Small Grants – Project Completion and Impact Report

Instructions to grantees: please complete all fields, and respond to all questions listed below.

Organization Legal Name	**Bethlehem University. Section: Palestine Institute for Biodiversity and Sustainability (PIBS)**
Project Title	Green Oasis in Bethlehem for Plant and Ecosystem Conservation.
Grant Number	CEPF-111464
Date of Report	14 October 2021

CEPF Hotspot: Mediterranean Basin Biodiversity Hotspot

Strategic Direction:
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: 20,000 USD

Project Dates: 1st September 2020 to *31st October 2021*

PART I: Overview

1. Implementation Partners for this Project *(list each partner and explain how they were involved in the project)*

The Palestine Institute for Biodiversity and Sustainability (PIBS) is the main institute for this work and its role was to coordinate and execute most of the activities of the projects. The team (sub-partners) include project leader (Prof. Qumsiyeh), project manager (Mohammad Najajrah) and staff of PIBS including those on the overlapping EUPI funded project entitled"Unity and Diversity in Nature and Society" to ensure collaboration and complementation. An existing room was repurposed for a herbarium in the museum and integrated into a new Biodiversity Center at PIBS partially supported with the EUPI project. This latter project is a partnership between PIBS-BU,the Galilee Society, and the Palestinian Center for Rapprochement between People. Other partners and experts used and their role

A) Ms Roubina Ghattas-Pioneer Consultancy: Roubina and her team led the effort for updating the floral knowledge of Al-Makhrour Valley. The original work by this partner in Al-Makhrour was funded by the Darwin initiative. For this project, the partner conducted gap-filling survey of the valley from 5 October 2020 to 28 February 2021.
B) The Environment Quality Authority (EQA): EQA was a main partner with whom we signed a general Memorandum of Understanding that helps us integrate our work and ensure smooth collaboration. The EQA team and our project team conducted regular work meeting and visit of the site of PIBS Botanical Garden. As a result, of this collaborative work on plants, many ideas were generated. Those ideas were also

integrated into the formulation of the 6th National Report to CBD and are being incorporated into the National Biodiversity Strategy and Action Plan for Palestine (NBSAPP) (to be completed in July 2022). In particular we found the input from Mohammad Mahassnah (on plants) and from Dr. Issa Musa Albaradeiya (on in situ conservation strategies and protected areas) to be critical for the success of this project.

C) Mr. Banan Al Sheikh: helped the project by a gap-filling survey of flora in Wadi Ahmad (Cremisan Valley, an extension of Al-Makhrour). He also worked in the Herbarium, in the botanic garden, and in the field giving input on species identification, status of endangered plans, and proper handling of specimens. He also helped building capacity of one of our staff (Johann Gedeon) in the plant taxonomy for a long term sustainability of the work and the study of the flora of the West Bank in general and the flora of the Botanical Garden in particular.
D) Professor Ruediger Prasse of Germany is a well known botanical expert and he supported the work remotely. Several meetings were held with him that resulted in developing a standard operating procedure for our garden.
E) Jessie Qumsiyeh: Team member who attended a training workshop in Shanghai run by Botanic Gardens Conservation International on issues of botanic garden management. She helped this project with numerous meetings with other team members and partners and also via her own work planting and maintaining the garden together with local and international volunteers (Jessie is head of our volunteer program).

Other activities done by the team and assorted partners partners: During September 2020 to March 2021, 410 field visits were made to farmers in the villages surrounding Al-Makhrour Valley in order to follow the seasonal distribution of plants and cultivate them in environmental ways in a manner that does not harm the biodiversity in Wadi Al-Makhrour while educating farmers about sustainable farming methods (partial funding was done from Darwin Initiative project entitled: "Biodiversity Conservation and Community Development in Al-Makhrour Valley in Bethlehem, Palestine"). Field trips in the West Bank to collect plants for the Herbarium and living samples for ex situ conservation in the Botanical Garden partially supported from the Global Botanic Garden Fund project entitled "Orchid conservation in the eco-garden of the Palestine Institute for Biodiversity and Sustainability, Bethlehem University". And covered partially one of the areas that designated for the preservation and introduction of orchids.

2. Summarize the overall results/impact of your project

Through this project much was accomplished in meeting our objectives (short term and long term). This included final updated list of plant species in our botanical garden, 374 species (belonging to 80 Families, 61 of them rare species and 6 invasive species). The botanical garden provided ex-situ conservation facility through translocating plants from some endangered habitats (like near farmer's footpaths or those slated for uprooting by buildings and road work). Bee colonies and "insect motels" were added for the botanical garden for enhanced pollination. A new herbarium was established in the museum including maintaining, updating, collecting new plant samples, and sorting samples according to an organizational structure. 46 field trips were carried out to 28 localities in the West Bank and 37 rare species (orchids, iris, Crocus) were collected and introduced to the Botanical Garden for their protection. Dedicated areas were assigned in the garden for the preservation and introduction of these plants. Durable signs for the plant species in the garden are being prepared to be installed during the coming period as part of the awareness raising, education and capacity building for students and general public on

botanical knowledge. Four scientific papers were produced from this work by our team including students and partners. PIBS delivered and educational program for farmers on sustainable farming methods and the use of natural materials to combat pests and plant diseases without harming the biodiversity in the world heritage site of Wadi Al Makhrour.
The gap filling surveys of plants of Al-Makhrour and adding study of its extension Cremisan Valley was significant for plans to develop this area (we are now discussing with the Environment Quality Authority the potential designation of the area and its villages as a biosphere and are developing action plans for implementing those in ways that benefit people and nature in this rich valley system.

3. Briefly describe actual progress towards each planned long-term and short-term impact (as stated in the approved proposal)
List each long-term impact from your proposal

a. Planned Long-term Impacts - 3+ years (as stated in the approved proposal)

Impact Description	**Impact Summary**
Rare plants and the ecosystem protected long term at the urban conservation garden	SOP for garden done and approved and followed https://drive.google.com/file/d/1oz1QrHA9Br-bIhbGN6BzRN7sPOGPJegI/view?usp=sharing) Long term conservation of plants is done via many methods and follow the Global Strategy of Plant Conservation (GSPC) which a) starts with better research (which we did some and published but more importantly set-up a SYSTEM of research including our herbarium, field manuals, field data collection, databases for specimens which will allow growth of this area), b) developing better strategies for in situ plant conservation (while we started doing this via this project, we are intensifying it after the period of the project ended by working it within the National Biodiversity Strategy and Action Plan due to be completed in August 2022 and thus bridging science-policy vis a vis conservation of plants), c) the education leading to conservation component which is critical according to GSPC and relates to both ex situ and in situ conservation (in our case the outputs listed including translocated species and brochure and educational material are a beginning that is being expanded now in partnership with the EQA and other stakeholders). We may add that the beginning of the ex situ program will lead to expansion to more taxa in our area and more locations for ex situ conservation.
An educated public engaged at all stages especially youth	Workshops, public lectures and online posting about the plants of the PIBS Botanical Garden were done (see Activity 2.1) and these act as models which will be expanded in PIBS's institutional educational programs for decades to come

An ecosystem that will enable conservation not just of plants but also of animals that are co-dependents (especially insects by building insect "hotels" and ensuring protection of soil, fungi, microorganisms etc.). This also acts as a long-term model for other urban oases/gardens	Insect motels built and new bee colonies acquired for enhanced pollinator diversity and strength for the garden which in turn sustains plant diversity long-term. The garden maintenance system now also ensures survival of both the 374 species of plans, the 50+ species of birds recorded, the 21 species of butterflies and all other animals in the garden.

b. Planned Short-term Impacts - 1 to 3 years (as stated in the approved proposal)

Impact Description	**Impact Summary**
updated distribution, population size, and status of key plant species in PIBS garden	The list of species and their distribution in the PIBS botanical garden was finalized and includes 374 species belong to 80 Families, 61 of them rare species (Activity 1.1)
Conservation and protection of key plant species at the site.	During 46 field trips to 28 localities in the West Bank, 37 rare species were collected per scientific procedures and introduced to the PIBS Botanical Garden. All together, a total of 61 rare and endangered plant species are now protected in the PIBS Botanical Garden. (Activity 1.4)
Capacity building and education	Workshops, public lectures and online posting about the plants of the PIBS Botanical Garden were done (see Activities 2.1 and 3.3)
Updating knowledge of Al-Makhrour flora and its conservation	Gap filling surveys of plants of Al-Makhrour area was carried out (see Activitie 1.2 and 1.3)

4. Describe the success or challenges of the project toward achieving its short-term and long-term impacts

- COVID19 pandemic. This resulted in some delays, but work was done by the team successfully because of our flexibility. We conducted online meetings versus in-person meetings. We had to replace originally committed international specialist with local ones due to the pandemic travel restrictions. We also had to replace another specialist because of her change of availability.
- We observed the presence of wild boars in protected areas feeding on wild and even rare plants. They also posed danger to the work team.
- The identified political risk in Palestine contributed to the presence of some danger posed by the settlers to the work team during their field trips. Settlers also continued to harass farmers in Al-Makrour area (a world heritage site) who we support and educate.
- Route 60 that is adjacent to the Al-Makhrour valley is also now being widened by the occupation authorities, encroaching on natural habitat of the Al-Makhrour valley. We managed the other risks identified above by flexibility and developing systems for response (e.g. temporarily avoiding areas with settlers or wild boars). We also faced a new challenge: Settlers bringing in sheep in areas like Al-Makhrour valley.

5. Were there any unexpected impacts (positive or negative)?

Positive examples: Posts done about our work on social media like Facebook produced unexpected communication with people interested in this kind of work. We even got interest from the Haidar Abdelshafi Center in Gaza which approached us for collaborations, and we held three

meetings attended by many young people from Gaza and the West Bank. The three virtual sessions were on need for collaborations to protect the environment (Prof. Qumsiyeh), biodiversity in Palestine (Elias Handal), and eco-friendly agriculture (M. Najajrah). Our Facebook posts about the plants of the botanical garden led to great interactions by the local community about the uses and benefits of plants, in addition to the fact that the topic attracted new volunteers and researchers to help in the botanical garden. Professor Qumsiyeh was also invited to speak at several international for a on conservation issue for example he is speaking October 22 at the global gathering hosted by Oxford Botanical Gardens on present past and future of botanical gardens and his talk focuses on plant in situ and ex situ conservation in Palestine.

Negative examples:

The only thing we can cite is that our visits to some protected areas like Al-Qarn, Al-Quff and Al-Makhrour revealed more unexpected habitat damage. For example, expansion of Israeli Route 60 resulted in destruction of over 20 dunums of orchid habitats.

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PART II: Project Components and Products/Deliverables

6. Components (as stated in the approved proposal)

List each component and product/deliverable from your proposal

6. Describe the results for each deliverable:

Component		Deliverable		
#	**Description**	**Sub#**	**Description**	**Results for Deliverable**
1	*Plant survey*	1.1	**Research the land of 12 dunums for the long-term protection of its flora, including endangered Mediterranean plants**	Before this project the garden was partially organized into two areas one with visitor access paths and a "protected area". A previous tentative survey over a short period in Spring 2019 showed abundance of vascular wild plant species and emphasized the need for better studies and protection. The main challenge identified was that this garden was not well planned for ex situ and in situ conservation and hence this work. In this project, the following were developed to push towards protecting and preserving plants in the garden, and the restructuring process for the botanical garden after six focus group meetings: 1) The list of species in the Botanical Garden was finalized and includes 374 species belong to 80 Families 61 of them rare species and 6 invasive species. The list includes scientific name (many corrected for synonyms), English common names, Arabic names, local and global status (IUCN Red List), and habitat preferences (most are Mediterranean). That list can be found at : https://bit.ly/3FtcCIL 2) During 46 field trips to 28 localities in the West Bank, 37 rare species was collected and introduced to

				the Botanical Garden were the total number of rare and endangered plants that are protected in the Botanical Garden is 61 species. https://drive.google.com/file/d/1uxanpw9mROfmwJOqmsPeJRWVFgeIXoi0/view?usp=sharing 3) Three areas in the garden were identified by a committee (Prof. Ruediger, Prof. Qumsiyeh, M. Najajrah, and Banan Al Sheikh) for the preservation and introduction of certain types of plants and their protection such as orchids, Iris and Crocus. https://drive.google.com/drive/folders/1f1WZHPTPdc5RQzedAFDm1mD7ONliBtRJ?usp=sharing 4) 46 Field trips were made to 28 areas (include of protected areas) in the West Bank to collect plants for the Herbarium and also (in case criteria are fulfilled) samples for living ex situ conservation in our garden. https://drive.google.com/drive/folders/1GVIBSF7LaM26Ug2eh2ZF-_P1FbRG2v3T?usp=sharing 5) Herbarium: A new room was designated for a herbarium in the museum and integrated into a new Biodiversity Center at PIBS partially supported with the EU project entitled: “Unity and Diversity in Nature and Society”. In the beginning, the number of samples in the herbarium was 230 samples, but quickly expanded to reached more than 900. More importantly, all samples were now identified and catalogued properly. Photos of this work are here: https://drive.google.com/drive/folders/1WsNCRYkjetGM1RvlYvdPmS9AAuRUkf9D?usp=sharing 6) During the reporting period, there was maintenance and follow-up work in the garden including planning labeling system, watering, and maintaining stone walls, corridors and rest areas, in addition to cutting dry plants in the garden to avoid any fires 7) Insect motels were built and new bee colonies for enhanced pollination were added to the garden and a management plan for the garden was prepared in order to sustain the plant diversity in it, which is reflected in the general biodiversity.
		1.2	**Compile report on biodiversity of Al Makhrour area**	Flora and fauna biodiversity survey of Al Makhrour area was carried out in the year 2018/2019 as a cofounding by the Darwin Initiative (see https://almakhrour.palestinenature.org/wp-content/uploads/2020/05/Annex-6-Plant-Biodiversity.pdf and

				https://almakhrour.palestinenature.org/wp-content/uploads/2020/05/Annex-7-fauna-1.pdf). We did additional work from 5 October 2020 to 28 February 2021 which was critical for completion of the picture https://drive.google.com/file/d/1HMfX85yovZC9tDxBHmeOKfNzgl8BmMEg/view?usp=sharing We also did work on plants of Cremisan Valley which is an extension of Al-Makhrour valley which showed additional rare species of plants. The floral list of Cremisan is posted at https://bit.ly/3DlXVW9
		1.3	**Gap filling Surveys of plants of AL Makhrour**	The gap filling survey was done and can be seen in this link https://drive.google.com/file/d/1HMfX85yovZC9tDxBHmeOKfNzgl8BmMEg/view?usp=sharing and while not included in the proposal we expanded the area of study of Al-Makhrour to include a new tributary called Wadi Ahmed (Wadi Cremisan) in which we studied the flora well. The data on this valley added some new species including of orchids. https://bit.ly/3DlXVW9
		1.4	**In - Situ conservation plan for site restricted endemics for the botanic garden at PIBS**	In-Situ conservation plan for the botanical garden has been formulated in the form of Standard Operating Procedure (SOP). see the link https://drive.google.com/file/d/1oz1QrHA9Br-bIhbGN6BzRN7sPOGPJegI/view?usp=sharing
2	*Capacity building*	2.1	**Capacity building of students on botanical knowledge**	Some university students came here for capacity building but this was impacted by COVID19 restrictions. However one notable success that in 2020 foreign student (Julius Pahl) did his internship here and worked with our students and staff on plants and even produced a manuscript and his thesis on orchids. Further, his and our student and staff (Summer Shaheen, M. Najajrah) work helped us get a separate small grant from Botanic Garden Conservation International, specifically for orchid work. An online workshop was held about the principles of plant classification and the herbarium work for interested students and researchers in Palestine in addition to the interested staff from the ministry of

				agriculture. The work shop was recorded and published online to be reachable by the interested people https://www.facebook.com/PIBS.PMNH/posts/2931768483768338 Three online workshops was held with Haidar Abdelshafi center that included many young people from Gaza and the West Bank. The three sessions were on need for collaborations to protect the environment (Prof. Qumsiyeh), Biodiversity in Palestine (Elias Handal), and eco-friendly agriculture (M. Najajrah) and all emphasized important of protection of flora and fauna. https://www.facebook.com/PIBS.PMNH/posts/2989220638023122 https://www.facebook.com/PIBS.PMNH/posts/2999137150364804 https://www.facebook.com/PIBS.PMNH/posts/3026939067584612 Six public lectures were held about the plants (3 for children and their parents and 3 for women) as the following: An event to raise children's awareness about research and identify different forms of plants leaves https://www.facebook.com/PIBS.PMNH/posts/2919142355030951 Educational event for children about agricultural and environmental cultural heritage https://www.facebook.com/PIBS.PMNH/posts/2929100154035171 An educational event to teach children about thyme https://www.facebook.com/PIBS.PMNH/posts/2939308703014316 Three workshops for women on value & uses of medicinal plants for skin care https://www.facebook.com/PIBS.PMNH/posts/2970472766564576

				https://www.facebook.com/PIBS.PMNH/posts/2981301182148401 https://www.facebook.com/PIBS.PMNH/posts/2973418942936625
		2.2	**Work with farmers and local stakeholders of AL-Makhrour on conservation measures.**	During September 2020 to March 2021, 410 field visits were made to farmers in the villages surrounding Al-Makhrour Valley in order to follow the seasonal distribution of plants and cultivate them in environmental friendly ways that do not harm the biodiversity in Wadi Al-Makhrour while educating farmers about sustainable farming methods (partial funding from Darwin Initiative project entitled: "Biodiversity Conservation and Community Development in Al-Makhrour Valley in Bethlehem, Palestine"). This included using integrated eco-friendly pest management (to protect key pollinators of endangered plants). Biodiversity and cultural heritage of Wadi Al-Makhrour were linked to sustainability. https://drive.google.com/file/d/19qjT_kmmQ5ahokk124Kku67mA7LgKJdF/view?usp=sharing
3	*Awareness, education and empowerment*	3.1	**Develop brochures, publications, interpretive panels and (soft) disseminated information.**	A brochure on the orchid has been prepared and printed with another brochure in Arabic and English about the Botanical Garden https://drive.google.com/drive/u/0/folders/1MsvNFg_Vj10joh58xv2j4zz2YJdLfZ2E Based on the final study for the plants of the Botanical Garden, signs for the plant species in the garden prepared and most of them will be installed the spring of 2022, along with the different species to help in the process of awareness and education on the plants species in the botanical garden
		3.2	**Publish research on plant importance and conservation**	The following four papers were concluded, submitted, accepted and/or published: Pahl, Julius and Mazin Qumsiyeh. 2021. Orchids of the Occupied Palestinian Territories (West Bank, Palestine). Mediterranean Botany. 42, e72120. https://doi.org/10.5209/mbot.72120 https://revistas.ucm.es/index.php/MBOT/article/view/72120/4564456555878 Al-Sheikh, B. and M. B. Qumsiyeh. 2021 in press. Imperiled ecosystems in Palestine: Rare plants as Indicators. In Dominic DiPaolo & John Villella

				Imperiled: The Encyclopedia of Conservation" Elsevier Al-Sheikh, B. and M. B. Qumsiyeh (In press). New Records to the Flora of the West Bank, Occupied Palestinian Territories. Jordan Journal of Natural History Qumsiyeh, M.B. and I.M. Albardeya. (In press) Palestinian environment: Threats and opportunities. Africana Studia Two other research papers are in the works partly facilitated by this CEPF grant: one comparing flora including rare plants of Wadi Qana and Wadi Zarqa Al-Ulwi and one regarding additional new flora records from the West Bank
		3.3	**Use our local website and social media to include information about the project and plant conservation**	http://www.palestinenature.org/ website was revamped beginning of 2021, to include awareness and education on flora and environmental conservations.In particular a new section was added on the botanical garden https://www.palestinenature.org/botanical-garden/ and is available now in five languages Posts done about our work on social media like Facebook which produced unusual and unexpected communication with people interested in this kind of work. Here are 27 posts about the plant species in the https://www.facebook.com/PIBS.PMNH/posts/3038959929715859 https://www.facebook.com/PIBS.PMNH/posts/3035282013416984 https://www.facebook.com/PIBS.PMNH/posts/3028104197468099 https://www.facebook.com/PIBS.PMNH/posts/3024554964489689 https://www.facebook.com/PIBS.PMNH/posts/3018723661739486 https://www.facebook.com/PIBS.PMNH/posts/3013792245565961 https://www.facebook.com/PIBS.PMNH/posts/3009198952691957 https://www.facebook.com/PIBS.PMNH/posts/3001961770082342

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4	*Promote responsible human behavior in plant and ecosystem*	4.1	**Use cultural heritage to promote plant conservation**	Our program for visitors to the museum (though diminished in number due to COVID19) was adjusted to include linkage of our ethnography museum with talks about plant conservation (see Activity 3.3)

	conservation areas			
		4.2	**Improve local ethnobotanical knowledge following our project on tangible and intangible cultural heritage related to nature (this is research and awareness aspects, filling gaps in knowledge and disseminating some information via social and other media)**	During September 2020 to March 2021, 410 field visits were made to 81 farmers in the villages surrounding Wadi Al-Makhrour on principles of Permaculture (land preparation, intercropping, irrigation and water harvesting system, usage of organic and liquid fertilizer) and Biodiversity (its relationship to agriculture). (see activities 2.2);cofounding Darwin Initiative funded project related to improving their agricultural production in ecofriendly ways but also adding here conservation of and value of plants. https://drive.google.com/drive/u/0/folders/1MXSEuXmzWRP8esH5dFi8OjU_wAyCEaTx **See also Activity 2.1**
		4.3	**Raise awareness on the importance of local culture on plant conservation**	We decided as part of this project to focus awareness on women and children as marginalized communities. We hosted a skin care specialist to increase the role of women's participation in going eco-friendly and using local plants for Natural Skin care herbal cosmetics https://www.facebook.com/PIBS.PMNH/posts/2970472766564576 https://www.facebook.com/PIBS.PMNH/posts/2981301182148401 https://www.facebook.com/PIBS.PMNH/posts/2973418942936625 https://www.facebook.com/PIBS.PMNH/posts/3045517932393392 Here are some of the children activities done related to wild plants and value of plant conservation https://www.facebook.com/PIBS.PMNH/posts/2939308703014316 https://www.facebook.com/permalink.php?story_fbid=2919142355030951&id=1454309858180882 https://www.facebook.com/1454309858180882/posts/2864966830448504/?d=n https://www.facebook.com/PIBS.PMNH/posts/3050428865235632

				At least 27 educational posts to raise awareness about some of the plants in the botanical garden and their uses, linking them to cultural heritage was published. (see links in activity 2.1) Further, the work is publicized widely and our team's work on in situ and ex situ conservation will be highlighted in a global conference titled "Celebrating Botanic Gardens: Past, Present and Future" hosted by Oxford Botanic Gardens https://www.obga.ox.ac.uk/event/celebrating-botanic-gardenspast-present-and-future

7. Please describe and submit any tools, products, or methodologies that resulted from this project or contributed to the results.

See published papers (listed under activity 3.2) and Standard Operating Procedure (SOP) link https://drive.google.com/file/d/1oz1QrHA9Br-bIhbGN6BzRN7sPOGPJegI/view?usp=sharing

PART III: Lessons, Sustainability, Safeguards and Financing

Lessons Learned

8. Describe any lessons learned during the design and implementation of the project, as well as any related to organizational development and capacity building.

- We learned how to combine efforts of different experts to produce the required result relating to endangered and rare plants.
- We learned that it is possible to combine different projects in complementary ways that produce more than the sum of each separately (e.g. this project with the one funded by Darwin Initiative in the same geographic area)
- After six focus group meetings with the experts and evaluation of the botanical garden, we found that five species of the Poaceae Family in the garden are widespread in the site and that affect negatively on the growth of other species in the botanical garden. Therefore, key points have been set to control the spread of these species in order to reduce its negative impact on other plants.
- After finishing the survey of the flora of the Botanical garden it show the needed work to manage the invasive species in the garden and elsewhere in nature as this poses a grave risk to habitats including for rare plants

Sustainability / Replication

9. Summarize the success or challenges in ensuring the project will be sustained or replicated, including any unplanned activities that are likely to result in increased sustainability or replicability.

- Based on the results of the project and the lessons learned from it, a project was obtained in the botanical garden to adapt and modify existing eco-garden at PIBS test growth parameters for transplantation and propagation of native medicinal and herbal plants. This will be done combining local people knowledge and modern research to provide sustainable high-value crops of medicinal, herbal, and food plants that build body and spirit and that can be replicated elsewhere. Ripple effect of this will benefit researchers and students to build their capacity, innovate and enhance applied research that positively impact national economies while ensuring quality of life and environmental protection.

- One of the PIBS staff who are responsible on the botanical garden participate in the Med Plant Conservation Week 'Plant Conservation Strategies: from Science to Practice' to be more implemented about the plant conservation and new techniques for in-situ and ex-situ conservation strategies and plans that will help in the conservation for the plants in the botanical garden.

- Two of the PIBS staff who are responsible on the botanical garden registered in the "CLP 2022 Regional Training Middle East - project design and fundraising" to increase experience and knowledge in writing projects related to the protection of rare and endangered plants in the Botanical Garden, in addition to working on germination and reintroduction plans for those species.

- Two of the PIBS staff who are responsible on the botanical garden registered in the "IABG Botanical Garden Development and Management training course" for capacity building, coordinate, promote and support the development and management of the botanical garden and strengthen the networking among the Asian developing countries

Safeguards

10. If not listed as a separate Project Component and described above, summarize the implementation of any required action related to social or environmental safeguards that your project may have triggered.

NA

Additional Funding

11. Provide details of any additional funding that supported this project and any funding secured for the project, organization, or the region, as a result of CEPF investment

a. Total additional funding (US$) 77,200

b. Type of funding

Please provide a breakdown of additional funding (counterpart funding and in-kind) by source, categorizing each contribution into one of the following categories:

Donor	Type of Funding*	Amount	Notes
EU project entitled: "Unity and Diversity in Nature and Society"	In kind and some supplementary funding	>USD $60,000 for infrastructure development as the biodiversity center (including molecular laboratories and herbarium)	A new room was designated for a herbarium in the museum and integrated into a new Biodiversity Center at PIBS Field work Maintenance and follow-up work in the Botanical Garden
Darwin Initiative project entitled: "Biodiversity Conservation and Community Development in Al-Makhrour Valley in Bethlehem, Palestine"	Direct funding to certain supplementary studies like the flora of Al-Makhrour/Cremisan and management plan and working with farmer education and empowerment	Estimated related to this project about USD $15,000	Documenting flora diversity of Al Makhrour area and raise the biodiversity value of the site to further enhance its protection and a new tributary called Wadi Ahmed (Wadi Cremisan) in which we studied the flora well. Field visits to the farmers in the villages surrounding Al-Makhrour Valley in order to follow the seasonal distribution of plants and cultivate them in environmental ways in a manner that does not harm the biodiversity in Wadi Al-Makhrour while educating farmers about sustainable farming methods. This included using integrated eco-friendly pest management (to protect key pollinators of endangered plants). Biodiversity and cultural heritage of Wadi Al-Makhrour were linked to sustainability.
Global Botanic Garden Fund project entitled "Orchid	Counterpart funding	USD2200	Field trips in the West Bank to collect plants for the Herbarium and also

conservation in the eco-garden of the Palestine Institute for Biodiversity and Sustainability, Bethlehem University".			samples for living ex situ conservation in the Botanical Garden Covered partially one of the areas that designated for the preservation and introduction of orchids.

Additional Comments/Recommendations

12. Use this space to provide any further comments or recommendations in relation to your project or CEPF.

PART IV: Impact at Portfolio and Global Level

Ensure that the information provided pertains to the entire project, from start date to project end date.

Contribution to Portfolio Indicators

13. If CEPF assigned one or more Portfolio Indicators to your project during the full proposal preparation phase, please list these below and report on the project's contribution(s) to them.

Indicator	Narrative
4.2 Number of unprotected sites with improved management for plants	Management practices improved at 1) Wadi Al Makhrour heritage site and KBA through promoting and implementing eco-friendly agricultural practices by local farmers to conserve plants of the site, 2) the 12 dunum botanical garden at Mar Andrea with the new management plan and SOPM developed (see activities)
4.6 Number of KBAs for which information on plants is improved	We did 46 Field trips were made to 28 areas and knowledge expanded also via the Herbarium collection. Knowledge on plants of Wadi Al Makhrour improved through detailed botanical surveys.
4.7 Number of young professionals with substantial experience in plant conservation gained	Mohammad Najajreh, Johanna Gideon, and six volunteers were trained

Contribution to Global Indicators

Please report on all Global Indicators (sections 16 to 23 below) that pertain to your project.

14. Key Biodiversity Area Management

Number of hectares of Key Biodiversity Areas (KBA) with improved management

Name of KBA	# of Hectares with strengthened management *	Is the KBA Not protected, Partially protected or Fully protected? Please select one: NP/PP/FP
Al makhrour National Heritage as part of Al Quds Region KBA (PSE01)	*4*	*PP*

15. Protected Areas

15a. Number of hectares of protected areas created and/or expanded

Report on the number of hectares of protected areas that have been created or expanded as a result of CEPF investment.

Name of PA*	Country(s)	# of Hectares	Year of legal declaration or expansion	Longitude**	Latitude**
N/A					

15b. Protected area management

While the geographic area studied (Al-Makhrour) is not technically a protected area per IUCN criteria, it is a UNESCO World Heritage Site and we would love to explore wth CEPF further action we plan to do to elevate its protection including possibility of designating the area as a biosphere reserve. Never-the-less we attached the METT report

WDPA ID	PA Official Name	Date of METT*	METT Total Score
N/A			

16. Production landscape

Please report on the number of hectares of production landscapes with strengthened management of biodiversity, as a result of CEPF investment. A production landscape is defined as a landscape where agriculture, forestry or natural product exploitation occurs. Production landscapes may include KBAs, and therefore hectares counted under the indicator entitled "KBA Management" may also be counted here. Examples of interventions include: best practices and guidelines implemented, incentive schemes introduced, sites/products certified and sustainable harvesting regulations introduced.

Number of hectares of production landscapes with strengthened management of biodiversity.

Name of Production Landscape*	# of Hectares**	Latitude***	Longitude***	Description of Intervention
Al-Makhrour Valley	*4 hectares*	Beit Jala at coordinates	Reaching up to the natural	Follow the seasonal distribution of plants and cultivate them in

		31°42'52.38"N, 35°10'26.16"E	valley between Battir and Husan villages at point 31°43'18.33"N, 35° 7'54.77"E,	environmental ways in a manner that does not harm the biodiversity in Wadi Al-Makhrour while educating farmers about sustainable farming methods. This included using integrated eco-friendly pest management (to protect key pollinators of endangered plants). Biodiversity and cultural heritage of Wadi Al-Makhrour were linked to sustainability.

** If the production landscape does not have a name, provide a brief descriptive name for the landscape.*
***Do not count the same hectares more than once. For example, if 500 hectares were strengthened due to certification in the first year, and 200 of these same 500 hectares were strengthened due to new harvesting regulations in the second year, the total number of hectares strengthened to date would be 500.*
**** Indicate the latitude and longitude of the center of the site, to the extent possible, or send a map or shapefile to CEPF. Give geographic coordinates in decimal degrees; latitudes in the Southern Hemisphere and longitudes in the Western Hemisphere should be denoted with a minus sign (example: Latitude 38.123456 Longitude: -77.123456).*

17. Beneficiaries

CEPF wants to record two types of benefits that are likely to be received by individuals: structured training and increased income. Please report on the number of men and women that have benefited from structured training (such as financial management, beekeeping, horticulture) and/or increased income (such as from tourism, agriculture, medicinal plant harvest/production, fisheries, handicraft production) as a result of CEPF investment. Please provide results since the start of your project to project completion.

17a. Number of men and women receiving structured training.

# of men receiving structured training *	# of women receiving structured training *
70 farmer trained on principles of Permaculture and Biodiversity	11 farmers trained on principles of Permaculture and Biodiversity
1 staff member trained on Fundraising and Botanical Garden Management	1 staff member trained on fundraising and Botanical Garden Management
3 volunteers on Botanic Garden maintenance	3 volunteers on Botanic Garden maintenance

17b. Number of men and women receiving cash benefits.

# of men receiving cash benefits*	# of women receiving cash benefits*

18. Benefits to Communities

CEPF wants to record the benefits received by communities, which can differ to those received by individuals because the benefits are available to a group. CEPF also wants to record, to the extent possible, the number of people within each community who are benefiting. Please report on the characteristics of the communities, the type of benefits that have been received during the project, and the number of men/boys and women/girls from these communities that have benefited, as a result of CEPF investment. If exact numbers are not known, please provide an estimate.

18a. Please provide information for all communities that have benefited from project start to project completion.

Name of Community	Community Characteristics (mark with x)							Type of Benefit (mark with x)									# of Beneficiaries	
	Subsistence economy	Small landowners	Indigenous/ ethnic peoples	Pastoralists / nomadic peoples	Recent migrants	Urban communities	Other*	Increased access to clean water	Increased food security	Increased access to energy	Increased access to public services (e.g. health care, education)	Increased resilience to climate change	Improved land tenure	Improved recognition of traditional knowledge	Improved representation and decision-making in governance forums/structures	Improved access to ecosystem services	# of men and boys benefitting	# of women and girls benefitting
Biet Jala		X							X					X			24	1
Battir		X												X			18	1
Husan		X												X			21	3
Al-Walaja		X												X			7	6

*If you marked "Other" to describe the community characteristic, please explain:

18b. Geolocation of each community

Indicate the latitude and longitude of the center of the community, to the extent possible, or upload a map or shapefile. Give geographic coordinates in decimal degrees; latitudes in the Southern Hemisphere and longitudes in the Western Hemisphere should be denoted with a minus sign (example: Latitude 38.123456 Longitude: -77.123456).

Name of Community	Latitude	Longitude
Biet Jala	31.716410	35.174485
Battir	31.727148	35.139163
Husan	31.709801	35.132487
Al-Walaja	31.730761	35.159677

19. Policies, Laws and Regulations

19a. Name, scope and topic of the policy, law or regulation that has been amended or enacted as a result of your project

No.		Scope (mark with x)			Topic(s) addressed (mark with x)														
	Name of Law, Policy or Regulation	Local	National	Regional/International	Agriculture	Climate	Ecosystem Management	Education	Energy	Fisheries	Forestry	Mining and Quarrying	Planning/Zoning	Pollution	Protected Areas	Species Protection	Tourism	Transportation	Wildlife Trade
1																			
2																			
…																			

19b. For each law, policy or regulation listed above, please provide the requested information in accordance with its assigned number.

No.	Country(s)	Date enacted/ amended MM/DD/YYYY	Expected impact	Action that you performed to achieve this change
1				
2				
3				

20. Sustainable Financing Mechanism

20a. Details about the mechanism
Fill in this table for as many mechanisms you worked on during your project implementation as needed.

NO.	Name of financing mechanism	Purpose of the mechanism*	Date of Establishment**	Description***	Countries
1	NA				
2					

20b. Performance of the mechanism

NO.	Project intervention*	$ Amount disbursed to conservation projects**	Period under Review *(MM/YYYY -MM/YYYY)***
1	NA		
2			

21. Biodiversity-friendly Practices

Number of companies that adopt biodiversity-friendly practices

No.	Name of company	Description of biodiversity-friendly practice adopted during the project
1	NA	
2		

22. Networks & Partnerships
Number of networks and/or partnerships created and/or strengthened

No.	Name of Network	Name of Partnership	Year established	Did your project establish this Network/ Partnership? Y/N	Country(s) covered	Purpose
1						
2						

23. Gender
NA

<u>Part V. Information Sharing and CEPF Policy</u>

CEPF is committed to transparent operations and to helping civil society groups share experiences, lessons learned, and results. Final project completion reports are made available on our Web site, www.cepf.net, and publicized in our newsletter and other communications.

Please include your full contact details below:

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