation in Lebanon is stabilized. The microreserve concept is very attractive and suitable for the Lebanese territory knowing that Lebanon is a very populated country with very few space left for wildlife. The microreserve concept will be applied to Sarada, Toumet Jezzine and Bcharré.</p>
<p>Le statut de conservation d'une trentaine de plantes endémiques, tel que noté dans la Liste Rouge, sera connu et amélioré sur le long terme.</p>	<p>Information regarding the population size and status of 16 target species in different protected areas were gathered and analyzed. During the different field works in each protected area, information on the population status of each target species were gathered. This information targeted the number of individual in each population, the number of mature and juvenile individuals, the % of flowering and fruiting individual and the overall fitness aspect of the population. These information are an essential added value to provide a complement to the IUCN evaluation of the targeted species.</p> <p>We prepared the IUCN assessment for the three the target species in Jaj Cedar Reserve (<i>Rhamnus libanotica</i>, <i>Hypericum nanum</i> var. <i>prostratum</i>, <i>Smyrniopsis syriaca</i>). They will be sent to the IUCN committee for the next update campaign. In this same campaign, we will update the redlist evaluation of 13 species we already assessed and there are already published or in their way to be published : (<i>Cyclamen libanoticum</i>, <i>Salvia peyronii</i>, <i>Erica sicula</i>, <i>Paeonia keserouanensis</i>, <i>Ornithogalum libanoticum</i>, <i>Origanum libanoticum</i>, <i>Astragalus ehdenensis</i>, <i>Astragalus cedreti</i>, <i>Dianthus karamii</i>, <i>Iris antilibanotica</i>, <i>Iris bismarckiana</i>, <i>Astragalus berytheus</i>) and expand it beyond geographic range section.</p>

Impact Description	Impact Summary
Expansion et renforcement du réseau des micro-réserves pour la protection des plantes	The scientific and administrative documents were prepared for the new microreserve in Becharre and submitted to the Ministry of the environment. When the category will be adopted officially by the Ministry of Environment, many other microreserve will be proposed since, as mentioned above, this model is suitable to Lebanon's overpopulated territory
Les connaissances sur la riche diversité florale du Liban sont améliorées.	The in-depth studies carried out on endemic plants in the various reserves have improved our knowledge of these plants, their life cycle, the characteristics of their seeds and their distribution. Data for all 16 target species plants has been added to the www.lebanon-flora.org database which has been enriched over time by all these discoveries along with all species assessed and identified in Jaj cedar reserve (463 species).
La protection de la biodiversité est inscrite sur l'agenda de diverses institutions publiques.	The DGA affiliated to the Ministry of Tourism have now a new perspective on the co-conservation of both the natural and cultural heritage. We promoted also this concept to reach the Syndicate of touristic guides in Lebanon. We organized a zoom conference that gathered more than 100 attendees from Lebanon and abroad. Training sessions are scheduled for 2022 for touristic guides in different regions in Lebanon focusing on endemic plants. Beirut airport management authorities were also contacted and involved in biodiversity protection.

Planned Short-Term Impacts: 1 to 3 years (as stated in the approved proposal)

Impact Description	Impact Summary
2 aires protégées Ehden Nature Reserve and Jabal Moussa Biosphere Reserve, couvrant une superficie de 2290 ha, intègrent dans leur plan de gestion des actions concrètes pour la protection et la valorisation des plantes endémiques et y sont mises en œuvre.	<p>A report on the need conservation actions for the target species in situ and ex situ along with practical recommendations for the conservation of endemic plant species within Ehden Nature Reserve and Jabal Moussa Biosphere Reserve was delivered for each protected areas managers.</p> <p>The reports integrate general information about each target species: Description, life cycle, ecology and habitat, trade and use, genetic characterization, pollinators. In addition to the general threats of the species along with the specific threats within the protected area. Finally, based on our field work observations, the threats and the life cycle of the species, we have dedicated a section to the recommendation for the PA managers in order to better conserve the target species and preserve its microhabitat.</p> <p>The recommendations will be integrated in the future management plans of the reserves. The managers have today a better vision for the</p>

Impact Description	Impact Summary
	conservation of those endemic plants in their protected areas. Monitoring and evaluation schemes that we suggested will be adopted for a better management.
2 aires protégées Jaj Nature Reserve et Sarada Nature Reserve, couvrant une superficie de 120 ha, bénéficient d'un plan de gestion incluant des actions concrètes pour la protection et la valorisation des plantes endémiques.	A preliminary management plan was prepared and submitted for JAJ nature reserve with an exhaustive assessment of its floral diversity. The Reserve manager accompanied us very often during our field work and is now aware about the critical situation of some plants and about the necessity to keep the site open in order to preserve this diversity. The trails were drawn according to our recommendations avoiding the critical zone while showing the best places for an optimal visitor experience. As for Sarada, a report is prepared on the protection of its emblematic species <i>Iris bismarckiana</i> . Two persons from the local community foreseen to be implicated in the management of this protected area visited the site with us and were trained about the Iris lifecycle, the threats and the critical actions to be followed in order to preserve them.
Les capacités pour la protection des plantes sont renforcées pour au moins 20 personnes travaillant dans la protection de la nature.	Online workshops were conducted for the guides of Association of the Protection of Jabal moussa (APJM) and Horsh Ehden Nature Reserve on the identification of plant species in the protected areas. For APJM, the online workshops were followed by two-day field work. Around 27 attendees has participated in the field workshops that revolved around the identification of important families and species of APJM. In Jaj Cedar Reserve, the different field works conducted to assess the biodiversity and to evaluate the best placements for the trails were accompanied by giving insights on plant identification of JAJ Cedars reserve species for three guides
Les gestionnaires des aires protégées concernées par ce travail (Réserves naturelles et sites archéologiques) prendront en considération la protection des plantes endémiques présentes sur leur sites dans leur décisions.	We have highlighted the importance of plant management for different stakeholders while adapting and customizing each conservation measure to align with the area's vision. Reserve managers and committee members of three protected areas (Mr. Imad Farhat, reserve manager of JAJ cedars nature reserve, Mrs. Sandra Koussa reserve manager of Horsh Ehden Nature reserve, Mme Joelle Barakat, conservation manager of Jabal Moussa Protected Area) and two archeological sites managers (Dr. Ali Badawi, regional director of South archeological sites and Dr. Raffi Gergian, regional director of the Bekaa region) have a concrete guideline on the best conservation measures for their rare, endemic and threatened species. Recommendations about trails maintenance, creation of new trails, about trees pruning and seeds

Impact Description	Impact Summary
	<p>collection, germination and populations reinforcement were done in order to take into consideration the sustainability of the rare endemic species of the different reserves.</p> <p>Concerning the archeological sites, this was a pioneer project in Lebanon that combined the co-conservation of the cultural and the natural heritage at the same time. The managers of archeological sites were not used to the idea of conserving endemic species within their sites.</p>
<p>15 espèces endémiques strictes seront suivies de près et des mesures concrètes pour leur protection sont mises en place permettant à long terme de stabiliser et/ou augmenter leurs population dans les sites cibles.</p>	<p>Based on general threats and our different field observations, recommendations were elaborated for 16 species for a better conservation output in their respective protected areas:</p> <ul style="list-style-type: none"> - See excel file for a synthetic recommendation for conservation for each. Details are in the reports presented to the protected areas managers. <p>For some species the only recommendation was avoiding building trails where the species is present as to protect it from any damage caused by trespassing hikers. This was the case for <i>Salvia peyronii</i>.</p> <p>Another example of recommendation is for <i>Paeonia keserouanensis</i>. In fact, lighting is a limiting factor for this species development. The monitoring of the flowering percentage of the species would help better understand if it is receiving enough amount of light for necessary for the flowering of all individuals. Management for grazing and trampling ought to be necessary. shepherds' path should avoid specific trails on which the species is present. In fact, Therefore, a population management monitoring plan is a necessity when it comes to threatened endemic species. The indicators and variables that must be monitored are found in a monitoring plan section in the report.</p>
<p>5 espèces endémiques sous la menace critique d'extinction seront suivies de près et des mesures concrètes pour leur protection sont mises en place permettant à terme la stabilisation et l'augmentation des populations.</p>	<p>Five Critically endangered species benefit now from a conservation approach that was handed to the protected area managers to be applied immediately :</p> <ul style="list-style-type: none"> - For <i>Salvia peyronii</i> and <i>Cyclamen libanoticum</i> already present in protected areas, gaining deep knowledge about their biology, multiplication requirements and threats allowed us to better define their conservation approach. We formulated precise recommendations that are integrated in the management plan of JMBR. - <i>Iris antilibanotica</i> and <i>Astragalus berytheus</i> were subject to the first circum-situ conservation approach in Lebanon.

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	<p>In fact, Astragalus berytheus's last remaining population is in Tyre nature reserve and Iris antilibanotica's last population is in Khraybbet Baalback, specifically in the backyard of a private land.</p> <p>The best conservation approach that best suited both of these species, is their introduction in an already protected site (archeological sites) that bears the same climatic conditions as their natural habitat.</p> <p>To do so, we have introduced from Ex-situ genetic materials in archeological sites, seeds and seedlings of these species. In fact, the species have found the condition of the archeological sites so optimal, that they started to flower and produce seeds.</p>
<p>Mise ne place d'une nouvelle micro-réserve de plantes à Bcharré</p>	<p>A scientific report was delivered to the Ministry of Environment to endorse the application submitted by Bcharré municipality for the creation of a new microreserve for the protection of the endemic and threatened species Iris cedreti in Bcharré. The file is registered and is undergoing the long review process. We are following up on it with the different authorities knowing that the government changes 3 times during the lifespan of our project.</p>

Unexpected impacts (positive or negative)?

An unexpected positive impact of the project was the adoption of the Directorate General of Antiquities of the concept of co-conservation of the natural and cultural heritages. The concept of circum-situ conservation will be integrated and replicated through other projects (when funding is available) that aim to conserve the endemic and threatened species in already protected sites.

PROJECT RESULTS/DELIVERABLES

Overall results of the project:

The project is considered a success story on different levels:

- The first circum-situ conservation approach was adopted in two archeological sites where the introduction and translocation of the endemic and threatened species was successful
- We have also drafted and submitted a new draft law on the creation of a new category of protected area: the microreserve to the Ministry of Environment.
- A complete report was delivered to the Lebanese Ministry of Environment as to submit a request for the creation of a new microreserve in Bcharre for the protection of the endemic and threatened species Iris cedreti
- 3 nature reserves now benefit from a report on target species conservation along with general recommendation for species conservation within the nature reserve
- The relatively new nature reserve in JAJ now benefits from a preliminary management plan along with new trails and signage.

Results for each deliverable:

Component		Deliverable		
#	Description	#	Description	Results for Deliverable
1.0	Conservation d'espèces de plantes endémiques au sein de JABAL MOUSSA BIOSPHERE RESERVE (JM BR)	1.1	Statut de conservation établi pour 4 endémiques strictes, avec production d'un rapport reprenant les inventaires, cartographie et analyse des dynamiques de population.	Information regarding population size and trend for an IUCN Redlist Re-assessment were gathered. A report about species inventory, general description, field observation and conservation approach for each target species has been finalized for <i>Paeonia kesrouanensis</i> , <i>Cyclamen libanoticum</i> , <i>Erica sicula libanotica</i> , <i>Salvia peyronii</i>
1.0	Conservation d'espèces de plantes endémiques au sein de JABAL MOUSSA BIOSPHERE RESERVE (JM BR)	1.2	Plan de gestion modifié pour le focaliser sur la sauvegarde et la valorisation des plantes endémiques	A report on target species conservation approach for each species of the Association of the protection of Jabal Moussa containing information about species cycle, description, pollination, seed dispersal, genetic characterization, threats, field observations along with specific recommendation for each species and general recommendation for the conservation of the biodiversity in APJM.
1.0	Conservation d'espèces de plantes endémiques au sein de JABAL MOUSSA BIOSPHERE RESERVE (JM BR)	1.3	Un Gestionnaire représentant de Jabal Moussa Association et 4 guides formés à la reconnaissance et à la conservation des plantes, comme montré par listes de participation et photos des activités de formation	Online workshops on plant identification for the guides of APJM have been conducted over 2 days. In addition to on site field works (25 participants) has also been conducted for some insights of the most important families and species and their identification in APJM
2.0	Conservation d'espèces de plantes endémiques au	2.1	Statut de conservation établi pour 5 endémiques strictes, avec production d'un rapport	Information regarding population size and trend for an IUCN Re-assessment were gathered. A report about species inventory,

Component		Deliverable		
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	sein de HORSH EHDEN NATURE RESERVE (HENR).		reprenant les inventaires, cartographie et analyse des dynamiques de population.	general description, field observation and conservation approach for each target species has been finalized for Astragalus cedreti, Astragalus ehdenensis, Origanum libanoticum, Ornithogalum libanoticum, Dianthus karami
2.0	Conservation d'espèces de plantes endémiques au sein de HORSH EHDEN NATURE RESERVE (HENR).	2.2	Modification du plan de gestion pour le focaliser sur la sauvegarde et la valorisation des plantes endémiques	A detailed report on target species conservation approach for each species of Horsh Ehdén Nature Reserve was submitted to the reserve manager. It contains information about species cycle, description, pollination, seed dispersal, genetic characterization, threats, field observations along with specific recommendation for each species and general recommendation for the conservation of the biodiversity in HENR.
2.0	Conservation d'espèces de plantes endémiques au sein de HORSH EHDEN NATURE RESERVE (HENR).	2.3	Un Gestionnaire représentant de Horsh Ehdén et 4 guides formés à la reconnaissance et à la conservation des plantes, comme montré par listes de participation et photos des activités de formation	Online workshop was conducted on the importance of HENR biodiversity and the endemic species for 9 guides or "guides to be" of HENR.
3.0	Evaluation de la richesse botanique et conservation d'espèces de plantes endémiques de JAJ NATURE RESERVE (JNR)	3.1	Inventaire botanique préliminaire de JNR et identification des plantes endémiques	Around 20 field trips were conducted in JAJ Cedars reserve aiming to assess its biodiversity. A list of 466 plant species: 417 shrubs or herbs and 49 trees species present on the site has been identified. A document showing the list of species name according to the plant list (http://www.theplantlist.org/) along with their classification, flowering period

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				endemism and IUCN status (when available) was prepared, printed and ready to be distributed at the reserve entry.
3.0	Evaluation de la richesse botanique et conservation d'espèces de plantes endémiques de JAJ NATURE RESERVE (JNR)	3.2	Rapport sur la Composante sauvegarde et valorisation des plantes endémiques rédigé et soumis au gestionnaire pour inclusion dans le plan de gestion	A preliminary management plan was prepared for JAJ cedars reserve integrating the social aspect of JAJ, its biodiversity, and the main management objectives of the reserve. The full floral assessment was also integrated in the management plan along with recommendations for the conservation of the plant species and the trails that were drawn for the reserve.
3.0	Evaluation de la richesse botanique et conservation d'espèces de plantes endémiques de JAJ NATURE RESERVE (JNR)	3.3	Un Gestionnaire représentant de Jaj et 2 guides formés à la reconnaissance et à la conservation des plantes, comme montré par listes de participation et photos des activités de formation	Jaj Nature Reserve still don't have guides. Education material for field guides is prepared and communicated to the reserve manager. It is noteworthy that 3 potential guides and the reserve manager were accompanying us very often during our field work. They are able today to identify the major plant families and the endemic plants we worked on.
5.0	Etude de faisabilité pour une micro-réserve à Bcharré, réalisée de manière participative avec les parties prenantes	5.1	Rapports scientifiques d'inventaire et cartographie	Field works have been conducted in Bcharré for the assessment of the Iris cedretii. <ul style="list-style-type: none"> - A distribution map for the species present on site have been drawn and used as a principal document for the identification of the plot property that will be dedicated as a microreserve for the conservation of Iris cedreti - A scientific document detailing the reasons of the classification of the site as

Component		Deliverable		
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				protected area was prepared and submitted to the Ministry of Environment.
6.0	Gestion du projet ,valorisation des résultats et renforcement des capacités de USJ	6.1	Rapports semestriels d'activités, rapports de suivi des sauvegardes et rapports financiers trimestriels soumis en temps et heure	Rh�a Kahal� and Christina Haber, two young researchers from USJ are trained to prepare narrative and financial reports as well as to write project proposals. However, the political, economic and sanitary situations hindered all our efforts to respect deadlines.
6.0	Gestion du projet ,valorisation des r�sultats et renforcement des capacit�s de USJ	6.2	C�r�monie de cloture organis�e, comme montr�e par les photos de l'�v�nement et la couverture presse	The closure ceremony took place on July 27th. A conference report was conducted. The closure ceremony was held on the Saint-Joseph University campus on July 27th 2021 at 16h00pm. In order to comply with national restrictions to counter the accelerating spread of COVID-19 infections, only stakeholders and beneficiaries of the project (i.e., reserve managers, regional directors of different archeological sites, Directorate General of Antiquities etc..) were allowed to attend physically the conference on site. They were 60 people on site. The event was transmitted live through social medias (Facebook and YouTube channel of the university (https://www.facebook.com/USJFS/videos/563399318028553/ with more than 3000 reach https://m.facebook.com/story.php?story_fbid=349022960344246&id=100057096354718 conference post on Facebook.
1.0	Conservation d'esp�ces de plantes end�miques au	1.4	Mise en r�serve de graines des 4 esp�ces end�miques	Seeds from the target species (Paeonia keserouanensis and Erica sicula and Cyclamen

Component		Deliverable		
#	Description	#	Description	Results for Deliverable
	sein de JABAL MOUSSA BIOSPHERE RESERVE (JMBR)		étudiées dans la banque de graines Jouzour Loubnan	libanoticum and Salvia peyronii) have been collected and now stored in Jouzour Loubnan seed bank. Ex-situ germination protocols for Paeonia keserouanensis and Erica sicula and Cyclamen libanoticum have been elaborated. The germination protocol of Salvia peyronii was not successful and the scarcity of seeds didn't allow us to repeat the experiment. We are very sensitive to the number of seeds we collect from the wild of a rare plant. The discovery at the end of the season of new spots of this plant will allow the harvesting of a higher number of seeds to try again.
2.0	Conservation d'espèces de plantes endémiques au sein de HORSH EHDEN NATURE RESERVE (HENR).	2.4	Mise en réserve de graines des 5 espèces endémiques étudiées, comme montré par les inventaires de la banque de graines	While conducting our field work, seeds of the targeted species were collected and stored in Jouzour Loubnan seed bank. Germination protocols all <i>Organanum libanoticum</i> , <i>ornithogalum</i> , <i>Astragalus ehdenensis</i> and <i>A. cedretii</i> are now elaborated and optimized.
2.0	Conservation d'espèces de plantes endémiques au sein de HORSH EHDEN NATURE RESERVE (HENR).	2.5	METT filled for Ehden Nature Reserve	FON was responsible for filling the METT with HENR reserve manager
3.0	Evaluation de la richesse botanique et conservation d'espèces de plantes endémiques de JAJ NATURE RESERVE (JNR)	3.4	METT filled for Jaj Nature Reserve	METT score in 2018 is 48 METT score in 2021 is 55

Component		Deliverable		
#	Description	#	Description	Results for Deliverable
6.0	Gestion du projet ,valorisation des résultats et renforcement des capacités de USJ	6.3	Démonstration à travers les scores du CSTT et GTT entre le début et la fin du projet	CSTT in 2018: 73 CSTT in 2021: 77
7.0	Appui à la gestion communautaire de la micro-réserve pilote de Sarada.	7.1	Amélioration de la gestion de la PMR, comme montré par la comparaison du METT en début et fin de projet	METT score in 2018 is 10 METT score in 2021 is 15
7.0	Appui à la gestion communautaire de la micro-réserve pilote de Sarada.	7.2	Rapport de suivi de la mise en oeuvre communautaire, suivant le Process Framework validé en 2017	Identification of resource people to be part of the Microreserve committee and several site visits during the Iris flowering period to assess the status of the population. However, these resource persons, including a former student of USJ, an agricultural engineer expected to lead the committee, two directors of local schools, a lawyer and a guide, do not have legal status as long as the area is not legally designated yet
5.0	Etude de faisabilité pour une micro-réserve à Bcharré, réalisée de manière participative avec les parties prenantes	5.2	Rapports des réunions avec les parties prenantes sur les options de gestion et les possibilités d'établissement de micro-réserve"	After the meeting with the mayor of Becharre municipality, Mr. Freddy Keyrouz, about the potential creation of a micro reserve in becharre for the protection of iris cedreti, we have followed up on the requested documents needed by the ministry of Environment for the creation of a micro reserves. In addition, we have submitted a draft law for the creation of a new category of protected areas in Lebanon: The micro reserve. When the law is issued, the legal procedure of microreserve creation might differ and be much easier than the current one. All documents needed for the

Component		Deliverable		
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				creation of a microreserve on a public land were presented to the ministry of Environnement.
5.0	Etude de faisabilité pour une micro-réserve à Bcharré, réalisée de manière participative avec les parties prenantes	5.3	Plan d'action pour les parties prenantes affectées (éventuellement), intégré dans le draft de plan de gestion.	No specific management plan for Bcharré has been developed. However, points for the management of a microreserve in general were included in the document submitted to the Ministry of Environment for the creation of the new category of protected area.
5.0	Etude de faisabilité pour une micro-réserve à Bcharré, réalisée de manière participative avec les parties prenantes	5.4	Dossier complet remis au Ministère de l'Environnement	All requested documents were submitted to the Ministry of Environnement
6.0	Gestion du projet ,valorisation des résultats et renforcement des capacités de USJ	6.4	Deux membres de l'USJ renforcés dans leur capacités et intégrés dans un réseau régional, comme montré par leur note de mission (Une/deux mission d'échange en Méditerranée)	This was not possible due to COVID-Restrictions. However online meetings were very often organized and attended by the team members.
6.0	Gestion du projet ,valorisation des résultats et renforcement des capacités de USJ	6.5	Un drone acquis pour le laboratoire et capacités d'au moins 2 membres de l'équipe de l'utiliser pour la recherche et la communication.	The drone was used when permitted by the local authorities to assess biodiversity. Magda and Anthony were trained to use it. It was used at Jaj Nature reserve, Tyre archeological site and in Bcharré. It helped identify trails and map the extension of Iris populations during flowering periods. Shots were used for scientific purposes but also in the communication films used to present the project results.

Component		Deliverable		
#	Description	#	Description	Results for Deliverable
4.0	Conservation circum-situ d'espèces de plantes endémiques	4.1	Ré-établissement d'une population d'Iris antilibanotica sur le site d'Anjar et établissement d'un rapport de suivi pour le gestionnaire du stie et le Ministère de la Culture.	Iris antilibanotica seedlings were introduced in the archeological site. Some of which were successfully developed so far 57 seedlings, 100 seeds were now planted on site and we have translocated 10 Iris antilibanotica rhizomes from the last remaining population in Lebanon on Anjar Archeological site as well.
4.0	Conservation circum-situ d'espèces de plantes endémiques	4.2	Ré-établissement d'une population d'Astragalus berytheus sur le site archéologique de Tyr et établissement d'un rapport de suivi pour le gestionnaire du stie et le Ministère de la Culture.	Astragalus berytheus seedlings (20 seedlings) and 200 seeds have been reintroduced in Tyre archaeological site. Seeds and seedlings are now thriving on site.

Tools, products or methodologies that resulted from the project or contributed to the results:

- Report for Iris antilibanotica introduction in Anjar archeological site.
- Report for Astragalus berytheus introduction in Tyre archeological site.
- Preliminary management plan for JAJ cedars nature reserve.
- Target species Conservation Report for HENR.
- Target species Conservation report for APJM.
- Target species illustration for APJM.
- Panel for HENR on altitudinal distribution of conifers (printed, installment in the spring)
- Panels for Jaj cedars nature reserve (informative, directional and interpretative) (printed, installment in the spring).
- Panel on Circum-situ technique for the conservation of Astragalus berytheus in Tyre archeological site.
- Panel on Circum-situ technique for the conservation of Iris antilibanotica in Anjar archeological site.
- 2 Booklets on trees and shrubs; and flowers for JAJ (1 booklet under printing).
- 2 Booklets on trees and shrubs; and flowers for HENR (1 booklet under printing).
- Leaflet for JAJ cedars nature reserve (General information and importance of the reserve).
- Mini video : The story of Beirut -Astragalus berytheus conservation : <https://youtu.be/0a8mK3ITAXs>
- Mini video: Iris antilibanotica - The rainbow goddess in Anjar Archeological site : <https://youtu.be/HOzmt3CYoLE>
- Powerpoint presentation on the importance of the biodiversity in HENR and APJM (workshop presentation).

- Individual plant signages for JAJ and Anjar archeological site

PORTFOLIO INDICATORS

Portfolio Indicator Number	Portfolio Indicator Description	Expected Numerical Contribution	Expected Contribution Description	Actual Numerical Contribution	Actual Contribution Description
2.0	Number of KBAs under improved management and number of hectares covered			6,520	<p>==NOTE: changed after project published to remove ha counted twice with FoN grant ==</p> <p>1. KBA LBN07: Keserwan - Jabal Mousa - APJM: 6500 ha</p> <p>2. LBN09: Mount Makmel and upper Kadisha valley: -HENR: 450 ha (Note: excluded from report as reported already by FoN) - JAJ: 20 ha</p>
3.0	Number of sites that gain official permanent protection status and number of hectares covered				
1.1	Number of land-use plans or land use management practices incorporate provisions for biodiversity conservation (e.g., integrated coastal zone management				

Portfolio Indicator Number	Portfolio Indicator Description	Expected Numerical Contribution	Expected Contribution Description	Actual Numerical Contribution	Actual Contribution Description
	plans, river basin management plans, agricultural development plans, etc.)				
1.4	Number of globally threatened species benefitting from reduced pressure from unsustainable practices (hunting, fishing, over-harvesting)				
4.1	Number of threatened plant species seeing status improved (i.e., short-term increase in population and/or breeding success)			13	Cyclamen libanoticum, Salvia peyronii, Erica sicula, Paeonia keserouanensis, Ornithogalum libanoticum, Origanum libanoticum, Astragalus ehdenensis, Astragalus cedreti, Iris antilibanotica, Iris bismarckiana, Astragalus berytheus
4.2	Number of unprotected sites important for plants with improved management practices			4	2 archeological sites that are now integrating plant conservation. Becharre and Sarada which are yet to be designated as microreserves where the populations of iris cedretii and Iris bismarckiana are being managed respectively.
4.3	Number of management plans			3	(Jabal moussa Biosphere reserve, Horsh ehden

Portfolio Indicator Number	Portfolio Indicator Description	Expected Numerical Contribution	Expected Contribution Description	Actual Numerical Contribution	Actual Contribution Description
	of protected areas incorporating specific actions for plant conservation				nature reserve And Jaj Cedars nature reserve)
4.4	Number of protected area managers demonstrating improved skills and knowledge on plant conservation			5	<ul style="list-style-type: none"> - Mr. Imad Farhat, reserve manager of JAJ cedars nature reserve, - Mrs. Sandra Koussa reserve manager of Horsh Ehdén Nature reserve, - Mme Joelle Barakat, conservation manager of Jabal Moussa biosphere reserve - Dr. Ali Badawi, regional director of South archeological sites - Dr. Raffi Gergian, regional director of the Bekaa region-General Directorate of Antiquities - Mr Asadaour Tunkerian, Archeological guide in ANjar.
4.5	Number of locally endemic or highly threatened plant species for which improved knowledge is available			16	Cyclamen libanoticum, Salvia peyronii, Erica sicula, Paeonia keserouanensis, Ornithogalum libanoticum, Origanum libanoticum, Astragalus ehdenensis, Astragalus cedreti, Iris antilibanotica, Iris bismarckiana, Astragalus berytheus, Iris cedreti, Rhamnus libanotica,

Portfolio Indicator Number	Portfolio Indicator Description	Expected Numerical Contribution	Expected Contribution Description	Actual Numerical Contribution	Actual Contribution Description
					Hypericum nanum var. prostratum, Smyrniopsis syriaca, Dianthus karami
4.6	Number of KBAs for which information on plants is improved			2	LBN07: Keserwan - Jabal Mousa LBN09: Mount Makmel and upper Kadisha valley
4.7	Number of young professionals with substantial experience in plant conservation gained			38	Online training for the identification of important plant families and species for protected area guides and guides to be: APJM: around 25 young professionals HENR: 9 young professionals JAJ: 3 guides to be Anjar archeological site : 1 archeological guide attracted by Nature
4.8	Number of plans adopted at the national level with improved integration of plant conservation needs				

GLOBAL INDICATORS

Protected Areas

Protected areas that have been created and/or expanded as a result of the project. Protected areas may include private or community reserves, municipal or provincial parks, or other designations where biodiversity conservation is an official management goal.

Name of Protected Area	WDPA ID*	Latitude	Longitude	Country	Original Total Size (Hectares) **	New Protected Hectares ***	Year of Legal Declaration or Expansion
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*World Database of Protected Areas

**If this is a new protected area, 0 should appear in this column

*** This column excludes the original total size of the protected area.

Key Biodiversity Area Management

Key Biodiversity Areas (KBAs) under improved management—where tangible results have been achieved to support conservation—as a result of the project.

KBA Name	KBA Code	Size of KBA	Number of Hectares with Improved Management
Keserwan - Jabal Mousa	LBN07		6,500
Mount Makmel and upper Kadisha valley	LBN09		470

Production Landscapes

Production landscapes with strengthened management of biodiversity as a result of the project.

A production landscape is defined as a site outside a protected area where commercial agriculture, forestry or natural product exploitation occurs.

Name of Production Landscape	Latitude	Longitude	Hectares Strengthened	Intervention
Khraybet Baalback	33.87572	36.14417	1	This area contains the last remaining population of <i>Iris antilibanotica</i> . The owner of this private land is now aware of the management practices needed to conserve this plant species

Benefits to Individuals

- **Structured Training:**

Number of Men Trained	Number of Women Trained	Topics of Training
19	19	<ul style="list-style-type: none"> - Plant identification - Insights on important families and species - Plant conservation - Seed collection

- **Cash Benefits:**

Number of Men - Cash Benefits	Number of Women - Cash Benefits	Description of Benefits

Benefits to Communities

View the characteristics column below with the following corresponding codes:	View the benefits column below with the following corresponding codes:
1- Small Landowners	a. Increased Access to Clean Water
2- Subsistence Economy	b. Increased Food Security
3- Indigenous/ Ethnic Peoples	c. Increased Access to Energy
4- Pastoralists / Nomadic Peoples	d. Increased Access to Public Services
5- Recent Migrants	e. Increased Resilience to Climate Change
6- Urban Communities	f. Improved Land Tenure
7- Other	g. Improved Use of Traditional Knowledge
	h. Improved Decision-Making
	i. Improved Access to Ecosystem Services

Community Name	Community Characteristics							Type of Benefit									Country	Number of Males Benefitting	Number of Females Benefitting
	1	2	3	4	5	6	7	a	b	c	d	e	f	g	h	i			

Characteristics of "Other" Communities:

Policies, Laws and Regulations

View the topics column below with the following corresponding codes:			
A- Agriculture	E- Energy	I- Planning/Zoning	M- Tourism
B- Climate	F- Fisheries	J- Pollution	N- Transportation
C- Ecosystem Management	G- Forestry	K- Protected Areas	O- Wildlife Trade
D- Education	H- Mining and Quarrying	L- Species Protection	P- Other

No.	Name of Law	Scope	Topics															
			A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	Law 130 30/4/2019 : categories of protected areas	National	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

“Other” Topics Addressed by the Policy, Law or Regulation:

No.	Country/ Countries	Date Enacted/ Amended	Expected impact	Action Performed to Achieve the Enactment/ Amendment
1	Lebanon	February 01, 2022	Creation of a new category of protected area in Lebanon : the Microreserve	We have submitted a draft law for the addition of a new category of PA in Lebanon, the micro reserve for the protection of one or more threatened and endemic species.

Companies Adopting Biodiversity-friendly Practices

A company is defined as a for-profit business entity. A biodiversity-friendly practice is one that conserves or uses natural resources in a sustainable manner.

Name of Company	Description of Biodiversity-Friendly Practice	Country/Countries where Practice was Adopted

Networks and Partnerships

Networks/partnerships should have some lasting benefit beyond immediate project implementation. Informal networks/partnerships are acceptable.

Name of Network/Partnership	Year Established	Country/Countries	Established by Project?	Purpose
MOU USJ/JABAL MOUSSA	2019	Lebanon	Yes	SCIENTIFIC PARTNERSHIP
MOU USJ/HENR	2019	Lebanon	Yes	SCIENTIFIC PARTNERSHIP
MOU USJ/ DGA	2020	Lebanon	Yes	Scientific partnership

Sustainable Financing

Sustainable financing mechanisms generate funding for the long-term (generally five or more years). These include, but are not limited to, conservation trust funds, debt-for-nature swaps, payment for ecosystem services (PES) schemes, and other revenue, fee or tax schemes that generate long-term funding for conservation.

Name of Mechanism	Purpose	Date Established	Description	Country/Countries	Project Intervention	Delivery of Funds?
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Globally Threatened Species

Globally threatened species (CR, EN, VU) on the IUCN Red List of Threatened Species, benefitting from the project.

Genus	Species	Common Name (English)	Status	Intervention	Population Trend at Site
Iris	cedreti		CR	habitat conservation by submitting a creation of a new microreserve	Stable
Ornithogalum	libanoticum		EN	population monitoring	Stable
Iris	bismarckiana	Nazareth Iris	EN	population reinforcement	Stable
Iris	antilibanotica		CR	conservation action plan	Unknown

LESSONS LEARNED

- Strong communication between the project implementing team, the donor and local stakeholders is key to insure project success and avoid any misperceptions in regard to what the project is doing.
- Adopt flexible and responsive approach in dealing with Governmental bodies (The Directorate General of Antiquities in our case). It led us to a mutual beneficial relationship.
- Performing workshops on the ground, in situ is the best way to engage local guides with their direct environment.
- Spare time to build a strong inclusion of locals in capacity building and in project interventions is rewarding. Those people will support the conservation scheme even after the change of the management team of the protected areas.
- Building a positive and trust relationship with the local stakeholders not only managers but also people on the ground. The daily follow up on the introduced plants in the archeological sites by those persons was very helpful.
- Embrace tensions and conflict and don't enter in local conflicts is recommended.
- Build capacity of all team members so they can be interchangeable and enrich the decisions with their ideas during the project implementation.
- Make realistic commitments especially in unstable country like Lebanon.
- Social media communication is encouraged to raise awareness and communicate about the work done.

SUSTAINABILITY/REPLICATION

- The concept of Plant-Microreserve is making his way in Lebanon. The creation of this new category of protected areas will pave the way to dozen of sites to be protected under this flag.
- The circum situ approach, protecting endemic species on archeological sites is also another success of this project. After publishing the results scientifically, the DGA will adopt this approach and replicate it in every site in Lebanon where plants can find a suitable refuge on an archeological site.

ENVIRONMENTAL AND SOCIAL SAFEGUARDS/STANDARDS

ADDITIONAL COMMENTS/RECOMMENDATIONS

ADDITIONAL FUNDING

Total Amount of Additional Funding Actually Secured (USD)	\$0.00
Breakdown of Additional Funding	

INFORMATION SHARING AND CEPF POLICY

CEPF is committed to transparent operations and to helping civil society groups share experiences, lessons learned and results. For more information about this project, you may contact the organization and/or individual listed below.

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