

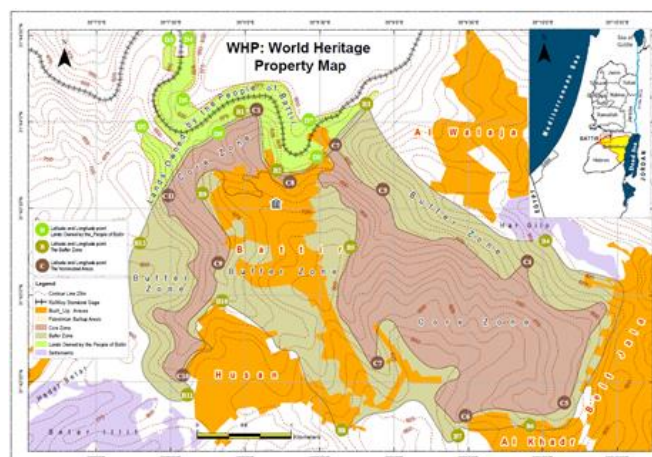
## Darwin Initiative: Final Report

### Darwin Project Information

Project reference	25-030
Project title	Biodiversity Conservation and Community Development in Al-Makhrou Valley in Bethlehem, Palestine.
Country(ies)	Palestine
Lead organisation	Bethlehem University - Palestine Institute of Biodiversity and Sustainability /Palestine Museum of Natural History (PIBS/PMNH).
Partner institution(s)	Institute for Community Partnership (ICP-BU); Byspokes Sustainable Community Development (a UK-based NGO)
Darwin grant value	£ 287,343
Start/end dates of project	1 September 2018 - 31 March 2021 (end date extended to 30 April 2021)
Project leader's name	Professor Mazin Qumsiyeh
Project website/blog/social media	<a href="https://palestinature.org/conservation">https://palestinature.org/conservation</a> <a href="https://almakhrou.palestinature.org">https://almakhrou.palestinature.org</a> <a href="https://www.facebook.com/PIBS.PMNH">https://www.facebook.com/PIBS.PMNH</a>
Report author(s) and date	Prof. Mazin Qumsiyeh/Abdelsalam Aljanazreh/ Mohammad Abu Amrieh and the Steering Committee 1 July 2021

## 1 Project Summary

The project area, Al-Makhrou Valley, is the last remaining biodiversity-rich area in Bethlehem district: 2.6 km<sup>2</sup> of natural areas interspersed with agriculture and rich flora and fauna, and an equivalent buffer zone of more than 5 km<sup>2</sup>. It is one of 13 Important Bird Areas in Palestine. It is rich in cultural and natural heritage and was designated a UNESCO World Heritage Site (WHS). Mostly included in area C of the West Bank (Israeli military and civilian control on Palestinian areas), and having marginalized villages, the local communities of humans and all living things have been threatened by both Israeli settlers' and locals' activities. The challenges to biodiversity include harmful agricultural practices, lack of awareness of local people, construction of settlements, urbanization, habitat loss, and land fragmentation. Poverty in the area is impacted by the occupation, abandonment of agriculture, and poor planning of productive and sustainable practices (such as ecotourism). Focus group meetings with the locals and with experts were carried out to pinpoint the challenges and design appropriate interventions. For example, expert facilitation of meetings in each community came up with plans for the community (bottom up) and the developed management plan of the valley, based on scientific studies, was adopted by the government (<https://bit.ly/3awVv8s>). The project addressed the above challenges, as well as others, through utilizing traditional knowledge updated with more modern permaculture techniques to enhance eco-agricultural practices. Four marginalized communities (Al-Walajah, Battir, Husan, and Beit Jala) benefited in the targeted area via: a) working with 80 farmers in the four communities, which enhanced their (healthier) agricultural production while protecting the environment, b) developing women cooperatives in



the communities and empowering them in areas ranging from production to marketing, and c) enhancing ecotourism in the area, which in-effect enhanced both biodiversity and the local economy. The project gave positive outcome to natural and human communities in a critical area. This included research reports and publications, developing databases relating to fauna, flora, habitats and threats, generating management plans (key biodiversity aspected amended to the WHS MP), training (capacity building) for locals and others, developed ecotourism trail and information (including brochure for ecotourists and signs in the valley path), designed more than 10 educational modules, implemented restoration scheme in selected three Donums of the area, and benefitted more than 400 households (farmers and women entrepreneurs). 52 activities under 3 outputs were performed successfully. Only 3 of those activities were partially complete (due to COVID19 delays and shutdowns) and all under output 2: follow-up on marketing success/SMEs and ecotourism enhancement follow-up. We will pursue these and ensure they are delivered. By contrast several activities achieved more than promised deliverables (e.g. research publications, educational modules, increased agricultural inputs etc). Further unexpected activities were carried out and led to more impact than in the original proposal in areas like influencing government agencies like agriculture, tourism, and environmental quality authority in areas of biodiversity conservation and human development and has now become a model to study nearby and other areas.

## 2 Project Partnerships

The lead organization PMNH/PIBS worked with two main partners: Institute for Community Partnership-BU and Byspokes (a UK-based NGO) plus local and national authorities and key beneficiaries (indirect partners). The project team adopted a **participatory** approach throughout the design and implementation stages of this project via an inclusive steering committee which met on a periodic basis. Besides partners, beneficiaries including the local communities, were all involved through local committees in Beit Jala, Battir, Al-walajah and Husan. The project management developed partnerships with key relevant Palestinian ministries (The Environmental Quality Authority, Ministry of Tourism and Antiquities (MOTA) , and Ministry of Agriculture) whose input at different stages from conception to implementation was critical. For example, our work with the MOTA followed guidelines they developed for this WHS but our regular meetings refined the plan regarding biodiversity and poverty reduction and that was subsequently incorporated in the MOTA's own plans of site management. Similarly, the team worked closely with local councils (Municipalities and Village councils), different community-based organizations (CBOs) in the four communities, as well as other NGOs such as Agriculture Development Society-PARC and Union of Agricultural Works Committees-UAWC. All actions were developed via stakeholder meetings both in the design stage (before proposal submission) and during implementation stage. For example, four agriculture committees were formed which helped select farmers. More details on partnerships and their accomplishments are in the activities section below. Example of active collaborative work actions: PCC <https://bit.ly/372jxZu> and MOU with Byspokes and others <https://bit.ly/3rDtGp1> Samples of meeting minutes <https://bit.ly/2UEhU1R> and also the agriculture report <https://bit.ly/2Wc6i6o> . Emerging **challenges** included balancing competing interests of some of the beneficiaries and needing to spend much time explaining to them the value of biodiversity and showing them on the ground that eco-agriculture and eco-tourism can be economically beneficial to them. Another challenge related to the unexpected COVID-19 pandemic and the volatile political situation of our area. All these factors shaped partnership dynamics. For example as our UK partner Byspokes were unable to travel, they delegated their part of activities relating to permaculture training to a local consultant they recommended. In another level ICP-BU were unable to implement the festival of this year due to the pandemic, the lead manager designed a different set of activities and the partner agreed after the negotiations. There had been great collaborations and **longterm partnerships** built upon the results of this project, specially between government agencies and the lead partner. These relationships are enduring after the project concluded. For example, PMNH-BU's relationship with the EQA to protect the Palestinian environment has evolved significantly so that we are now trusted to build the National Biodiversity Strategy and Action Plans for the State of Palestine (2021-2022 which will set the plans for the next two decades). The participatory approach used in designing the conservation management plan for the targeted area led to sustainable outputs with buy-in and commitment to continue by all concerned.

### 3 Project Achievements

#### 3.1 Outputs

*[We relate outputs to activity in logframe but we put change achieved in narrative form]*

**Output 1. Inventory and assessment for biodiversity at both habitat and species level are conducted in order to consolidate the scientific data required to propose various forms of conservation management and protection within the project area.**

We produced a desktop study (**Activity 1.1**) <https://bit.ly/3rCSlu6> that was critical for the project work. The study was used in conducting four well-participated town hall meetings in four communities for project planning, achieving buy-in and goals set collectively (**Activity 1.2**) that increased participation and buy-in to achieve goals set collectively (see <https://bit.ly/2SvPHJq>). We conducted biodiversity inventory for Al-Makhrour valley including comprehensive surveys for ecosystem, habitats and species (**Activity 1.3**) which resulted in establishing status of the biodiversity of Al-Makhrour valley (fauna, flora, and habitats) via intensive field work in the first year. The consultants of PCC studied, analyzed all data and produced a report that served as an integral component of the biodiversity assessment process for the targeted area and constituted a step in creating a conservation management plan outlining further required actions to conserve and sustain biodiversity (**Activity 1.4**). The four key specialized groups were: for plants (Mr. Adel Abu Ayyash, Mrs. Roubina Ghattas, Eng. Mohammad Abu Amrieh and Miss Marian Rishmawi), fauna (Elias Handal, Anton Khalilieh, Prof. Qumsiyeh), Geology/paleontology (Dr. Talib Al-Harithi). The PMNH project team data compiling ensured scientific methodologies and approaches for surveying species on site, while investigating their habitats, their supporting abiotic elements such as soil, and topography of the site etc. Links to all reports here <http://bit.ly/2plr7wc> (plants beginning) & <https://bit.ly/3gJz9pu> (plants final) & <https://bit.ly/3kXkHh1> (fauna initial). At the end of the three years, we did a selective survey of fauna and the comparison data can be found here: <https://bit.ly/3xWgnma> (see also this more detailed bird comparison <https://bit.ly/3wKnHAr>). We prepared a baseline evaluation report for ecosystem/biodiversity status at Al-Makhrour Valley via a systematic process for surveying biodiversity and habitats in addition to inventorying. Key habitats with maps and tables of data were formulated. Follow up and feedback/refinement was done by working with consultants and experts. The main threats and human interferences were also recorded. For the complete report document plant biodiversity data, please see habitat restoration plan here <https://bit.ly/3zBOZKG> and the material listed under Activity 1.3 in Annex 2. Via a collaborative approach, we established ecology, biodiversity, monitoring databases linked to project webpage (the indicators linked to specified area blocks along the valley and specified species population)(**Activities 1.5 & 1.6**). The biodiversity committee consisted of key local experts and some outside consulting scientists. It consisted of Mohammad Mahasna (Environmental Quality Authority,) Prof. Mazin Qumsiyeh (BU), Elias Handal (BU), Dr. Anton Khalilieh (Bird Expert), Dr Rami Arafah (PPU), Roubina Ghattas (PCC). The committee held more than 4 meetings during the period of this report. The desktop study and new data (links provided above) were used as raw data for this work. The biodiversity committee met numerous times ( <https://bit.ly/3y6htvD> ). The monitoring scheme used was successful and can be viewed at <https://bit.ly/3xWgnma> .

The team then prepared the biodiversity management plan for the valley & identified key sensitive habitats and set conservation frameworks and restoration schemes (**Activities 1.7 & 1.8** ). The biodiversity conservation plan finalized/adopted <https://bit.ly/3kSySnN> including targets (<https://bit.ly/3iKgKtE> ). The conservation plans were submitted by the biodiversity committee and communicated to stakeholders successfully (**Activities 1.9 to 1.10**). The edited text was approved by the Environment Quality Authority, Ministries of Agriculture and Tourism and Antiquities and amended to the site management plan of this UNESCO world heritage site (<https://whc.unesco.org/en/list/1492/> ). This plan did constituted a model on that can be applied nationally and in fact we expanded the work to produce a management plan for the nearby valley of Cremisan (see <https://bit.ly/2V4B1C9> ). Record of meetings at <https://bit.ly/2U90UQI> and plan adoption is here <https://bit.ly/3B7WCK9> . The part of the plan that involved restoring up to max. 3 Donums of key habitats (**Activity 1.11**) was accomplished based on ecological and biological parameters obtained earlier like fauna and flora inventories and habitat analysis. The project team cultivated natural native trees in degraded or abandoned lands in areas of high conservation value. Please see link to the final restoration report <https://bit.ly/3zBOZKG> . We then prepared an endline evaluation report (**Activity 1.12**) for updating ecology/biodiversity status at Al-Makhrour valley conducted in spring/summer 2020. Research was implemented



using and expanding the indicators that have been used in the baseline studies already done at the beginning of this project, covering fauna and flora. There was continuing damage in the area, although our work via habitat restoration and education activities helped mitigate the effect (see other activities below). Rare plant species are still present and birds seem to have stayed relatively stable during the three year project. Additionally our latest monitoring survey (continuing even after project ended) showed persistence of key large mammals: porcupines, hyenas, jungle cat, and jackals. Links can be found here: bird survey at <https://bit.ly/3wKnHAH> & fauna monitoring indicators at <https://bit.ly/3xWgnma>

The original goal to publish 3-5 scientific publications (**Activity 1.13**) was exceeded as we published 9 publications (Annex 5) and several more are now in draft form as a result of this work. A follow up report at the end of the project to measure impact of the project on reduction of damaging activities was done (**Activity 1.14**). The project team conducted a research covering the environmental awareness, farming activities, and the economic benefits to the communities. Before implementing the project, 15% of the farmers interviewed used Chemical fertilizers, 35% used both chemical fertilizers and unfermented animal manure, 45% used unfermented animal manure, and 5% did not use anything. Farmers used both natural fermented animal manure and compost. Complete report can be found at <https://bit.ly/3wLwQZD> and logframe activities 1.4, 1.6, 1.7, 1.8, and 1.12.

## **Output 2: Economic benefits to the local communities; including women and youth, in proximity to Al-Makhrou Valley are secured through sustainable agriculture and eco-tourism enhancement.**

Farming committees for each community were formed (4 in total) instead of one committee for the four communities (**Activity 2.1**) following recommendation by the project steering committee, the project team, in coordination with the local councils. This was in order to improve the efficiency of the committee works and keep them more focused on the workload of their communities. See the following link for the committees' details <https://bit.ly/3qqvi4W> We prepared and distributed announcement & selection process of farmers (**Activities 2.2 – 2.4** <https://bit.ly/3zAjcdO> ). Then we purchased and distributed agricultural inputs (**Activity 2.5 and 2.7** ) per committee guidance to selected farmers. This process repeated itself at each summer and winter season and included local seeds, seedlings, bulbs, and trees. All underwent tests before distribution. Inputs were delivered to 81 farmers of the project (4 dropped out early and replaced). Irrigation networks, water tanks, tools etc all delivered and functioning from year 1. More than 600 sacks of compost were handed to farmers and the project team had been overseeing the deployment on land, while promoting better agricultural practices, this for the covered seasons. Hundreds of thousands of seeds were delivered by PMNH team. Representatives of the ministry of agriculture conducted an inspection process to all received seedlings, before their distribution to farmers. Agricultural inputs were decided by research and in partnership with farmers (through the local committees) and procured by Bethlehem university's finance office, and distributed in the right season. A seed sample was taken of each variety to be tested in the lab and quality adjusted accordingly. For the third year there have been two distributions despite the pandemic situation, details of quantities and numbers can be found in Agricultural report The agricultural report: <https://bit.ly/2Wc6i6o> demonstrate significant increase in eco-friendly agricultural outputs among our farmers.

The team helped locals in land preparations, weed removal and organic compost additions and conducted four follow up field visits per farmer per season thus at least 1000 field visits to farmers were performed during the three years of the project (**Activity 2.6. & Activity 2.8**). In addition to the required visits per proposal plans, we developed a farmers' manual/guidelines and distributed to farmers to have as a reference in each farm (see <https://bit.ly/3xqzepf>). We also helped conduct two cross village exchange and demonstration visits during cultivation seasons in 20 Feb & 25 Aug. 2020 (**Activity 2.9** ). These were excellent opportunities to learn from successful practices ( <https://bit.ly/3dZIObW> and photos at <https://bit.ly/2UkGWmc>). The result of this intensive work is that farmers learned to prepare, remove plant debris, use reduced ploughing, save seeds for next season, select good crops, biologically control weeds and pests, and increase production while recognizing value of biodiversity.. Different areas had different challenges which are summarized Annex 1 appended to the agricultural report (found

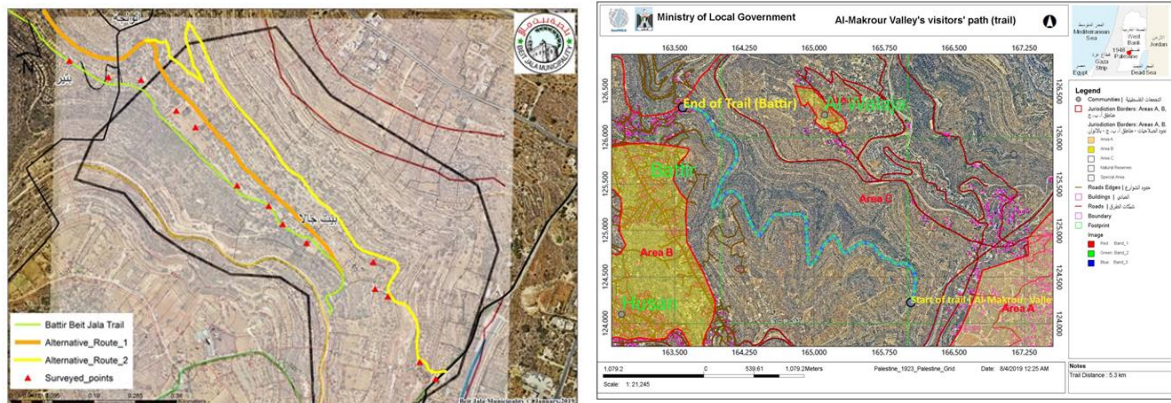
at <https://bit.ly/2Wc6i6o> ). Most farmers spent much time preparing for the two planting seasons winter and summer plants which have different crops. Some of the warmer areas farmers (like Battir farmers) brought a winter propagule and planted it to produce early products such as cauliflower, where they either have the seedlings or bought it, so in this case as well they'll have two different production stages. Part of the visits was confirming the practical training on water and soil management and attending the marketing festival if they want to visit it, where some farmers have no fresh products to sell. See agricultural report in link above. In fact our evaluation reports for summer /winter vegetables production (**Activity 2.10**) showed increased quality and quantity of vegetable production during the course of this project (e.g. increase in area was 55.6% on average or 13.3 dunums and production increase 22% on average ; see agricultural report <https://bit.ly/2Wc6i6o> and details of the last production season observed by the project can be found at <https://bit.ly/3xSpcga>). Seedlings and seeds were also distributed for an additional summer season in April 2021 (last month of project).

A very successful first festival was held before the corona pandemic (**Activity 2.11, 2.12, 2.14**). The report and lessons learned from it can be found here <https://bit.ly/3dlGL0p> . The second festival implementation was stopped because of the covid19 pandemic and will had been changed to the following activities as attached in the change request. <https://bit.ly/2U9aqmx> The details are relating to the following changes, that we changed the festival activity of the last year related to We opened selling points with over four local supermarkets Perform marketing at Point of Sale (POS) Marketing points installation utilizing sales materials such as pamphlets were successful, and though because the implementation happened in the last quarter of the project period assessing success in sales will have to await data collection Samples. Photos can be found at <https://bit.ly/2U7so92> and <https://bit.ly/3qu1PXS>. A two-day workshop for cooperatives' partnerships and business enhancement: This was conducted on 11 + 12 June 2019 at PMNH premises (**Activity 2.13**). The workshop was announced in cooperation with the Beit Jala and Battir municipalities and the village councils of Al-Walajah and Husan. Farmers, women clubs and small producers in the four communities were invited to participate in the workshop. There were 22 participants each day, of which 17 females and 5 males in the first and second day. Dr. Issa Ismirat was contracted to facilitate the workshop, pre and post assessment were conducted to evaluate the knowledge of the participants about the topics of the workshop, and the results were as follows:

#	Topic	Pre-Assessment Results				Post-Assessment Results			
		Weak	Avg	Good	V. Good	Weak	Average	Good	V. Good
1	The extent to which cooperatives need partnership	6	56	17	22	0	11	61	28
2	How to start a partnership	39	22	33	6	6	11	56	28
3	Key Elements of Partnership	44	33	17	6	0	6	44	50
4	Key functions and roles of partnership	39	39	17	6	11	11	44	33
5	Qualities of good Partnership	28	28	44	0	0	6	61	33
6	Building partnership	44	22	33	0	0	11	56	33
7	the Importance of value chain	22	39	28	11	0	0	61	39
8	Value Chain Analysis	33	56	6	6	0	0	56	44

We formulated a committee for eco-tourism program from key stakeholders and held planning sessions with the four local communities (**Activity 2.15**). The committees (<http://bit.ly/2BNNr4a>) helped the expert create an ecotourism business plan <https://bit.ly/3kRQSyr> and targeted business plans for the four communities: Al-Walajah <https://bit.ly/3y4YAt5>, Battir <https://bit.ly/3y4OFDv>, Beit Jala <https://bit.ly/3BFdvME>, Husan <https://bit.ly/36WY9d4> However, follow-up (**Activity 2.18**) and implementation of the ideas by the local communities is suspended due to the CPOVID19 impact on tourism. See also this discussion

<https://bit.ly/3hsObPv> However, we did prepare other things including studying the valley's ecotour potential paths and identified the best path (**Activity 2.16**). For this, the project team worked with Beit Jala Municipality and with the environmental quality authority to decide and mark a refined trail for ecotourism going through the valley from Beit Jala to Battir which was officially adopted (see Figures below.)



Trails considered and the trail adopted by the ministries (EQA, Tourism, Local Government)

We then conducted cleaning works and install signs etc (**Activity 2.17**). The original signs can be viewed at <https://bit.ly/2TaXcG5> Signs were installed but vandalized partially please see <https://bit.ly/3jqVif2> , however they were reinstalled. A cleaning voluntary campaign was carried out with participation of more than 15 from team, farmers, & volunteers covering part of the chosen trail (e.g. <https://www.facebook.com/PIBS.PMNH/posts/2236083246670202> ). Women empowerment via SMEs (**Activities 2.19 & 2.20**) was done successfully (though via women cooperatives not individual women, see <https://bit.ly/2UaQmAz> ). Women are developing their products and marketing them. The initiated SMEs while functioning did not do as well during the period of lockdowns( but now they have all the tools, equipment, marketing brochures. Women also received preparation for POSs in order to establish marketing channels, pictures of delivery of marketing materials can be found at <https://bit.ly/2U7so92> , and <https://bit.ly/3qu1PXS> .

### **Output 3. Raise awareness of and build capacities of local communities and stakeholders to better manage their natural resources, support conservation measures and benefit from sustainable agricultural and eco-tourism interventions while impacting the national legislation and involving both females and youth.**

This project raised significant awareness via conduct workshops for key stakeholders (**Activities 3.1**) to present the Valley's biodiversity management plan (<https://bit.ly/3awVv8s>) and elevate awareness. A key large conference on 11 February 2020 at the auditorium of Bethlehem University included 50 participants from related institutions including the Ministry of Tourism, Environmental Quality Authority, and Ministry of Agriculture, scientists, & community members. It was followed on 12 February by a scientific workshop on biodiversity (attended by 18). The agenda of both can be seen here <https://www.facebook.com/PIBS.PMNH/posts/2528852917393232> We also conducted four one-day workshop to enhance marketing and biodiversity knowledge among women (**Activity 3.2**). Two workshops were held in 2020 and two in 2021. Evaluation and other data show that people learned much from these (see link <https://bit.ly/3AcaWRC> ). We also conducted a two-days' workshop for alternative tourism operators (**Activity 3.3**) on October 29 and November 20 of 2020 (see <https://bit.ly/3qy1R0M> ). We conducted four two-days training sessions for best sustainable farming practices, permaculture, organic farming (**Activity 3.4**) led by Alice Gray (Byspokes) in Husan, Battir, Al Wallajah and Beit Jala. on 20, 21, 22, & 23 of March 2019. The workshops included discussion of agro-ecological farming and its political and environmental significance as well as feed-back from farmers on the challenges they face on a day to day basis. Topics discussed include: water management, pest control, marketing, sourcing, Infrastructure for farms, settler threats & damage. The consultant gave a presentation using her own farm in Wales as a model, and how they are using agro-ecological principles to manage soil, water and pests and to make themselves more resilient to climate change; as well as their marketing strategy and outreach to their local community as a Community Supported Agriculture project. Several practical demonstrations were then carried out including: Aerated



compost tea – how to make it and when to use it; Use of water-level to find contour lines and measure the drop in land; Use of A-frame to find contour lines; Swales – digging, planting and overflows; Trench beds – on contour or gently sloping to make use of water from springs; Sheet mulching with cardboard and straw to suppress weeds around trees; Infiltration basins and boomerang bunds around trees for water harvesting; Sheet mulching for vegetable production ('sandwich strategy'); and Mulching with straw. During the third year the permaculture training was implemented by a local consultant recommended by our UK partner Byspokes due to travel restrictions. The full report is at <https://bit.ly/2U7NrlG>

We conducted four two-days training sessions for best practices in conserving biodiversity (**Activity 3.5**) including four groups of farmers from the targeted villages (2 targeted areas per day). The workshops raised awareness of biodiversity conservation practices and how to include them in agricultural practices. An educational tour showing farmers the environmental/ agricultural modules in the botanical garden and the community garden at PMNH was included. These modules include: water harvesting techniques, composting: compost bays way (another way than the way that was applied in the practical training), Hugel culture, aquaponics, reusing plastic bottles to build a greenhouse/ nursery, the green wall technique using plastic bottles, in addition to show them rehabilitated animals at the museum to encourage them to protect the animals and nature.

# of participants in the training workshop (Planned and attended)			
Date	Areas	Attended	Planned
17.08.2019	Biet Jala	18 in addition to two children	29
	Al-Walaja	6	13
24.08.2019	Husan	18	19
	Battir	21 in addition to 4 children	19

Please see pictures of the activities at <http://bit.ly/2q1SH1k> & <http://bit.ly/335Ea3H>

We conducted a training session for women entrepreneurs (**Activity 3.6**) about Selling Point on 9 December 2019 ( <https://bit.ly/364Gyuu>) and a two two-days food processing training session 16 December 2019 at ICP main building while the practical session conducted on Tuesday 17 December 2019 at Turathouna Al-Asil Association / Beit Jala (**Activity 3.7**). The workshop was announced in cooperation with the Beit Jala and Battir municipalities and the village councils of Walajeh and Husan, farmers, women clubs and women producers in the four communities were invited to participate in the workshop. Ms. Manar Manasra was contracted to conduct the two days workshop. The main objective of the training workshop was to present and explain the process of comprehension thus improving food processing to meet local demand. There were 15 female participants on the first day, while 19 females attended the second day workshop. The food processing report can be found at <https://bit.ly/3xeagck> . Pre and post assessments were conducted to evaluate the knowledge of the participants about the topics of the workshop, and the results were as follows:

#	Topic	Pre-Assessment Results				Post-Assessment Results			
	Indicators	Low	Average	Good	V. good	Low	Average	Good	V. good
1	How well do you know food processing?	0	5	5	2	0	0	7	5
2	We must verify the effectiveness of the yeast before using it	0	2	6	4	0	0	2	10
3	Jams can be made without sugar	2	4	4	2	0	4	2	6
4	Saline solution is a method of food preservation	0	1	8	3	0	0	3	9
5	The pickles can be made with any vegetable oil	1	9	2	0	0	0	7	5
6	Following the correct methods of food processing lead to high quality	0	3	4	5	0	0	1	11
7	Chemical preservatives should be added during the food process	6	5	0	1	5	2	2	3

8	Do you think you are skilled in making sweets?	0	5	6	1	0	0	3	7
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Five schools were visited to present the project and raise awareness (**Activity 3.8**): Husan 16/10/2019, Battir 22/10/2019 and girls 23/10/2019, Al-Walajah (mixed) 28/20/2019, and Beit Jala (Girls) 29/10/2019. The total of students attended were 133 (>50 female). A committee formed of members of the project team in addition to the public relations coordinator of PMNH had approached the ministry of education in Palestine and coordinated to approach the schools and deliver the message required to school children. The permission was granted and the project team had started to deliver the meetings on the scope of lecture to student in their classes and later on there will be visits for the children to the botanical garden in order to inform targeted school children about the importance of biodiversity conservation and deliver the message of awareness creation and awareness raising about the impacts required by the project. More at <https://bit.ly/3qXAs5q> (in Arabic). We finalized more than the requisite 10 educational modulus (**Activity 3.9**) that were based on project studies and were shared with school students and other beneficiaries throughout the life of the project (examples at <https://bit.ly/2UzPuW7> ). The five schools mentioned all developed environmental clubs and we followed up with them (**Activity 3.10**) via phone calls or online in the past year and a half because of pandemic closures. We will do more follow-up in the schools in September 2021 when we anticipate school full reopenings.

The project educational outreach was also done via social and mainstream media (**Activity 3.11**) and via TV sessions (**Activity 2.11**). Over 200 social media and more than 40 mainstream and public media appearances by team and stakeholders promoted the excellent work achieved in this project. Samples of mainstream outreach and coverage that relate to this project are at:

[https://issuu.com/bethlehemuniversity/docs/bethlehem\\_university\\_magazine\\_spri](https://issuu.com/bethlehemuniversity/docs/bethlehem_university_magazine_spri) (cover story of BUM)

<https://www.palestinature.org/research/TWIP-244-Qumsiyeh-Handal.pdf>

<https://www.palestinature.org/research/002.pdf>

[https://www.youtube.com/watch?v=oxxUqk4\\_PA](https://www.youtube.com/watch?v=oxxUqk4_PA)

[https://www.facebook.com/watch/live/?v=2156062017823555&ref=watch\\_permalink](https://www.facebook.com/watch/live/?v=2156062017823555&ref=watch_permalink)

<https://kuminow.com/week-12-natural-resources-online-gathering/>

<https://youtu.be/n69ALSznHUI>

<https://www.facebook.com/watch/?v=268728494186817>

[https://www.facebook.com/watch/live/?v=849193865897151&ref=watch\\_permalink](https://www.facebook.com/watch/live/?v=849193865897151&ref=watch_permalink)

<http://www.pn-news.net/news.php?extend.12482.4>

<https://mawwal.ps/ar/mawwal/117153>

<https://youtu.be/AWy6baoaqTE>

<https://www.middleeasteye.net/discover/biodiversity-and-hope-flourish-palestines-first-natural-history-museum>

<https://www.maannnews.net/news/2041159.html>

<https://youtu.be/iUQ2Q3teWtk>

<https://youtu.be/0jHWbhR7wWk>

<https://youtu.be/OrCsh1t4aKs>

<https://www.facebook.com/nativitytv/videos/268728494186817/>

Social media posts are on our facebook page (also automatically go to Instagram) during the project are at <https://www.facebook.com/page/1454309858180882/search/?q=Darwin>

and <https://www.facebook.com/page/1454309858180882/search/?q=makhroul>

It is also worth noting that Prof. Qumsiyeh was recognized with two awards due to his leadership in the institute and Darwin work was highlighted as an example of our work with communities (e.g. Takreem award here <https://youtu.be/wm6dvACLS50>). In a tour of the UK, Prof. Qumsiyeh spoke extensively on the project and received media coverage <https://www.facebook.com/PIBS.PMNH/posts/2376622402616285>

Four TV sessions have been produced and broadcasted on local TVs, during prime times the videos can be viewed at :

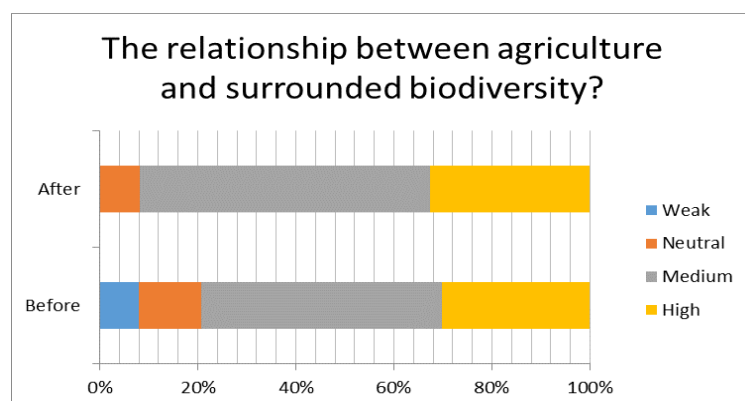
First episode about biodiversity & sustainability [https://youtu.be/g\\_qUglWGhtM](https://youtu.be/g_qUglWGhtM)

Second Episode about biodiversity conservation [https://youtu.be/TIJ\\_lafq-YQ](https://youtu.be/TIJ_lafq-YQ)



Third episode about community farmers & Nature [https://youtu.be/2CFXt\\_h2JQM](https://youtu.be/2CFXt_h2JQM)  
 Fourth episode about community enhancement <https://youtu.be/3FPcR9kcpPw>  
 Yet we did more than the requisite four videos. We exceeded the goal with five other videos..  
 i24 channel made a video about the training <https://youtu.be/OrCsh1t4aKs>. TV sessions were  
 conducted on environment <https://youtu.be/-yA9il9GVYk> and on the Festival highlighting  
 impact (<http://bit.ly/2MY7gwh>). We were proud to produce a video also on the area which  
 received co-funding from National Geographic Society and Darwin Initiative (see  
<https://youtu.be/MjdvsK6pkec> ) and a series of EU funded videos on climate change and  
 conservation for children covering diverse areas one of them is biodiversity highlighting the  
 valley <https://youtu.be/5dzjtSvuA8U>. We also prepared a webpage for the project  
<https://almakhrou.palestinennature.org> which will be updated periodically (**Activity 3.13**). We  
 prepared and printed a brochure produced in Arabic and English for the site (**Activity 3.14**).  
 The English version can be seen at <https://bit.ly/3qtT5Rw>. 2000 copies of each brochure  
 version were printed. Distribution commenced and will accelerate as tourism picks up.

We saw a significant impact of our work on households not only in their own economic well  
 being (covered under agricultural outputs and the work for ecotourism which will make its  
 biggest impact after the pandemic crisis). Our studies indeed (**Activity 3.15, see also impact  
 below**) show an impact on household (see <https://bit.ly/3wLwQZD> sample of data below on  
 biodiversity awareness)



### 3.2 Outcome

The main proposed outcome of the project was that by 2021, the Palestinian communities' accessed benefits through valuation/conservation of their ecosystems, reviving traditional farming, and enhancing ecotourism activities at Al-Makhrou valley where at least 344 households will directly benefit. The Palestinian communities who actually benefitted were many more. Briefly below we identify outcome related to the indicators as in the logframe:

**0.1** Baseline studies done for biodiversity covering the area of 2.6 km<sup>2</sup> core area (5 km<sup>2</sup> with buffer zones) then re-evaluated at end of the project Desktop study. <https://bit.ly/3rCSlu6> , plant study <https://bit.ly/3xn3pO5> , fauna study <https://bit.ly/3jxzTkC> , endline plant study <https://bit.ly/3gJz9pu> , bird end line study <https://bit.ly/3wKnHAr>. Selected monitoring indicators were developed and studied and will be used for further surveys (see <https://bit.ly/3xWgnma> ).

**0.2** Number of households acting in environmentally sensitive ways around their homes increase to 30 households (average 6 members of each household) after one year of work (year 2 measure) and then to 244 households (50% females) by year three. There is a considerable positive change relating to the behavior of households and community members towards more environmentally friendly practices on the level of farming activities, and on the level of biodiversity conservation importance, impact evaluation describing the change can be seen on <https://bit.ly/3wLwQZD>

**0.3** We did achieve the requisite training of 81 farmers. We can add to these 81 households, more than 100 households during the festival, > 40 hh is women groups/cooperatives training, and >100 through the various workshops held (like the biodiversity training workshop). While it was difficult to measure total impact, sampling of households were measured showing impact

(<https://bit.ly/3wLwQZD>). Farming practices were done through the whole supply chain of the agricultural activities and had good outcome in agricultural production (full report <https://bit.ly/2Wc6i6o> )

**0.4 Sustainable agricultural productivity increases at targeted sites where vegetables production increases by 30% of yearly production (estimated between 18-22 tons for 40 dunums per year):** Production has improved significantly

- Average percentage of the savings in spending of the household on buying vegetables in the season due to availability of the production was about 61%.
- During implementing the project, all the farmers achieved self-sufficiency from their vegetables. Whereas 69% of the production was consumed by the households, 18% of the production was distributed as gifts to farmers' relatives and friends, and 13% of the production was sold.
- Average percentage of the savings in the production inputs costs due to the production inputs provided by the project to the farmers (fertilizers, irrigation networks, seeds and seedlings, agricultural tools, etc.) was 71%.
- Average of the increase in the crop productivity due to the use of permaculture practices was 22%.
- All farmers agreed that the quality of the products was better and free from any chemical contaminants.
- Because of the use of permaculture practices the average production costs decreased by about 36%. (see <https://bit.ly/3qHRBDo> and Impact evaluation report <https://bit.ly/3wLwQZD> .

**0.5** By year 3, at least 10 modules of transferrable knowledge are developed in a manner that would enhance conservation and sustainability: The project produced many educational modules on all levels, Please see many of the modules produced here <https://bit.ly/2UzPuW7>, In addition, the habitat conversation scheme that we used in the project targeted area was sent to be used in other habitats in Palestine such as Wadi AlQuf. the scheme can be seen here <https://bit.ly/2UZfhaz>

**0.6** Reduction of damaging human activities (hunting, logging, trash dumping) in the protected areas by 10% annually from baseline: awareness campaigns and workshops, in addition to direct coaching from the project team have limited damaging behaviours considerable, for example; Before implementing the project, 15% of the farmers interviewed used Chemical fertilizers, 35% used both chemical fertilizers and unfermented animals manure, 45 used unfermented animals manure, and 5% did not use anything. While during implementing of the project and to now all the farmers used both natural fermented animals manure and compost. more details can be found on <https://bit.ly/3wLwQZD> . There are other factors that affected this outcome relating to no control over the targeted area, as it is controlled by the occupation.

### **3.3 Monitoring of assumptions**

**Assumption 1:** Political turmoil does not interfere in project implementation; (the project has flexibility in shifting locations when one community has disturbances).

**Comment 1:** Numerous attempts by settlers supported by the Israeli were recorded that encroach on the buffer Zone of this world heritage site. Our team working on this project has challenged these activities (see <https://www.palestinenature.org/conservation/Letter-from-UNESCO.pdf> for our intervention via UNESCO). Palestinian farmers and inhabitants of the valley complained about demolishing of farmhouses, burning structures and confiscation of lands. Limitations on movement and work are evident. For example activities relating to installation of ecotourism path signs were delayed because the Israelis prevented this and damaged signs (reinstalled). Continuous efforts are exerted by the project team working with farmers and the communities transcended these challenges.

**Assumption 2:** Project team members are living in Bethlehem Governorate to ensure their availability during needed periods during the project implementation despite any political turmoil.

**Comment 2:** Movement restriction by the occupation and the pandemic were overcome with flexibility even for project team members living outside Bethlehem governorate. We also get special permission for the agricultural specialist to travel. Evidence by project completion.

**Assumption 3:** Assume supplies and equipment remain possible to be purchased.

**Comment 3:** Supplier & equipment remained available until the unexpected pandemic of Covid-19. However, we adapted in many ways including shifting some operations online, and we were able to buy and distribute seedlings and transplants to farmers despite the closure.

**Assumption 4:** Continued cooperation of local and national authorities.

**Comment 4:** This was actually better than we expected despite the fact that the Israeli occupation does not give local authorities much leeway. That our team was selected to work on several national projects is evidence of this cooperation.

**Assumption 5:** Potential travel restrictions could delay arrival via alternative roads (we need flexibility in timing of project activities).

**Comment 5:** We did have to adjust some things such as changing one marketing festival to supermarket selling points. Change requests on file show some of the flexibility we exercised to achieve the results..

**Assumption 6:** Women participation in town hall meetings, interviews with stakeholders, or committee formulated for restoration, depends on availability of women in related positions.

**Comment 6:** >50 of beneficiaries were women and female students. At every step they were empowered to participate actively.

**Assumption 7:** Buy-in by locals farmers etc

**Comment 7:** Dealt with via dynamic and flexible procedures (thinking outside the box). For example motivation increased by using the language of human rights (our rights to the land, work in permaculture as a form of resistance) and use of cultural heritage issues. The latter was a fortuitous discovery as our museum was engaged in a project (ended in August) to preserve and protect threatened agricultural and natural heritage. We established local committees for the farmers and the beneficiaries with the involvement of the local authorities to mitigate any risk that might emerge in this regard.

**Assumption 8:** Cooperation of local authorities of targeted localities

**Comment 8:** Village councils and municipalities are cooperative and are playing positive and enthusiastic roles in the project's activities.

**Assumption 9:** Locals including schools willingness to participate in training sessions and workshops to learn about local and national environment, biodiversity conservation, and business interventions for better livelihoods.

**Comment 9:** the project team succeeded in positive coordination with the Ministry of Education and Higher Education to gain access to schools so we do not see this as an issue.

**Assumption 10:** The trainees buy-in the training educational materials, orientations and recommendations (the project will ensure motivation and engagement of all participants)

**Comment 10:** There had been positive motivation and engagement but still there is some fluctuations please refer to assumption/comment # 7, which elaborates more the current status of this assumption.

**Assumption 11:** Some of the targeted farmers might change by the project team during the project implementation; only in case they show inefficiency in delivery aimed at outputs.

**Comment 11:** there had been some minor changes of targeted farmers during the project. Four farmers withdrew because on lack of interest, or physical ability or or other personal reasons. Four new farmers (two females and two males) were selected (three of them in Dec, 2019 and the fourth in Apr, 2020) to replace those dropped out.

### **3.4 Impact: achievement of positive impact on biodiversity and poverty alleviation**

This project proposed to help local communities sustainably maintain semi-natural ecosystems of the target area. This depended on research and knowledge of area biodiversity, conservation efforts (via education, and restoration), traditional agriculture practices, and socioeconomic development of empowered local people. Socioeconomic status had been improved through supplying the farmers with agricultural inputs and building their capacities which resulted in enhancing their resilience. also through supporting women groups creating sustainable incoming generations SME's by the project. The project has created a positive impact for >80 farmers in four communities, benefiting more than 500 individuals. Biodiversity conservation was improved by impacting positively the behaviours of the communities, through more friendly and traditional agricultural practices and through creating accountability among women, youth, & children towards saving the biodiversity. Awareness creation programs, which included workshops, training, & activities which were directed to the general community



beyond the targeted communities, in addition to the mainstream and social media spots. For evidence on this, see the impact evaluation report <https://bit.ly/3wLwQZD> and the relevant activities and logframe. The project expanded beyond its outcomes to reach for example in its influence on Ministries of Agriculture and Tourism, and the Environmental Quality Authority. The developed biodiversity conservation plan in this second year of the project was adopted by the Palestinian government, and annexed to a larger management plan for the world heritage site. Further, the effect on overall conservation in Palestine was already felt in that our exemplary work in this valley was appreciated by the Environment Quality Authority and this led to our team being selected: a) for leadership in reporting national progress to CBD (6th National report), b) to lead in preparing national biodiversity strategy and action plans, c) to prepare a plan for all protected areas in the Palestinian Occupied Territories. (see contract <https://app.luminpdf.com/viewer/60deb474ad13270012e1b1ea> )

## **4 Contribution to Darwin Initiative Programme Objectives**

### **4.1 Contribution to Global Goals for Sustainable Development (SDGs)**

- 1) Reducing poverty reflecting on SDGs 1 & 2 by strengthening local communities' food security through sustainable agriculture; mainly increasing agricultural productivity and incomes of small-scale food producers, in particular women, secure agro-resources, and implement resilient agricultural practices
- 2) Sustaining community development reflecting on SDGs 8,11, by strengthening efforts to protect and safeguard Palestine's cultural and natural heritage, reducing the adverse environmental impact of human population, promoting sustainable tourism/agriculture that creates jobs (for women and youth) and promotes local culture and products,
- 3) Advocating for responsible consumption and production; reflecting on SDG 12 by introducing organic production concepts, reducing household's/community's waste through composting and adopting the traditional farming concepts,
- 4) securing gender equality reflecting on SDG 10 by integrating women in the project activities, where gender inclusion and women's full and effective participation and equal opportunities will be taken into consideration at all levels throughout project implementation, and giving women equal rights to economic resources; mainly through the business enterprises initiative that will take place during the project,
- 5) improving quality of life reflecting on SDG 13&15 by introducing nature protection concepts, ecotourism, promoting the implementation of sustainable management, restoring degraded areas, enhancing adaptation to climate change, and integrating Al-Makhrour ecosystem and biodiversity values into national and local planning.

### **4.2 Project support to the Conventions or Treaties (e.g. CBD, Nagoya Protocol, ITPGRFA, CITES, Ramsar, CMS, UNFCCC)**

Using research, education/empowerment, and conservation measures helping people and nature in this key area of Palestine, the project was used as a model for state's compliance in other areas and was cited in a number of places in the 6th Convention on Biological Diversity (CBD) National Report by the state of Palestine to COP (available publicly in early August 2021 at <https://chm.cbd.int/> ). That report and activities listed and evidence provided elsewhere in this document shows that this project contributed especially to Aichi Targets 1, 3, 4, 7, 18 and 19. This Darwin project and another large project funded by the EU in the lead institution were so successful that they helped the Environment Quality Authority select our institution to lead the efforts for a) generating the 6th National Report for CBD, b) generating the National Biodiversity Strategy and Action Plan for Palestine. Our institution is also a key partner in two other areas (thanks to the gained experience of Darwin Initiative) in 2021-2022: proposing new conventions that the state of Palestine can join and revising national environmental laws in line with these treaties and with national strategy. The Nagoya protocol is addressed via issues of empowerment and poverty reduction (see next section 4.3). UNFCCC is supported because farmers, women cooperatives, university and school students all became aware of climate change issues, importance of "recycling, reducing, and refusing" throughout all the educational programs noted above. Finally, the treaty of ITPGRFA was supported by the cultivation of native species and varieties in the targeted agro-ecosystem. It goes in line especially with Article 5 (mainly 5.1) and Article 6 (mainly 6.2), Article 9 (mainly 9.2), Article 13 (mainly 13.2). Of the crops targeted by the project and covered by ITPGRFA are: broad beans, fava beans, cowpeas, eggplants, radish, cabbage, and local varieties of snake cucumber and other vegetables.

### 4.3 Project support to poverty alleviation

Biodiversity conservation and poverty reduction were linked in many ways and at different levels in all our activities. More than 45 women in the four selected women cooperatives benefit directly from the initiation of small business enterprises including training them in eco-friendly production, branding and marketing and the initiation of selling points (see under activities 2.19 and 2.20 for evidence). 81 farmers benefited directly from agriculture intervention and the first market festival 5 Oct 2019. The second festival was canceled due to pandemic and the project redirected towards setting selling points at local supermarkets towards the end of the project. The relevant training courses/workshops built capacities in the field of plant production, best farming practices, agro-marketing, food processing, eco-tourism activities, valuation and best practices for conservation of natural heritage and biodiversity of the valley, and environmental awareness. Tourism operators and tour guides were trained and an ecotour brochure was developed and began distribution. However, the number of tours in the valley stayed stable or even declined during the COVID19 but we expect the benefit from these activities (see Activities 2.15 to 2.17 for details).

### 4.4 Gender equality

Gender was a key factor in all key activities of this project:

- 1) School students: >50% where females
- 2) University students and others who engaged with us in research were >50% female and this was reflected in the first 9 publications (Annex 5)
- 3) Women Cooperatives in the four communities. Obviously these were 100% female
- 4) Farmers: While the contracted farmers were 18% female, the farms where family run (50% female)
- 5) Tourists local and international: The ecotourists are 50% female who benefitted from our work (though little during the pandemic but will increase soon)
- 6) 50% of the students we led in cleanup or tourism in the valley were female

### 4.5 Programme indicators

- **Did the project lead to greater representation of local poor people in management structures of biodiversity?**

The four communities selected were marginalized and impoverished. Through the initial focus group meetings and later follow-up we did notice significant interest and increased participation of those people: farmers, municipal and village council heads, students, local women cooperatives. The Palestinian team members became key to work in areas of biodiversity in Palestine thanks to the three year experience of working on this project.

- **Were any management plans for biodiversity developed and were these formally accepted?**

Yes. The plans were developed cooperatively with locals as noted in activities with evidence and these were then adopted by the Environmental Quality Authority, the Ministry of Tourism and Antiquities, and local authorities. See plan adoption letter <https://bit.ly/3B7WCK9>

- **Were they participatory in nature or were they 'top-down'? How well represented are the local poor, including women, in any proposed management structures?**

We feel there was representation for example by the creation of local committees for agriculture conscious of biodiversity and the consultative nature of this project. This process though got affected by the pandemic which restricted movements and we think much more in this area can, should, and will be done.

- **How did the project positively influence household (HH) income and how many HHs saw an increase?**

Over 400 households were impacted by the project. (see <https://bit.ly/3wLwQZD> and <https://bit.ly/3qHRBDo>).

- **How much did their HH income increase (e.g. x% above baseline, x% above national average)? How was this measured?**

Farmers increased their production by an average of 22% (links above). We could not measure impact on economy of the women cooperative helped yet. This is because while we set-up the infrastructure for them (including purchasing tools, furniture, packaging supplies and training them and making marketing brochures and marketing points for them), this was done in the third year of the project which happened also to be the year of shutdown (pandemic) and not

sufficient time elapsed to measure sales/income increase for them. We hope as things open up, we will be able to do this evaluation. But farmers clearly increased their income and essentially all used products from their upgraded farms to meet their family needs and sell more <https://bit.ly/3wLwQZD> and the agricultural report <https://bit.ly/2Wc6i6o>

#### 4.6 Transfer of knowledge

The project resulted in advancement and transfer of biodiversity knowledge. Examples:

- 1) inventories, habitats, and threats, and developing management plans generated in a biologically important area of Bethlehem. Evidence for this is noted in the respective activities (Activities 1.1 to 1.14). The knowledge helped us decide also to restore 3 dunums with natural trees (evidence listed under Activity 1.11).
- 2) Nine research publications were completed (Annex 5) and more on the way.
- 3) The management plan was adopted by the Environment Quality Authority and the Ministry of Tourism and Antiquities in the overall management plan of this World Heritage Site.
- 4) Two female students finished masters degrees in Tourism and Hotel Management at Bethlehem University whose research related to the area of this project (Wadi Al-Makhrour). Further many international students did internship here and benefitted from this knowledge, two actually did thesis related to this project. a) María Cáceres Sánchez: The Exploitation of Natural Resources In Area C of The West Bank  
<https://drive.google.com/file/d/1qfADNQzIZkZQY9wG65MgbqdbuD6SZ9YM/view?usp=sharing>  
b) Julius Pahl: Development of a concept of measures for endangered orchid species in selected areas of the West Bank, Palestine  
[https://docs.google.com/document/d/12W795-LFYsJSdCE4aOKebJ\\_5VtIJAfdmohTpv2MBak/edit?usp=sharing](https://docs.google.com/document/d/12W795-LFYsJSdCE4aOKebJ_5VtIJAfdmohTpv2MBak/edit?usp=sharing)
- 5) Knowledge gained was also directly transferred to local school and university students. Examples <https://almakhrour.palestinenature.org/wp-content/uploads/2020/05/Community-activities.pdf>  
<https://almakhrour.palestinenature.org/wp-content/uploads/2020/05/Educational-Awareness-Workshops.pdf>

#### 4.7 Capacity building

Project staff developed skills in research and management. Manager Abdelsalam Janazreh and Manager Rami AbuSaad (males) learned biodiversity and sustainable development issues. The latter was employed by world Vision. Agricultural specialists Mohammad Amriya and Summer Shaheen also learned permaculture and biodiversity connectivity. Alice Walker and Roubina Ghattas (permaculture and plant biodiversity experts - both female) not only trained others in respective fields but were themselves beneficiaries of the capacity building offered via work on this project. For example Roubina Ghattas was asked to participate in national committees for the 6th CBD NR and for the NBSAPP. Elias Handal and Prof. Mazin Qumsiyeh (project members, males) were asked to work on protected areas and received a Belgian grant to that effect. Training was also provided to partners like the training done to ICP (Arabic) <https://youtu.be/0QxByyPMle8> Prof. Qumsiyeh traveled to Uganda and Elias was invited the year after to join physically in the committee meetings in Uganda but had to do it online due to Pandemic. Prof. Qumsiyeh was invited to join a number of committees locally on climate change, biodiversity, spatial planning etc and did attend international meetings (e.g. Sharm AlShaikh <https://www.cbd.int/doc/c/2000/ec3f/0cbb700fcf8f8e170b5f4afb/cop-14-12-en.pdf> )

### 5 Sustainability and Legacy

The project created a considerably positive impact in the local community and among partners and government agencies likely to endure. Enduring legacy include at least nine research publications (more coming), empowered 80 farmers, empowered local women groups with tools to grow their SMEs. In working with both children and adults, the enduring legacy is change based on the Chinese saying: "I hear and I forget, I see and I remember, I do and I understand". By having people use all their five senses, we were able to reach people of all ages from elementary school students to elderly farmers. We developed sense of exploration and interest among college students. Another lesson learned was the need for collaboration with national and local authorities that lead long-term engagement. A small project from National Geographic Society and this much larger project meshed together nicely allowed us to assess and serve community needs better and it is not just in agriculture (we showed them how to plant organically



and protect nature and leave farm wildlife corridors etc.), but also we learned that they needed much more in other areas in line with the UN Sustainable Development Goals (e.g. in ecotourism see <https://www.palestinature.org/research/TWIP-244-Qumsiyeh-Handal.pdf> ). There was also an unexpected connection and opportunity that came to our attention because of issues of cultural heritage and the fact that much of the valley is on the UNESCO's list of World Heritage Sites (due to ancient stone terraces, landscapes, and forms of agriculture). Another lesson learned was that researchers must become proactive in defending the areas they research. For example, we wrote a letter to UNESCO when we noted damage to the rich biodiversity area here and we actually got a response from UNESCO. See <https://www.palestinature.org/conservation/Letter-from-UNESCO.pdf> The work also constituted a model that can be applied nationally and in fact we expanded the work to produce a management plan for the nearby valley of Cremisan (see <https://bit.ly/2V4B1C9>).

## 6 Lessons learned

### 6.1 Monitoring and evaluation

There had been some changes in the design of activity 2.11 (conduct festivals) due COVID19 pandemic closure (see change request approved, and implemented at <https://bit.ly/2U9aqmx>). The internal M&E was done using tools like reporting, minutes, brainstorming, tracking sheets, pictures, produced videos, attendance sheets, MOUs, signed contracts, etc. Some indicators are measured before and after on the same day (e.g. for workshop training) while others are measured longer term (e.g. the biodiversity survey to measure change after almost three years of the project). For economic benefit through agriculture and marketing, we monitored agricultural outputs and via visits to each farmer 4 times per season, spring & fall" (i.e. 320 individual meetings per season and 640 per year in total). This was cumbersome for the agricultural specialist and some farmers thought it too much. At each step we adapted our procedures and our methodologies depending on any changing circumstances. For example, after receiving seedlings of poor quality, vendor was contacted and replacements made.

### 6.2 Actions taken in response to annual report reviews

- Outcome & Output indicators clarified and separated from activities and better written (SMART)
- Clarity on numbers as indicators is now clearer
- Clarity on educational modules in annex 2
- Other areas mentioned in review were clarified in this report

## 7 Darwin identity

Darwin's and UK's contribution was promoted and visible via press releases, social media outputs, branding and many more throughout all activities. aHere are two videos which talked of the activities by this project, You can also see this in visibility items like the four videos produced specifically for this project (see link in activity 3.12 above) Also the shared National Geographic Society- Darwin video <https://youtu.be/MjdvsK6pkec>. And here is a video in french on Agriculture work <https://youtu.be/OrCsh1t4aKs> Darwin logo and identity used in the main webpage of the Makhrou Valley project ([almakhrou.palestinature.org](http://almakhrou.palestinature.org)) and all the mainstream and social media appearances (evidence under Activity 3.11).



Figure. Some evidence of branding.

## 8 Impact of COVID-19 on project delivery

Closure and restriction of movement on the national level, halted normal movement of project team, beneficiaries and suppliers, which caused Major problems but project team did adapt. Delay in many operations were evident because of the lockdown on a national level. For example, suppliers were unable to operate and the university finance office was unable to procure many services and equipment relevant to the achievement of the project impact and the festivals and TV sessions were not done. The women grants launch, in addition to many as mentioned in details in the above progress of activities. Measures taken by the project team to mitigate this included online work and flexibility in operations and movements (facilitated by special permits from appropriate authorities). We acquired some permits from the ministry of agriculture to distribute the seeds and transplants to farmers, so it should be stated that the project team has been functional despite the closure on two levels. That enabled the project team to perform, farming, and conservation activities during the closure, that is in addition to what was accomplished with the farmers other outputs were approached, three dunums as key habitats in the valley had been restored. Online communication with farmers, in addition to acquiring legal permissions to move The project team had made social media groups for the farmers who had access to internet and were able to use the smart media, and there was continuous communication and work with farmers, regarding advising and counselling with regard to farming activities. For the farmers, most of them were able to tend to their lands. The only exception was some farmers from Beit Jala because Al-Makhroul valley falls under area C and Beit Jala main town is in Area A (Palestinian authority jurisdiction) so there was some restriction of movement. But via flexibility they were able to manage. However, tourism activities had all but stopped delaying benefit to locals (though not project activities towards that). We learned from this and continue to adapt and work effectively to follow-up on this project and in our other projects elsewhere.

## 9 Finance and administration

### 9.1 Project expenditure

Project spend (indicative) since last annual report	2020/21 Grant (£)	2020/21 Total actual Darwin Costs (£)	Variance %	Comments (please explain significant variances)
Staff costs (see below)	45,818.82	47,717.04	-1,898.22 104.14%	Reallocation from Media Coverage under the Operating Costs Budget Line to cover salaries of April 2021 (extension of 1 month)
Consultancy costs	9,368.49	8,450.14	918.35 9.80%	Due to the crisis of Covid-19, it was difficult to implement some activities
Overhead Costs	9,015.25	7,214.03	1,801.22 19.98%	
Travel and subsistence	1,795.97	880.67	915.30 50.96%	
Operating Costs	40,868.33	28,866.32	12,002.01 29.37%	
Capital items (see below)	1,269.40	1,177.44	91.96 7.24%	
Others (see below)	24,919.53	22,947.01	1,972.52 7.92%	

Audit Costs	1,300.00	1,300.00	0.00 0.00%	
<b>TOTAL</b>	<b>134,355.79</b>	<b>118,552.65</b>		

<b>Staff employed (Name and position)</b>	<b>Cost (£)</b>
Dr. Mazin Qumsieh / Project Leader	7,675.68
Abdelsalam Aljanazreh / Project Manager	20,879.87
Summer Shaheen / Agricultural Specialist	5,071.37
Mohammad Abu Amireh / Agricultural Specialist	8,429.04
Manal Kassis / ICP	4,964.53
Mohammad Khalil Saleh / Trainer	696.55
<b>TOTAL</b>	<b>47,717.04</b>

<b>Capital items – description</b>	<b>Capital items – cost (£)</b>
<u>Budget Line: Arrow Signs, Plant-Info Signs and Maps</u> RAI House of Art / 7 Arrow signs on Al-Makhrouf / NIS 4,900	1,084.58
<u>Budget Line: Arrow Signs, Info Signs &amp; Maps:</u> Sabat Stores/Supplies /NIS 123	26.62
<u>Budget Line: Arrow Signs, Plant-Info Signs and Maps:</u> Asad Al-Deen Alshareef / Prepare materials and tools ,and installation of arrow signs / NIS 300	66.24
<b>TOTAL</b>	<b>1,177.44</b>

<b>Other items – description</b>	<b>Other items – cost (£)</b>
<u>Budget Line: Bank charges for international transfer of money to lead applicant</u> Arab Bank / Bank charges on the inward transfer from DEFRA / GBP 34.90	34.90
<u>Budget Line: Bank charges for international transfer of money to lead applicant</u> Arab Bank / Bank charges on the inward transfer from DEFRA / GBP 3.19	3.19
<u>Budget Line: Bank charges for international transfer of money to lead applicant</u> Arab Bank / Bank charges on the inward transfer from DEFRA / GBP 35.60	35.60
<u>Budget Line: Bank charges for international transfer of money to lead applicant</u> Arab Bank / Bank charges on the inward transfer from DEFRA / GBP 2.99	2.99
<u>Budget Line: Bank charges for international transfer of money to lead applicant</u>	36.41



Arab Bank / Bank charges on the inward transfer from DEFRA / GBP 36.41	
<u>Budget Line: Bank charges for international transfer of money to lead applicant</u> Arab Bank / Bank charges on the inward transfer from DEFRA / GBP 3.00	3.00
<u>Budget Line: Field work consumable tools and food processing workshop consumable tools</u> Albalad Supermarket / Materials and tools for the three days' workshop about "Food Processing" on 05/11/2020, 09/11/2020 and 10/11/2020 / NIS 332.00	74.44
<u>Budget Line: Field work consumable tools and food processing workshop consumable tools</u> Riyadh Amin Alhseinat Stores / Materials/tools for the three days' workshop about "Food Processing" on 05/11/2020, 09/11/2020 and 10/11/2020 / NIS 917.00	205.62
<u>Budget Line: Field work consumable tools and food processing workshop consumable tools</u> : Crown Bakery / Materials and tools for the three days' workshop about "Food Processing" on 05/11/2020, 09/11/2020 and 10/11/2020 / NIS 1,164.00	260.99
<u>Budget Line: Field work consumable tools and food processing workshop consumable tools</u> : Hussein Manasra Stores for Consumable Materials / Materials and tools for the three days' workshop about "Food Processing" on 05/11/2020, 09/11/2020 and 10/11/2020 / NIS 1,192.00	274.40
<u>Budget Line: Field work consumable tools and food processing workshop consumable tools</u> : Khamis Trading Store / Consumables / NIS 120.00	26.07
<u>Budget Line: Field work consumable tools and food processing workshop consumable tools</u> Ein Karem / Supplies / NIS 200.00	43.25
<u>Budget Line: Field work consumable tools and food processing workshop consumable tools</u> Reeshco Trading Co. / Supplies / NIS 151.00	32.61
<u>Budget Line: Field work consumable tools and food processing workshop consumable tools</u> Albalad Supermarket / Supplies / NIS 255.00	55.63
<u>Budget Line: Field work consumable tools and food processing workshop consumable tools</u> Reeshco Trading Co. / Supplies / NIS 522.00	114.02
<u>Budget Line: Publicity (T-shirts, Caps, Bags, Publications)</u> Hodali Textile & Printing Company (HTP) / 200 footer sweater shirts with zipper, 100 T-shirts short sleeves, and 100 caps / NIS 10,550.00	2,348.52
<u>Budget Line: Printing Brochure (2500 copies)</u> Creative Ad / 2,500 flyers 21cm * 29.5 cm (A4) / NIS 1,850.00	413.87
<u>Budget Line: Agriculture Inputs (Organic Compost and Seeds, etc)</u> Al-Safi for Agricultural Materials / Agricultural Materials / NIS 38,000	8,867.52
<u>Budget Line: Agriculture Inputs (Organic Compost and Seeds, etc)</u> Al-Safi for Agricultural Materials / Agricultural Materials - Pruning Shear Trees and Submersible Pumps for fish tank / NIS 4,360.00	1,011.69
<u>Budget Line: Agriculture Inputs (Organic Compost and Seeds, etc)</u> Jealan Trading Co. / Agricultural Materials - Compost fertilized soil and Toof / NIS 3,820.00	880.63

<u>Budget Line: Agriculture Inputs (Organic Compost and Seeds, etc)</u> Agricultural Engineering company / Agricultural Materials / NIS 11,901.85	2,698.83
<u>Budget Line: Agriculture Inputs (Organic Compost and Seeds, etc)</u> George Jarasmus Rishmawi - Abu Nabil / Agricultural Materials / NIS 9,048.80	2,046.31
<u>Budget Line: Agriculture Inputs (Organic Compost and Seeds, etc)</u> George Jarasmus Rishmawi - Abu Nabil / Agricultural Materials / NIS 770.00	176.61
<u>Budget Line: Agriculture Inputs (Organic Compost and Seeds, etc)</u> Al-Safi for Agricultural Materials / Transportation fees for delivering agricultural materials to Battir, Al-Walajeh, Husan, and Beit-Jala / NIS 2,400.00	538.36
<u>Budget Line: Agriculture Inputs (Organic Compost and Seeds, etc)</u> Agricultural Engineering company / Agricultural Materials / NIS 11,950.00	2,604.62
<u>Budget Line: Refreshments for cross villages demonstrations (40 farmers)</u> Al-Balad Supermarket / Hospitality for the cross village exchange and demonstration visit on 25/08/2020 from Battir to Al-Walajeh / NIS 75.00	16.73
<u>Budget Line: Refreshments for cross villages demonstrations (40 farmers)</u> Al-Balad Supermarket / Hospitality for the cross village exchange and demonstration visit on 25/08/2020 from Battir to Al-Walajeh / NIS 38.00	8.47
<u>Budget Line: Refreshments for cross villages demonstrations (40 farmers)</u> Crown Bakery / Hospitality for the cross village exchange and demonstration visit on 25/08/2020 from Battir to Al-Walajeh / NIS 100.00	22.30
<u>Budget Line: Refreshments for cross villages demonstrations (40 farmers)</u> Reeshco Trading Co / Medical paws and masks for the cross village exchange and demonstration visit on 25/08/2020 from Battir to Al-Walajeh / NIS 43.00	9.59
<u>Budget Line: Refreshments for cross villages demonstrations (40 farmers)</u> Albalad Supermarket / Supplies / NIS 457.00	99.83
<b>TOTAL</b>	<b>22,947.01</b>

## 9.2 Additional funds or in-kind contributions secured

Source of funding for project lifetime	Total (£)
EU Peacebuilding Initiative "Unity and Diversity in Nature and Society" January 2020 - December 2022 (3 years)	745,000
National Geographic Society: Biodiversity in Al-Makhrour Valley, June 2018-May 2020	21,300
Regione Autonoma Friulia Venezia Giulia: Management Plan for Cremisan Valley	5000
<b>TOTAL</b>	<b>771,300</b>

Source of funding for additional work after project lifetime	Total (£)
Palestinian Authority, Environment Quality Authority. Project for generating 6th CBD report and national strategy and action plans January 2021 - August 2022	167,000
Cremisan (nearby valley) Mapping and generating management plan	5000

<b>TOTAL</b>	<b>172,000</b>
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### 9.3 Value for Money

We succeeded in delivering amazing success with limited resources. The biggest value for the money spent was our investment in capacity building and people empowerment (farmers, women cooperatives, students etc). The first agricultural specialist we hired moved on to get a master degree. The farmers and women cooperatives developed new methods and new products which will serve them for years to come. Restoration with wild trees in a 3 dunum area acted as an example which will be also followed by much more work at a national level. Our biodiversity research data on this valley produced 9 publications and many more are forthcoming. After the COVID19, the plans developed will surely increase ecotourism in ways that benefit people and wildlife. Overall, we have developed scientific studies that we will reference for a long period of time, and will be used by both governmental and non-governmental institutions, including students, schools, universities, all actors in research, education, and conservation of environment. Furthermore, the bidding process for agricultural inputs resulted in significant savings, which allowed us to add one more winter season of distributions in 2021. The relatively small investments in women cooperatives about (£4000 per cooperative) will produce longterm benefit of many folds financial revenue for marginalized communities.

### 10 OPTIONAL: Outstanding achievements of your project (300-400 words maximum). This section may be used for publicity purposes

*I agree for the Darwin Secretariat to publish the content of this section (please leave this line in to indicate your agreement to use any material you provide here)*

The project began with some partnerships and built on earlier projects (e.g. a National Geographic Society) and led to other projects now being implemented (see section 9.2 and this report on Cremisan Valley: <https://bit.ly/2V4B1C9>). Two notable achievements that built on it in 2021: the Environmental Quality Authority has selected us to generate the National Biodiversity Conservation Action Plan (last one 1999) and produce the 6<sup>th</sup> National Convention on Biological Diversity report (the fifth one was 2015). This shows the level of confidence extended to our team, which built its own capacity through the Darwin Project.



Fig. 1. Beneficiary farmer woman selling produce at festival held 2019 (Credit PMNH-BU)

Fig. 2. Team member Summer Shaheen in the field (Credit PMNH-BU)

## Annex 1 Project's original (or most recently approved) logframe, including indicators, means of verification and assumptions.

Note: Insert your full logframe. If your logframe was changed since your Stage 2 application and was approved by a Change Request the newest approved version should be inserted here, otherwise insert the Stage 2 logframe.

Project summary	Measurable Indicators	Means of verification	Important Assumptions
<b>Impact: The semi-natural ecosystems of the southern areas of the West Bank are sustainably maintained with resultant enhancement of Biodiversity conservation, traditional agriculture practices, and socioeconomic development of local people.</b> (Max 30 words)			
<b>Outcome:</b> (Max 30 words) <b>By 2021, the Palestinian communities' accessed benefits through valuation/conservation of their ecosystems, reviving traditional farming, and enhancing ecotourism activities at Al-Makhroun valley where at least 344 households will directly benefit</b>	0.1 Baseline study of biodiversity covering the area of 2.6 km <sup>2</sup> core area (5 km <sup>2</sup> with buffer zones) then re-evaluation at end of three years shows preservation or increase of biodiversity (versus the decline that has been going on in the past few years)	<ul style="list-style-type: none"> <li>• Baseline (year 2019) and end line (2020) reports for ecology/ biodiversity components,</li> <li>• 3-5 scientific publications,</li> <li>• Ecology, flora, fauna and birds databases including monitoring indicators (see activities for e.g.)</li> <li>• 20 Field visit reports including photos and maps</li> <li>• # of field survey equipment</li> <li>• Maps delineating the valley, forested area surrounding it and semi-natural areas inside the village boundaries</li> <li>• 5 project progress reports (one every six months); from September 2018 to February 2021.</li> <li>• Final technical and financial reports</li> </ul>	Political turmoil does not interfere in project implementation; (the project has flexibility in shifting locations when one community has disturbances).  Staff and workers employed by the project are living in Bethlehem Governorate to ensure their availability during needed periods during the project implementation despite any political turmoil  Assume supplies and equipment remain possible to be purchased with few restrictions.
	0.2 Number of households acting in environmentally sensitive ways around their homes increase to 30 households (average 6 members of each household) by the first years and then to 244 households (50% females) by year three	<ul style="list-style-type: none"> <li>• 1 baseline and 2 follow up surveys (one per year) of sample of local households (20% of total beneficiaries (of which 50% females) targeted per year) by staff and volunteers</li> <li>• Follow up reports every year; to measure impact of the project including environmentally sensitive practices (includes findings of follow up surveys)</li> <li>• Field visit reports by project staff</li> </ul>	Continued cooperation of local and national authorities.



		<ul style="list-style-type: none"> <li>• 5 project progress reports (one every six months); from September 2018 to February 2021.</li> <li>• Final technical and financial reports</li> </ul>	
	0.3 By year 3, at least 224 households 80 hh in farming - 50% females) including 80 hhs in festivals (50% females) and 40 hhs in food processing (100% females), 60hh running cooperatives (50% females), 12 hhs running market points (100% females), 32 hhs in eco-tourism (50% females) have developed income generating activities like sustainable agriculture, marketing and ecotourism activities and act as models in their communities	<ul style="list-style-type: none"> <li>• Follow up report at end of the project (year 3); to measure impact of the project including generation of income where number of M&amp;E questions are embedded.</li> <li>• Maps locate the targeted farms, festival, selling market points, eco-tourism visitors' path, etc.</li> <li>• 5 project progress reports (one every six months); from September 2018 to February 2021</li> <li>• Project audit report every year.</li> <li>• Final technical and financial audit reports</li> </ul>	
	0.4 Sustainable agricultural productivity increases at targeted sites where vegetables production increases by 30% of yearly production (estimated between 18-22 tons for 40 dunums per year)	<ul style="list-style-type: none"> <li>• Follow up reports every year; to measure impact of the project including increase in vegetables production at targeted sites where number of M&amp;E questions are embedded</li> <li>• Project audit report every year.</li> <li>• Field visit reports by project staff</li> <li>• 5 project progress reports (one every six months); from September 2018 to February 2021</li> <li>• Final technical and financial audit reports</li> </ul>	
	0.5 By year 3, at least 10 modules of transferrable knowledge are developed in a manner that would	<ul style="list-style-type: none"> <li>• Finalized modular that are based on project studies in different project field including</li> </ul>	

	enhance conservation and sustainability	<p>composting, traditional farming, eco-tourism, biodiversity and conservation, advanced marketing, etc. that is transferrable to people documented in writings and via photos.</p> <ul style="list-style-type: none"> <li>• Final project technical report</li> </ul>	
	0.6 Reduction of damaging human activities (hunting, logging, trash dumping) in the protected areas by 10% annually from baseline	<ul style="list-style-type: none"> <li>• Baseline report to measure impact of damaging human activities on the environment of the targeted site; upon conducting an initial assessment for major indicator reflecting on the mentioned issues.</li> <li>• Follow up report at end of the project (year 3); to measure impact of the project including reduction of damaging activities where number of M&amp;E questions are embedded</li> <li>• Final technical and financial audit reports</li> </ul>	
<p><b>Outputs:</b></p> <p>1. Inventory and assessment for biodiversity at both habitat and species level are conducted in order to consolidate the scientific data required to propose various forms of conservation management and protection within the project area</p>	<p>1.1 Up to 2.5km<sup>2</sup> of Al-Makhrour valley is surveyed for its biodiversity components at both ecosystem and species levels. This includes 5 field trips/surveys covering the different seasons of the year (total 20 field trips per year). Comprehensive surveys in the first and updating for second project years (2018/2019, 2019/2020) and evaluation surveys in the third project year 2020.</p>	<ul style="list-style-type: none"> <li>• Literature Reviews for national and global relevant research documents</li> <li>• 20 Field visit reports by project team</li> <li>• Two biodiversity reports that describes the ecosystems, habitats at the Valley, threats and drivers of change, flora and fauna species, conservation values and others</li> <li>• Ecology, flora, fauna and birds databases including monitoring indicators (see activities for e.g.)</li> <li>• 3-5 publications in scientific journals utilizing data of biodiversity in the targeted areas</li> </ul>	<p>Potential travel restrictions could delay arrival via alternative roads (we need flexibility in timing of project activities).</p> <p>Women participation in town hall meetings, interviews with stakeholders, or committee formulated for restoration, depends on availability of women in related positions.</p>

	<p>1.2 One ecosystem management plan will be developed for the whole valley using CMP model (Conservation Measures Partnership, 2013) and IUCN relevant guidelines</p>	<ul style="list-style-type: none"> <li>• 12 Interviews with stakeholders (4 village councils, 4 GOV. Bodies, and 4 local organizations) – questionnaires, attendance and photos.</li> <li>• One report that describes the management plan for the Valley, considering both the landscape, socio-ecological systems, and climate change aspects to be handed to relevant decision makers and stakeholders. Data disaggregated by gender when appropriate</li> </ul>	
	<p>1.3 Three priority habitats at the Valley, their conservation frameworks and restoration schemes were identified and designed with their assessments and monitoring data sets</p>	<ul style="list-style-type: none"> <li>• Formulation of one committee for restoration actions from key stakeholders from local communities, EQA and MoA directorates in Bethlehem Governorate, and others (40% females).</li> <li>• 6 field visits for selected habitats</li> <li>• One report that describes the conservation values including the priority habitats, their conservation frameworks and restoration schemes (where necessary), and list of monitoring datasets (linked to database mentioned in 1.1).</li> <li>• Up to 3 dunums will be restored, the method for restoration will be decided based on the type of pressures and threats affecting the sites.</li> </ul>	

	<p>1.4 Four town-hall style meetings will be conducted for 40 community members for each targeted locality (total 160 local participants, 50% women) about plans of project development, SWOT analysis for key challenges, environmental remedies and ecological economic potentials</p>	<ul style="list-style-type: none"> <li>• Media coverage, newspaper announcement, list of attendees, photos</li> <li>• a report about main findings and recommendations; data disaggregated by gender</li> </ul>	
<p><b>2. Economic benefits to the local communities; including women and youth, in proximity to Al-Makhrour Valley are secured through sustainable agriculture and eco-tourism enhancement</b></p>	<p>2.1 By year 2 (2019), 40 dunums for 80 farmers (50% women farmers) will be provided green agriculture inputs including 56,000 meters of irrigation pipes (1400m/1dunum), 80 water tanks (1cubic meter), 80 pumps (1horse power), 44,000 vegetable seedlings (1100seedling/dunum) or 240kg seeds (6kg/dunum), 2000 sacks of organic compost (50 sacks/dunum).</p>	<ul style="list-style-type: none"> <li>• Formulation of one committee for traditional farming program from key stakeholders from local communities, MoA directorate in Bethlehem Governorate, and others (40% females).</li> <li>• Announcement inviting farmers to apply for selection process for the agriculture intervention</li> <li>• Applications filed by farmers from targeted villages/towns</li> <li>• Inspection field visits for sample of farmers before signing MoUs.</li> <li>• List of selected farmers</li> <li>• Signed MoUs with the selected 80 farmers</li> <li>• Order of purchase for agricultural inputs</li> <li>• 4 Field visit reports per farmer per season (640 visit/year),</li> <li>• evaluation report for vegetables production (expected to produce 1500-2000 kg/dunum),</li> <li>• project progress reports (one every six months); from September 2018 to February 2021</li> <li>• Final technical and financial audit reports</li> </ul>	<p>Getting “buy-in” by local people.</p> <p>(Willingness and interest of local people is a key stone that the project rely on and hence the team will always work to secure this factor especially during the selection process of beneficiaries for the different interventions and through the formulated project committees)</p> <p>Cooperation of local authorities of targeted localities (town councils and municipalities) while implementing the project activities. (The applicant collected letters of support during the planning of the project local authorities, emphasizing their continuous involvement in the project activities,</p>



	<p>2.2 A two-day workshop for 20 cooperatives (10 productive coop – at least 3 member each (sell local fresh and processed local products) and 10 consumption coop – at least 3 members each (buy local fresh and processed products)) to build marketing networks and partnerships (contacts will be exchanged).</p>	<ul style="list-style-type: none"> <li>• Workshop's invitation,</li> <li>• list of attendees and their contacts,</li> <li>• Minutes of meeting and photos,</li> <li>• Evaluation sheets filled by attendees</li> <li>• follow up report for marketing progress done yearly (years 2019 &amp; 2020)</li> <li>• project progress reports (one every six months); from September 2018 to February 2021</li> <li>• Final technical and financial audit reports</li> </ul>	<p>formulated committees and follow ups))</p>
	<p>2.3 One market festivals for Al-Makhrour local products; 40 local farmers/festival (50% female farmers); one selling summer agro-produce (June or July 2019). 4 distribution outlets have shelves with the products of the producing women groups available. 2000 Printed pamphlets for women groups products</p>	<ul style="list-style-type: none"> <li>• Fees for renting a venue and setting the bazar area for the festivals,</li> <li>• Order of purchase for goods for setting the festival (tents, chairs &amp; tables, packaging material)</li> <li>• list of farmers participating at each festival,</li> <li>• field visit reports and photos,</li> <li>• Follow up report for the progress and impact of the festivals,</li> <li>• project progress reports (one every six months); from September 2018 to February 2021</li> <li>• Final technical and financial audit reports</li> <li>• Shelves delivered.</li> <li>• Signatures of receipt by women.</li> <li>• Pictures.</li> <li>• Documented report.</li> <li>• Printed pamphlets.</li> </ul>	

		<ul style="list-style-type: none"> <li>• Pictures.</li> <li>• Report.</li> </ul>	
	2.4 Mark the Al-Makhroul visitors path by installing 20 arrow signs, 20 plant-info signs and 2 maps with some volunteer cleaning works along the Valley's trail.	2 Formulation of one committee for eco-tourism program from key stakeholders from local communities, MoTA directorate in Bethlehem Governorate, and others (40% females). 3 Specifications and order of purchase for signs, and maps 4 Field visit report for installation and cleaning works at Al-Makhroul valley including photos 5 project progress reports (one every six months); from September 2018 to February 2021 6 Final technical and financial audit reports	
	2.5 Four sub-grants for 4000 (£) each are given to four existing/initiated women business enterprises (an average 3 women members per enterprise) for market local products at four targeted localities	7 Announcements at local authorities for the sub-grant, 8 Application forms for sub-grant request, 9 Evaluation reports for selection ensuring the integrity and governance of the process 10 Signed MoUs with 12 women (including women cooperatives) to start the four initiatives. 11 Four market selling points' business plans for marketing the valleys agricultural and cultural and touristic products, 12 Government registration certificates, 13 Follow up reports every year to measure the success of this initiative.	

		<p>14 project progress reports (one every six months); from September 2018 to February 2021</p> <p>15 Final technical and financial audit reports</p>	
<p><b>3. Raise awareness of and build capacities of local communities and stakeholders to better manage their natural resources, support conservation measures and benefit from sustainable agricultural and eco-tourism interventions while impacting the national legislation and involving both females and youth</b></p>	<p>3.1 One day workshop for 20 main stakeholders from targeted localities, governmental bodies mainly EQA, MoA, and MoTA and media to present the Valley's biodiversity management plans to be considered at legislative level.</p>	<ul style="list-style-type: none"> <li>• Workshop's invitation, agenda, presentation, and distributed document (biodiversity plan report prepared by the project earlier),</li> <li>• Minutes of meeting including photos, list of attendees,</li> <li>• Pre and post evaluation reports reflecting on the knowledge base concerning the status of biodiversity at targeted area and the stakeholders' willingness to adopt the plan and implement it later on the ground,</li> <li>• project progress reports (one every six months); from September 2018 to February 2021</li> <li>• Final technical and financial audit reports</li> </ul>	<p>Locals including schools willingness to participate in training sessions and workshops to learn about local and national environment, biodiversity conservation, and business interventions for better livelihoods (the project will initiate this activity through Ministry of Education and Higher Education)</p> <p>The trainees buy-in the training educational materials, orientations and recommendations (the project will ensure motivation and engagement of all participants)</p> <p>Some of the targeted farmers might change by the project team during the project implementation; only in case they show inefficiency in delivery aimed at outputs. The project team will perform the selection upon the same set of criteria; used at the beginning of the project.</p>
	<p>3.2 Four 1-day workshop to emphasize marketing networks, initiation of small business enterprises, and methods of governance and of sustaining their businesses for farmers and relevant cooperatives</p>	<ul style="list-style-type: none"> <li>• Workshop's invitation, agenda, presentation, and educational material</li> <li>• Minutes of meeting including photos, list of attendees,</li> <li>• Pre and post evaluation reports reflecting on the knowledge base of participates in relevant aspects and highlighting the benefits they gained from this workshop in their business,</li> <li>• project progress reports (one every six months); from</li> </ul>	

		<p>September 2018 to February 2021</p> <ul style="list-style-type: none"> <li>• Final technical and financial audit reports</li> </ul>	
	<p>3.3 Four 2-days training sessions for best sustainable farming practices (organic, permaculture, managing the farm, etc.) (80 farmers in total, 50% women, 20 farmers per workshop)</p>	<ul style="list-style-type: none"> <li>• Training invitation, agenda and presentation (including training material),</li> <li>• Pre and post evaluation reports reflecting on the knowledge base of participates in relevant aspects; highlighting the benefits they gained from this training in their farming practices,</li> <li>• attendees, educational material, photos,</li> <li>• Project progress reports (one every six months); from September 2018 to February 2021</li> <li>• Final technical and financial audit reports</li> </ul>	
	<p>3.4 Four 2-days training sessions for best practices in conserving biodiversity and maintaining the eco-system services (theoretical and practical at the valley) (60hhs in total, 15 hhs per village) (50% women)</p>	<ul style="list-style-type: none"> <li>• Training invitation, agenda and presentation (including training material,</li> <li>• Pre and post evaluation reports reflecting on the knowledge base of participates in relevant aspects; the level of valuation for biodiversity and the importance of tis conservation at targeted area, and best practices to conduct conservation practices,</li> <li>• list of attendees, educational material, photos,</li> <li>• Project progress reports (one every six months); from September 2018 to February 2021</li> </ul>	



		<ul style="list-style-type: none"> <li>• Final technical and financial audit reports</li> </ul>	
	3.5 One-day training session for women entrepreneurs who has initiated their business selling points during the project (12 women in total)	<ul style="list-style-type: none"> <li>• Training invitation, agenda and presentation</li> <li>• Business plan for each selling point</li> <li>• Pre and post evaluation reports reflecting on the knowledge base of participates in relevant aspects; highlighting the benefits they gained from this training in their business,</li> <li>• list of attendees, educational material, photos,</li> <li>• Project progress reports (one every six months); from September 2018 to February 2021</li> <li>• Final technical and financial audit reports</li> </ul>	
	3.6 Two 2-days food processing training sessions for women headed households (one in first year 2019 and one in second year 2020 of the project) (40 women in total, 5hhs/village/year, (100% women))	<ul style="list-style-type: none"> <li>• Training invitation, agenda and presentation (theoretical session)</li> <li>• Order of purchase for food processing tools</li> <li>• Pre and post evaluation reports reflecting on the knowledge base of participates in relevant aspects; highlighting the benefits the women gained from this training especially in terms of quality control and good packaging,</li> <li>• list of attendees, educational material, photos,</li> <li>• Project progress reports (one every six months); from September 2018 to February 2021</li> </ul>	

		<ul style="list-style-type: none"> <li>Final technical and financial audit reports</li> </ul>	
	3.7 Two-days workshop for alternative tourism operators (10 representatives – 2 persons each) and 12 representatives of the local communities (3 members per locality) that works in the tourism sector (50% women)	<ul style="list-style-type: none"> <li>3 Workshop invitation, agenda, list of invitees and educational material in best method for successful eco-tourism plan and business enterprises</li> <li>4 Tourism business plan for the valley is set by both parties (tourism operators and local communities with benefit sharing concept),</li> <li>5 Pre and post evaluation reports reflecting on the knowledge base of participates in relevant aspects; highlighting the benefits they gained from this workshop in their business,</li> <li>6 list of attendees and their contacts,</li> <li>7 Minutes of meeting and photos,</li> <li>8 follow up report for eco-tourism progress done yearly (years 2019 &amp; 2020)</li> <li>9 project progress reports (one every six months); from September 2018 to February 2021</li> <li>10 Final technical and financial audit reports</li> </ul>	
	3.8 Ten meetings for 5 schools located in Bethlehem District to present the project, the valley, raise environmental awareness, and create school environment clubs (20 students each, 50% females).	<ul style="list-style-type: none"> <li>11 Letter of cooperation from Ministry of Education and higher Education (MEHE)</li> <li>12 Letter of invitation for the schools</li> <li>13 Educational material and modular</li> <li>14 Meetings minutes of meetings, photos, list of students</li> </ul>	

		15 Schools' environmental clubs evaluation and follow up reports 16 project progress reports (one every six months); from September 2018 to February 2021 17 Final technical and financial audit reports	
	3.9 At least 106 social media announcements, 15 newspaper news, and 4 TV sessions, a website for the valley will be disseminates	<ul style="list-style-type: none"><li>• The announcements and news documented in progress reports,</li><li>• Fees for newspapers, development of the website and TV sessions upon bidding procedure).</li></ul>	
	3.10 Up to 2500 copies of brochures for education about the valley, its trail and potential conservation and development opportunities	<ul style="list-style-type: none"><li>• the brochure print outs</li><li>• Fees for montage and print outs</li><li>• project progress reports (one every six months); from September 2018 to February 2021</li><li>• Final technical and financial audit reports</li></ul>	
<b>Activities</b> (each activity is numbered according to the Output that it will contribute towards, for example 1.1, 1.2 and 1.3 are contributing to Output 1)  1.1 Recruit project coordinator, scientific researchers, consultants, and local field staff 0.2 Project start up workshop inviting relevant stakeholders including GOVs., NGOs, Universities, Local authorities (village councils/municipalities), tourism operator, cooperatives, media, and many others at Bethlehem University.  <b>Output 1: Inventory and assessment for biodiversity at both habitat and species level are conducted in order to consolidate the scientific data required to propose various forms of conservation management and protection within the project area</b>  1.1 Analyse literature for national and global relevant research documents. This includes a desk study and collection of data of relevance to the project and its outputs. 1.2 Initial town-hall style meetings for community members in each targeted locality about plans of project development, SWOT analysis for key challenges, environmental remedies and ecological economic potential; supported with media coverage and reporting. (Gender inclusion for attendees). 1.3 Conduct biodiversity inventory for Al-Makhrou valley; including comprehensive surveys for Al-Makhrou Valley ecosystem, identification of habitats, including flora and fauna species, birds (winter/summer migration), values of biodiversity, conservation targets and their threats using RSCN methodology for fauna surveys <sup>1</sup> and Braun and Blanquet for flora surveys <sup>2</sup> , IUCN guidelines <sup>3</sup> and GIS/RS analysis). This includes five field trips/surveys per targeted locality and the whole valley at the different year seasons (total 20 field trips).			

<sup>1</sup> RSCN. 2005. The Royal Society for the Conservation of Nature: Field Research Manual.

<sup>2</sup> <https://link.springer.com/article/10.1007/BF01866672>

<sup>3</sup> Example: <https://www.iucn.org/content/how-incorporate-gender-conservation>

- 1.4 Prepare baseline evaluation report for ecosystem/biodiversity status at Al-Makhrour Valley (conducted during Spring year 2019)
  - 1.5 Establish ecology, flora, fauna and birds databases; information will be gathered from literature review, stakeholders meetings, and field surveys.
    - 1.5.1 Ecology section with set of indicators such as: studying areas, borders, physical characteristics, type /area of vegetation cover, type/area ecosystem type and number/type of habitats, and other cultural/ natural features/resources and heritage items of the targeted area, and others. Using GIS and RS applications.
    - 1.5.2 Flora and fauna section will be based on measuring taxonomic diversity of a targeted geographic area; looking at species richness, abundance and frequency, etc. at this area, conservation values of targeted habitats using Braun and Blanquet method for flora, IUCN red listing, species global / national conservation status, utilization/economic values, endemism and others<sup>4</sup>.
  - 1.6 Establish monitoring database including monitoring indicators divided into sections related to the natural feature investigated such as ecology, habitat, flora, fauna, and birds. Examples on indicators are: total degraded area of total targeted area (using GIS&RS applications), changes in degradation, changes in habitats and NDVI over 10-15 years, habitat/species richness from baseline to end line surveys and others
  - 1.7 Prepare biodiversity management plan for the Valley, considering both the landscape, socio-ecological systems, and climate change aspects to be handed to relevant decision makers and stakeholders supported with CMP model (CMP, 2013)<sup>5</sup> and interviews with stakeholders and gender inclusion.
  - 1.8 Identify key sensitive habitats along the valley and set their conservation frameworks and restoration schemes for selected habitats; supported with field visits, reporting and monitoring data base (section 1.6) (referring to IUCN, 2012)<sup>6</sup>; building on the findings of previous sections 1.3, 1.5, and 1.7 and others<sup>7</sup>).
  - 1.9 Hand the management plan, conservation frameworks and restoration schemes documents to EQA and MoA.
  - 1.10 Formulation of one committee for restoration actions from key stakeholders from local communities, EQA and MoA directorates in Bethlehem Governorate, and others (40% females).
  - 1.11 Restore up to max. 3 dunums of key habitats where found necessary, the method for restoration will be decided based on the type of pressures and threats affecting the sites.
  - 1.12 Prepare end line evaluation report for updating ecology/biodiversity status at Al-Makhrour valley conducted in Spring 2020
  - 1.13 Publish 3-5 scientific publications of relevant to this project output
  - 1.14 Follow up report at end of the project (year 3); to measure impact of the project on reduction of damaging activities (hunting, logging, dumping waste, fires, etc.) where number of M&E questions are embedded. It will include sum the findings of other conducted follow up surveys during the project period such as the ones mentioned in 1.4, 1.6, 1.7, 1.8, and 1.12.
- Output 2: Economic benefits to the local communities; including women and youth, in proximity to Al-Makhrour Valley are secured through sustainable agriculture and eco-tourism enhancement**
- 2.1 Formulation of one committee for traditional farming program from key stakeholders from local communities, MoA directorate in Bethlehem Governorate, and others (40% females)
  - 2.2 Prepare and distribute announcement invitation to local farmers to apply for the selection process for the project agriculture intervention, invitations are distributed at key organization, shop, and religious sites
  - 2.3 Revise the applications filed by farmers from targeted villages/towns with the formulated committee based on set of criteria for the selection process; supported with inspection field visits for a sample of selected farmers (50% of targeted farmers)

<sup>4</sup> <file:///C:/Users/User/Downloads/9783319154633-c2.pdf> and

<sup>5</sup> CMP, 2013. Open Standards for the Practice of Conservation of the Conservation Measures Partnership (<http://cmp-openstandards.org/wp-content/uploads/2014/03/CMP-OS-V3-0-Final.pdf> )

<sup>6</sup> IUCN, 2012. Ecological Restoration of Protected Areas: Principles, Guidelines and Practices (<https://portals.iucn.org/library/sites/library/files/documents/PAG-018.pdf> )

<sup>7</sup> Folke, C., R. Biggs, A. V. Norström, B. Reyers, and J. Rockström. 2016. Social-ecological resilience and biosphere-based sustainability science. Ecology and Society 21(3):41. <http://dx.doi.org/10.5751/ES-08748-210341>

- 2.4 Sign MoUs with the selected 80 farmers to specify the roles and responsibilities of both parties; emphasizing the obligation to sustain the inputs after the project ends
- 2.5 Purchase agricultural inputs for 40 dunums for both agricultural summer/winter seasons 2019 and summer/winter seasons 2020 including
  - 2.5.1 Irrigation network: main pipes (1200 meters of 16 ml pipes/dunum) and secondary pipes (200 meters of 25 and 32 ml pipes/dunum)
  - 2.5.2 Up to 1 water tank (1 cubic meter and 1 pump (1 horse power) for each farmer beneficiary.
  - 2.5.3 Up to 1100 seedlings and /or 6 kgs of seeds of vegetables per dunums per season (summer vegetables will be Battiri eggplants, hot & sweet pepper, cowpeas, beans, squash, cucumber, tomatoes, okra and others. Winter vegetables will be cauliflower, cabbage, lettuce, spinach, raddish, broad beans, onions, thyme and others)
  - 2.5.4 Up to 25-30 sacks of organic compost per dunum per season
- 2.6 Land preparations, weed removal and organic compost additions for selected land-farms (0.5 dunum for each selected farmer)
- 2.7 Distribution of agricultural inputs and cultivation of diverse summer and winter vegetable crops at selected farms under optimum sustainable conditions
- 2.8 Conduct 4 follow up field visits per farmer per season (320 visit/ season), supported with reports
- 2.9 Conduct two cross village exchange and demonstration visits (during first three cultivation seasons). After having a successful plantation season an exchange visit will be arranged per season to demonstrate sites, and to foster collaboration and cooperation between participating villages/farmers and extension to villages outside the scope of this project.
- 2.10 Evaluation report for summer /winter vegetables production (expected to produce 1500-2000 kg/dunum) and income generation / food self-sufficiency of this activity on yearly basis
- 2.11 Conduct first festival during harvesting period of summer cultivation season in Battir village and of winter cultivation in Beit Jala upon consultation with formulated committee and the 40 selected farmers (50% women) for each festival. This includes renting an accessible open place in Battir/ Beit Jala, setting tables with simple tents, all necessary coordination and announcements and media coverage, etc. Priority will be given to project targeted farmers.
- 2.12 Prepare the follow up report for the success and lessons learnt from the festival events after one month from ending the festivals
- 2.13 Conduct a 2 day workshop for cooperatives partnerships, introduction to Fair Trade Networks (Palestinian and Arab) and business enhancement and prepare workshop minutes of meeting including list of attendees and their contacts, photos and recommendations
- 2.14 Prepare the follow up report for marketing progress of the selected cooperatives on yearly basis (years 2019 & 2020), based on evaluation survey for the cooperatives
- 2.15 Formulation of one committee for eco-tourism program from key stakeholders from local communities, MoTA directorate in Bethlehem Governorate, and others (40% females)
- 2.16 Study the Valley's path and identify the best places to mark the visitors' path; supported with specification for the marks and consultation of the relevant formulated committee
- 2.17 Conduct cleaning works and install 20 arrow signs, 20 plant-info signs and 2 maps with some volunteer works along the Valley's visitors' path
- 2.18 Prepare follow up report for the level of enhancement in tourism sector in targeted area
- 2.19 Provide four sub-grants (for 4000 (£) each) for four existing/initiated women business enterprises for marketing local products at four targeted localities based on consultation with eco-tourism committee, selection process, market selling business plans and after signing agreements with the initiatives. The project will support them with ideas and provide them with the required entrepreneurial and business coaching that enables them to develop their ideas into successful businesses
- 2.20 Prepare follow up and evaluation report for the progress of the initiated SMEs on yearly basis
- 2.21 Follow up report at end of the year; to measure impact of the project including generation of income, including outcomes of the other follow up surveys and evaluation reports (2.9, 2.12, 2.14, 2.18, and 2.20)



**Output 3: Raise awareness of and build capacities of local communities and stakeholders to better manage their natural resources, support conservation measures and benefit from sustainable agricultural and eco-tourism interventions while impacting the national legislation and involving both females and youth**

- 3.1 Conduct one-day workshop for key stakeholders to present the Valley's biodiversity management plans to be considered at legislative level. Gender inclusion.
- 3.2 Conduct four one-day workshop to enhance marketing networks, initiation of small business enterprises, and methods of governance, and protecting traditional knowledge for farmers and relevant cooperatives supported with educational material and gender inclusion
- 3.3 Conduct two-days workshop for alternative tourism operators and of the local targeted communities that works in the tourism sector; supported with educational material and gender inclusion.
- 3.4 Conduct four two-days training sessions for best sustainable farming practices, permaculture, organic farming and biological control for benefited farmers; supported with educational material, training evaluation, and gender inclusion
- 3.5 Conduct four two-days training sessions for best practices in conserving biodiversity and maintaining the eco-system services; supported with educational material, training evaluation, and gender inclusion
- 3.6 Conduct one-day training session for women entrepreneurs who has initiated their business selling points; supported with a business plan for each initiative, educational material, and training evaluation
- 3.7 Conduct two two-days food processing training sessions for women headed households; supported with educational material, and training evaluation.
- 3.8 Ten meetings for 5 schools located in Bethlehem District to present the project, the valley, raise environmental awareness, and create school environment clubs; supported with educational materials/modular, cooperation of MEHE, and gender inclusion
- 3.9 Finalized 10 modular that are based on project studies and in different project fields
- 3.10 Follow up report for the school environmental clubs at the selected schools
- 3.11 Disseminate up to 106 social media announcements, 15 newspaper news
- 3.12 Conduct 4 TV sessions to discuss on air the different subjects the project is dealing with and supporting. Specialists and decision makers will be invited.
- 3.13 Prepare a webpage for the project under the PIBS- BU website to present all project accomplishments, follow up reports, educational material, scientific research and publications
- 3.14 Prepare and Print brochure for the project area; includes a description, management plans, key area for conservation and restoration, touristic plan and potential business opportunities, guiding tour with a map (locating the visitors path, villages in proximity, selling points, etc.), guiding orientations for tourists with recommendations for best practices at the sites, etc.
- 3.15 Conduct follow up surveys for sample of local households (20%of total beneficiaries (of which 50% females); to measure impact of the project including environmentally sensitive practice
- 3.16 Progress reports every six month summarize the project achievements, on-going activities, success stories and evaluations; all supported with relevant verification means.
- 3.17 Final technical and financial audit reports. The technical part will describe the accomplishments of the projects, impacts (based on project follow up reports and surveys), facts and main findings, sustainable outputs, opportunities for development and building on, etc.

**Annex 2 Report of progress and achievements against final project logframe for the life of the project**

Project summary	Measurable Indicators	Progress and Achievements
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**Impact:** The semi-natural ecosystems of the southern areas of the West Bank are sustainably maintained with resultant enhancement of Biodiversity conservation, traditional agriculture practices, and socioeconomic development of local people.

This project proposed to help local communities sustainably maintain semi-natural ecosystems of the target area. This depended on research and knowledge of area biodiversity, conservation efforts (via education, and restoration), traditional agriculture practices, and socioeconomic development of empowered local people[1]. Socioeconomic status has been improved through supplying the farmers with agricultural inputs and building their capacities which resulted in enhancing their resilience. The Socioeconomic status of women has also been improved through the project support to women groups creating sustainable income generations SME's. The project has created a positive impact for >80 farmers in four communities, benefiting more than 500 individuals.

For evidence on this, see the impact evaluation report <https://bit.ly/3wLwQZD> and the agricultural report <https://bit.ly/2Wc6i6o>

<p><b>Outcome:</b> By 2021, the Palestinian communities' accessed benefits through valuation/conservation of their ecosystems, reviving traditional farming, and enhancing ecotourism activities at Al-Makhrour valley where at least 344 households will directly benefit</p>	<p>0.1 Baseline study of biodiversity covering the area of 2.6 km<sup>2</sup> core area (5 km<sup>2</sup> with buffer zones) then re-evaluation at end of three years shows preservation or increase of biodiversity (versus the decline that has been going on in the past few years)</p> <p>0.2 Number of households acting in environmentally sensitive ways around their homes increases to 30 households (average 6 members of each household) by the first year and then to 244 households (50% females) by year three.</p> <p>0.3 By year 3, at least 224 households 80 hh in farming - 50% females) including 80 hhs in festivals (50% females) and 40 hhs in food processing (100% females), 60hh running cooperatives (50% females), 12 hhs running market points (100% females), 32 hhs in eco-tourism (50% females) have developed income generating activities like sustainable agriculture, marketing and ecotourism activities and act as models in their communities</p>	<p>0.1 Baseline studies done for biodiversity covering the area of 2.6 km<sup>2</sup> core area (5 km<sup>2</sup> with buffer zones) then re-evaluated at the end of the project Desktop study. <a href="https://bit.ly/3rCSlu6">https://bit.ly/3rCSlu6</a> , plant study <a href="https://bit.ly/3xn3pO5">https://bit.ly/3xn3pO5</a> , fauna study <a href="https://bit.ly/3jxzTkC">https://bit.ly/3jxzTkC</a> , end line plant study <a href="https://bit.ly/3gJz9pu">https://bit.ly/3gJz9pu</a> , bird end line study <a href="https://bit.ly/3wKnHAr">https://bit.ly/3wKnHAr</a>. Reevaluation survey done <a href="https://bit.ly/3xWgnma">https://bit.ly/3xWgnma</a></p> <p>0.2 There is a considerable positive change relating to the behavior of households and community members towards more environmentally friendly practices on the level of farming activities, and on the level of biodiversity conservation importance, impact evaluation describing the change can be seen in <a href="https://bit.ly/3wLwQZD">https://bit.ly/3wLwQZD</a>.</p> <p>0.3 We did achieve the requisite training of 80 farmers. We can add to these 80 households, more than 100 households during the festival, &gt; 40 hh is women groups/cooperatives training, and &gt;100 through the various workshops held (like the biodiversity training workshop). While it was difficult to measure total impact, sampling of households were measured showing impact (<a href="https://bit.ly/3wLwQZD">https://bit.ly/3wLwQZD</a>). Farming practices were done through the whole supply chain of the agricultural activities and had good outcome in agricultural production (see<a href="https://bit.ly/3qHRBDo">https://bit.ly/3qHRBDo</a> ).</p> <p>0. 4 - Average percentage of the savings in spending of the household on buying vegetables in the season due to availability of the production was about 61%.</p>
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	<p>0.4 Sustainable agricultural productivity increases at targeted sites where vegetables production increases by 30% of yearly production (estimated between 18-22 tons for 40 dunums per year)</p> <p>0.5 By year 3, at least 10 modules of transferable knowledge are developed in a manner that would enhance conservation and sustainability</p> <p>0.6 Reduction of damaging human activities (hunting, logging, trash dumping) in the protected areas by 10% annually from baseline</p>	<ul style="list-style-type: none"> <li>- During implementing the project, all the farmers achieved self-sufficiency from their vegetables. Whereas 69% of the production was consumed by the households, 18% of the production was distributed as gifts to farmers' relatives and friends, and 13% of the production was sold.</li> <li>- Average percentage of the savings in the production inputs costs due to the production inputs provided by the project to the farmers (fertilizers, irrigation networks, seeds and seedlings, agricultural tools, etc.) was 71%.</li> <li>- Average of the increase in the crop productivity due to the use of permaculture practices was 22%.</li> <li>- All farmers agreed that the quality of the products was better and free from any chemical contaminants.</li> <li>- Because of the use of permaculture practices the average production costs decreased by about 36%. (see <a href="https://bit.ly/3qHRBDo">https://bit.ly/3qHRBDo</a> and Impact evaluation report <a href="https://bit.ly/3wLwQZD">https://bit.ly/3wLwQZD</a> .</li> </ul> <p>0.5 Educational Modules can be found at <a href="https://bit.ly/2UzPuW7">https://bit.ly/2UzPuW7</a></p> <p>0.6 Awareness campaigns and workshops, in addition to direct coaching from the project team have limited damaging behaviours considerable, for example; Before implementing the project, 15% of the farmers interviewed used Chemical fertilizers, 35% used both chemical fertilizers and unfermented animals manure, 45 used unfermented animals manure, and 5% did not use anything. While during implementing of the project and to now all the farmers used both natural fermented animals manure and compost. more details can be found on <a href="https://bit.ly/3wLwQZD">https://bit.ly/3wLwQZD</a> . There are other factors that affected this outcome relating to no control over the targeted area, as it is controlled by the occupation.</p>
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<p><b>Output 1. Inventory and assessment for biodiversity at both habitat and species level are conducted in order to consolidate the scientific data required to propose various forms of conservation management and protection within the project area</b></p>	<p>Up to 2.6 km<sup>2</sup> of Al-Makhrour valley is surveyed for its biodiversity components at both ecosystem and species levels. This includes 5 field trips/surveys covering the different seasons of the year (total 20 field trips per year). Comprehensive surveys in the first and updating for second project years (2018/2019, 2019/2020) and evaluation surveys in the third project year 2020.</p> <p>One ecosystem management plan will be developed for the whole valley using the CMP model (Conservation Measures Partnership, 2013) and IUCN relevant guidelines.</p> <p>Three priority habitats at the Valley, their conservation frameworks and restoration schemes were identified and designed with their assessments and monitoring data sets</p> <p>Four town-hall style meetings will be conducted for 40 community members for each targeted locality (total 160 local participants, 50% women) about plans of project development,</p>	<p>Surveys done through field work produced biodiversity reports that describe the fauna, flora, geology, ecosystems, &amp; habitats at the Valley as well as threats and drivers of change, conservation values and other data. Links to the reports are available in the activities sections but here are some  <a href="http://bit.ly/2plr7wc">http://bit.ly/2plr7wc</a> (plants beginning)  <a href="https://bit.ly/3qJz9pu">https://bit.ly/3qJz9pu</a> (plants final)  <a href="https://almakhrour.palestinenature.org/wp-content/uploads/2020/05/Annex-7-fauna-1.pdf">https://almakhrour.palestinenature.org/wp-content/uploads/2020/05/Annex-7-fauna-1.pdf</a>  - Database of monitoring indicators relating to selected species and habitat before and after project interventions are found here <a href="https://bit.ly/3xWgnma">https://bit.ly/3xWgnma</a>  - Nine publications in scientific journals utilizing data of biodiversity in the targeted areas have been conducted. Please see Annex 5</p> <p>The biodiversity conservation plan and a report that describes the management plan for the Valley, considering both the landscape, socio-ecological systems, and climate change aspects to be handed to relevant decision makers and stakeholders. See <a href="https://bit.ly/3kSySnN">https://bit.ly/3kSySnN</a> &amp; the plan was adopted by the Ministry of tourism and antiquities to be incorporated in a UNESCO world heritage site (<a href="https://whc.unesco.org/en/list/1492">https://whc.unesco.org/en/list/1492</a>)</p> <p>Despite the pandemic crisis, the project team side by side with the consultants achieved this activity. Based on ecological and biological parameters obtained earlier like fauna and flora inventories and habitat analysis, the project team cultivated natural native trees in degraded or abandoned lands in areas of high conservation value. Please see the link to the final restoration report <a href="https://bit.ly/3eW1W8C">https://bit.ly/3eW1W8C</a>.</p> <p>Four town hall meetings in the four communities for planning the project were carried out. Summary and evidence of this can be found at <a href="https://bit.ly/2SvPHJq">https://bit.ly/2SvPHJq</a></p>
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	SWOT analysis for key challenges, environmental remedies and ecological economic potentials	
<b>Activities under Output 1</b>		<b>Indicators achieved/achievements</b>
Activity 1.1 Analyze literature for national and global relevant research documents.		The desktop study can be found here: <a href="https://bit.ly/3rCSlu6">https://bit.ly/3rCSlu6</a>
Activity 1.2 Initial town-hall style meetings for community members in each targeted locality.		Four town hall meetings in the four communities for planning the project were carried out. Summary and evidence of this can be found at <a href="https://bit.ly/2SvPHJq">https://bit.ly/2SvPHJq</a>
Activity 1.3 Conduct biodiversity inventory for Al-Makhrour valley; including comprehensive surveys for ecosystem, habitats and species		The process had been with the follow up of the PMNH project team and the inventory was done through implementing scientific methodologies and approaches for surveying plant species on site, while investigating their habitats, their supporting abiotic elements such as soil, and topography of the site, etc. Links to all reports here <a href="http://bit.ly/2plr7wc">http://bit.ly/2plr7wc</a> (flora beginning) <a href="https://bit.ly/3gJz9pu">https://bit.ly/3gJz9pu</a> (flora final) <a href="https://almakhrour.palestinenature.org/wp-content/uploads/2020/05/Annex-7-fauna-1.pdf">https://almakhrour.palestinenature.org/wp-content/uploads/2020/05/Annex-7-fauna-1.pdf</a> ( <a href="https://bit.ly/3wKnHAr">https://bit.ly/3wKnHAr</a> (fauna final combined)

Activity 1.4 Prepare baseline evaluation report for ecosystem/biodiversity status at Al-Makhrou Valley (conducted during spring year 2019)	Key habitats with maps and tables of data were formulated. Follow up and feedback/refinement was done by working with consultants and experts. The main threats and human interferences were also recorded as seen on site. Biodiversity conservation plan finalized/adopted <a href="https://bit.ly/3kSySnN">https://bit.ly/3kSySnN</a> including targets (see <a href="https://bit.ly/3iKgKtE">https://bit.ly/3iKgKtE</a>
Activities 1.5 & 1.6 Establish ecology, biodiversity, monitoring databases linked to project webpage (the indicators will be linked to specified area blocks along the valley and specified species population).	The biodiversity committee consists of key local experts with some outside consulting of scientists. It consisted of Mohamad Mahasna (Environmental Quality Authority,) Prof. Mazin Qumsiyeh (BU), Elias Handal (BU), Dr. Anyton Khallieh (Bird Expert), Dr Rami Arafah (PPU), Roubina Ghattas (PCC). The committee held more than 4 meetings during the period of this report. The desktop study and new data (links provided above) were used as raw data for this work. The biodiversity committee met numerous times (example evidence <a href="https://almakhrou.palestinenature.org/wp-content/uploads/2020/05/Biodiversity-Committee.pdf">https://almakhrou.palestinenature.org/wp-content/uploads/2020/05/Biodiversity-Committee.pdf</a> ). The monitoring databases can be viewed at <a href="https://bit.ly/3xWgnma">https://bit.ly/3xWgnma</a>
Activities 1.7 & 1.8 Prepare biodiversity management plan for the Valley & Identify key sensitive habitats along the valley and set their conservation frameworks and restoration schemes	Biodiversity conservation plan finalized/adopted <a href="https://bit.ly/3kSySnN">https://bit.ly/3kSySnN</a> including targets (see <a href="https://bit.ly/3iKgKtE">https://bit.ly/3iKgKtE</a>
Activities 1.9 to 1.10 Submit conservation plan, establish a committee, communicate the plan	The text was then approved by the Environment Quality Authority and the Ministry of Tourism and Antiquities and amended to the site management plan of this UNESCO world heritage site ( <a href="https://whc.unesco.org/en/list/1492/">https://whc.unesco.org/en/list/1492/</a> ). Record of meetings at <a href="https://bit.ly/2U90UQI">https://bit.ly/2U90UQI</a>
Activity 1.11 Restore up to max. 3 Donums of key habitats where found necessary, the method for restoration will be decided based on the type of pressures and threats affecting the sites.	Based on ecological and biological parameters obtained earlier like fauna and flora inventories and habitat analysis, the project team cultivated natural native trees in degraded or abandoned lands in areas of high conservation value. Please see link of final restoration report <a href="https://bit.ly/3zBOZKG">https://bit.ly/3zBOZKG</a>

Activity1.12 End line surveys		Implemented and has been implemented using and expanding the indicators that have been used in the baseline studies already done at the beginning of this project Links can be found here <a href="https://bit.ly/3wLwQZD">https://bit.ly/3wLwQZD</a> , bird survey at <a href="https://bit.ly/3wKnHAr">https://bit.ly/3wKnHAr</a> & fauna Monitoring indicators are at <a href="https://bit.ly/3xWgnma">https://bit.ly/3xWgnma</a> (birds at <a href="https://bit.ly/3wKnHAr">https://bit.ly/3wKnHAr</a> )
Activity 1.13 Three to five Publications		We published at least 9 publications as a result of this work. Representative publications can be seen at <a href="https://almakhrour.palestinenature.org/?s=publications">https://almakhrour.palestinenature.org/?s=publications</a> )
Activity 1.14 Follow-up report end of project year 3		Reporting is operational and on due times, in addition you can see impact evaluation complete report at <a href="https://bit.ly/3wLwQZD">https://bit.ly/3wLwQZD</a>
<b>Output 2: Economic benefits to the local communities; including women and youth, in proximity to Al-Makhrour Valley are secured through sustainable agriculture and eco-tourism enhancement</b>	<p>Evidence of 4 agriculture committees formed &amp; functioning</p> <p>Evidence of and # women and youth training and empowerment</p> <p>80 Farmers recruited and evidence of empowerment and training and help them in marketing (via festival and selling points)</p>	Accomplished (evidence under activities)
	<p>By year 2 (2019), 40 dunums for 80 farmers (50% women farmers) will be provided green agriculture inputs including 56,000 meters of irrigation pipes (1400m/1dunum), 80 water tanks (1cubic meter), 80 pumps (1 horsepower), 44,000 vegetable</p>	<p>Formulated one committee for the traditional farming program from key stakeholders from local communities, MoA directorate in Bethlehem Governorate, and others (40% females). evidence in activities.</p> <p>Announced and invited farmers to apply for the selection process for the agriculture intervention.</p> <p>Applications made by farmers from targeted villages/towns and processed .</p> <p>Inspection field visits for samples of farmers implemented before signing MoUs.</p>

	seedlings (1100seedling/dunum) or 240kg seeds (6kg/dunum), 2000 sacks of organic compost (50 sacks/dunum).	<p>List of selected farmers prepared.</p> <p>Signed MoUs with the selected 80 farmers.</p> <p>Order of purchase for agricultural inputsimplemented for the seasons of the project.</p> <p>4 Field visit reports per farmer per season (640 visit/year).</p> <p>Evaluation report for vegetables production (expected to produce 1500-2000 kg/dunum), Done.</p> <p>Project progress reports (one every six months); from September 2018 to February 2021, had been furnished and submitted all on due dates.</p> <p>Evidence of the above is all indicated per measurable indicators relating to activities below.</p>
	2.2 A two-day workshop for 20 cooperatives (10 productive coop – at least 3 members each (sell local fresh and processed local products) and 10 consumption coop – at least 3 members each (buy local fresh and processed products)) to build marketing networks and partnerships (contacts will be exchanged).	<p>Workshop's invitations sent and announced.</p> <p>List of attendees and their contacts prepared.</p> <p>Minutes of meeting and photos documented.</p> <p>Evaluation sheets filled by attendees.</p> <p>Follow up report for marketing progress done yearly (years 2019 &amp; 2020), <i>Not Well implemented but justified in the activities section.</i></p> <p>Project progress reports (one every six months); from September 2018 to February 2021, had been furnished and submitted all on due date</p> <p>Evidence of the above is all indicated per measurable indicators relating to activities below.</p>
	2.3 Two market festivals for Al-Makhrour local products; 40 local farmers/festival (50% female farmers); one selling summer agro-produce (June or July 2019) and the second selling winter agro-produce (February or March 2020)	<p>Fees for renting a venue and for the first festival.</p> <p>Ordered and purchased goods for setting the festival (tents, chairs &amp; tables, packaging material)</p> <p>List of farmers participating at each festival, prepared.</p> <p>Field visit reports and photos documented.</p> <p>Follow up report for the progress and impact of the festivals, report and lessons learnt prepared.</p> <p>Project progress reports (one every six months); from September 2018 to February 2021 was furnished and submitted all on due date</p> <p>Evidence of the above is all indicated per measurable indicators relating to activities below.</p>

	<p>2.4 Mark the Al-Makhroul visitors path by installing 20 arrow signs, 20 plant-info signs and 2 maps with some volunteer cleaning works along the Valley's trail.</p>	<p>Formulated one committee for eco-tourism program from key stakeholders from local communities, MoTA directorate in Bethlehem Governorate, and others (40% females).</p> <p>Specifications and order of purchase for signs, and maps Prepared However <i>the arrow signs were done as informative signs, and not 20 but 7 as explained in the activities section..</i></p> <p>Field visit report for installation and cleaning works at Al-Makhroul valley including photos documented.</p> <p>Project progress reports (one every six months); from September 2018 to February 2021 was furnished and submitted all on due date</p> <p>Evidence of the above is all indicated per measurable indicators relating to activities below.</p>
	<p>2.5 Four sub-grants for 4000 (£) each are given to four existing/initiated women business enterprises (an average 3 women members per enterprise) for market local products at four targeted localities</p>	<p>Announcements at local authorities for the sub-grant were made.</p> <p>Application forms for sub-grant requests were filled and submitted by women.</p> <p>Evaluation reports for selection were done to document the process and to ensure the integrity and governance of the process.</p> <p>List of 12 women for initiating business selling points (each 3 will start a selling point at their village), <i>Women beneficiaries had been at least 20 for this item but via four women cooperatives.</i></p> <p>Signed MoUs with women to start the four initiatives.</p> <p>Four market selling points' business plans for marketing the valley's agricultural and cultural and touristic products, <i>The selling points had been converted from the valley due to the pandemic and limitation of tourism , and converted to mobile shelves and marketing materials as elaborated in the activities section.</i></p> <p>Government registration certificates, <i>two already have certificates, Beit Jala and Battir, however Al-Walajah and Husan don't have the certification.</i></p> <p>Follow up reports every year to measure the success of this initiative. not completely done because of the pandemic as explained in the activities section.</p> <p>Project progress reports (one every six months); from September 2018 to February 2021, had been furnished and submitted all on due date</p> <p>Evidence of the above is all indicated per measurable indicators relating to activities below.</p>

Activities under Output 2	Indicators achieved/achievements
Activity 2.1. Formulation of one committee for traditional farming program from key stakeholders	Formulated and has been operational , See the following link for the committees' details <a href="https://bit.ly/3qqvi4W">https://bit.ly/3qqvi4W</a>
Activities 2.2 – 2.4 Prepare and distribute announcement invitation to local – selection process of farmers	All activities are completed. Details & names can be found at <a href="https://bit.ly/3zAjcdO">https://bit.ly/3zAjcdO</a> .
Activity 2.5 Purchase agricultural inputs for 40 dunums for both agricultural summer/winter seasons 2019 and summer/winter seasons 2020	See agricultural report: <a href="https://bit.ly/2Wc6i6o">https://bit.ly/2Wc6i6o</a>
Activity 2.6. Land preparations, weed removal and organic compost additions for selected land-farms .	At least 1000 field visits to farmers were performed during the three years of the project. Different areas had different challenges which are summarized in this link <a href="http://bit.ly/2JpNs2z">http://bit.ly/2JpNs2z</a> .
Activity 2.7 Distribution of agricultural inputs	For the first and second years see <a href="https://bit.ly/369RBCR">https://bit.ly/369RBCR</a> For the third year there have been two distributions despite the pandemic situation, details of quantities and numbers can be found in <a href="https://bit.ly/3jeh99w">https://bit.ly/3jeh99w</a> Each farmer received his/ her sharing of the seeds and or the seedlings depending on a prepared label that holds the farmer name and the exact amount of seedlings and weight of seeds and bulbs. <i>See the following Update on the details of the distribution of the last year</i> <a href="https://bit.ly/3ycfx4t">https://bit.ly/3ycfx4t</a> . more detailed at <a href="https://bit.ly/2Wc6i6o">https://bit.ly/2Wc6i6o</a>
Activity 2.8 Conduct 4 follow up field visits per farmer per season (320 visit/ season), supported with report	Field visits had been the running engine of the project, please refer to the activities section for samples pictures of the visits. Also can be seen on <a href="http://bit.ly/2JpNs2z">http://bit.ly/2JpNs2z</a> . more detailed at <a href="https://bit.ly/2Wc6i6o">https://bit.ly/2Wc6i6o</a>
Activity 2.9 Conduct two cross village exchange and demonstration visits (during first three cultivation seasons)	Implemented successfully. Full report at <a href="https://bit.ly/3dZIObW">https://bit.ly/3dZIObW</a> and photos at <a href="https://bit.ly/2UkGWmc">https://bit.ly/2UkGWmc</a>



Activity 2.10 Evaluation report for summer /winter vegetables production	Vegetable production, relating to areas and quantities, can be found at <a href="https://bit.ly/3qHRBDo">https://bit.ly/3qHRBDo</a> and details of the last production season observed by the project can be found at <a href="https://bit.ly/3xSpcga">https://bit.ly/3xSpcga</a>
Activity 2.11. Conduct first /second festival during harvesting period of summer/winter cultivation seasons	The first festival had been conducted successfully. Photos can be found at <a href="https://bit.ly/2U7so92">https://bit.ly/2U7so92</a> and <a href="https://bit.ly/3qu1PXS">https://bit.ly/3qu1PXS</a> . The second festival implementation was stopped because of the covid19 pandemic and will have been changed to the following activities as attached in the change request. <a href="https://bit.ly/2U9aqmx">https://bit.ly/2U9aqmx</a> , other marketing activities evidence can be found at Samples. Photos can be found at <a href="https://bit.ly/2U7so92">https://bit.ly/2U7so92</a> and <a href="https://bit.ly/3qu1PXS">https://bit.ly/3qu1PXS</a> .
Activity 2.12. Prepare the follow up report for the success and lessons learnt from the festival events	The report and lessons learned from it can be found here <a href="https://bit.ly/3dIGL0p">https://bit.ly/3dIGL0p</a>
Activity 2.13. 2-day workshop for cooperatives' partnerships and business enhancement	A two-day' workshop about cooperatives' partnerships and business enhancement was conducted on 11 + 12 June 2019 at PMNH premises, for evidence please refer to the activities section.
Activity 2.14. Prepare the follow up report for marketing progress of the selected cooperatives on yearly basis	First festival report was done under activities and products marketed well, see <a href="https://bit.ly/3dIGL0p">https://bit.ly/3dIGL0p</a> . Second festival was not done and we did change to marketing points which were implemented in the last two months of the project (due to COVID19 delays) so marketing success will not be available till later.
Activity 2.15. Formulation of one committee for eco-tourism program from key stakeholders from local communities	The committee had been established and this had been reported in earlier report, see link, <a href="http://bit.ly/2BNNr4a">http://bit.ly/2BNNr4a</a> The expert with the committee created an ecotourism business plan <a href="https://bit.ly/3kRQSyr">https://bit.ly/3kRQSyr</a> and targeted business plans For communities: Walaja <a href="https://bit.ly/3y4YAt5">https://bit.ly/3y4YAt5</a> , Battir <a href="https://bit.ly/3y4OFDv">https://bit.ly/3y4OFDv</a> , Beit Jala <a href="https://bit.ly/3BFdvME">https://bit.ly/3BFdvME</a> , Husan <a href="https://bit.ly/36Wy9d4">https://bit.ly/36Wy9d4</a>
Activity 2.16. Study the Valley's path and identify the best places to mark the visitors' path	Pictures of the path are in the activities section

Activity 2.17. Conduct cleaning works and install signs		<a href="https://www.facebook.com/PIBS.PMNH/posts/2236083246670202">https://www.facebook.com/PIBS.PMNH/posts/2236083246670202</a> Original signs can be viewed at. <a href="https://bit.ly/2TaXcG5">https://bit.ly/2TaXcG5</a> Signs were installed but vandalized partially please see <a href="https://bit.ly/3jqVif2">https://bit.ly/3jqVif2</a> , however they were reinstalled.
Activity 2.18. Follow up report for the level of enhancement in tourism sector in targeted area		Please see <a href="https://almakhrou.palestinenature.org/wp-content/uploads/2020/05/Annex-14-Tourism-Business-plan.pdf">https://almakhrou.palestinenature.org/wp-content/uploads/2020/05/Annex-14-Tourism-Business-plan.pdf</a> . As noted though implementation by the stakeholders await return of tourism. See also this discussion <a href="https://bit.ly/3hsObPv">https://bit.ly/3hsObPv</a> .
Activities 2.19 & 2.20. Women empowerment via SMEs		This activity was done successfully and the report on it can be found at <a href="https://bit.ly/2UaQmAz">https://bit.ly/2UaQmAz</a>
Activity 2.21 Reporting:		Reports had been all delivered before the due date.
<b>Output 3: Raise awareness of and build capacities of local communities and stakeholders to better manage their natural resources, support conservation measures and benefit from sustainable agricultural and eco-tourism interventions while impacting the national legislation and involving both females and youth</b>	3.1 One day workshop for 20 main stakeholders from targeted localities, governmental bodies mainly EQA, MoA, and MoTA and media to present the Valley's biodiversity management plans to be considered at legislative level.	Workshop's invitation, agenda, presentation, and distributed document (biodiversity plan report prepared by the project earlier), done. Minutes of meeting including photos, list of attendees, documented. Pre and post evaluation reports reflecting on the knowledge base concerning the status of biodiversity at targeted areas and the stakeholders' willingness to adopt the plan and implement it later on the ground. done Project progress reports (one every six months); from September 2018 to February 2021 were furnished and submitted all on due date  Evidence of the above is all indicated per measurable indicators relating to activities below.

	<p>3.2 Four 1-day workshop to emphasize marketing networks, initiation of small business enterprises, and methods of governance and of sustaining their businesses for farmers and relevant cooperatives</p>	<p>Workshop's invitation, agenda, presentation, and educational material, documented. Minutes of meeting including photos, list of attendees, done. Pre and post evaluation reports reflecting on the knowledge base of participants in relevant aspects and highlighting the benefits they gained from this workshop in their business, Done. Project progress reports (one every six months); from September 2018 to February 2021, had been furnished and submitted all on due date</p> <p>Evidence of the above is all indicated per measurable indicators relating to activities below.</p>
	<p>3.3 Four 2-days training sessions for best sustainable farming practices (organic, permaculture, managing the farm, etc.) (80 farmers in total, 50% women, 20 farmers per workshop)</p>	<p>Training invitation, agenda and presentation (including training material), Done Pre and post evaluation reports reflecting on the knowledge base of participants in relevant aspects; highlighting the benefits they gained from this training in their farming practices, Done Documented attendees, educational material, photos, Project progress reports (one every six months); from September 2018 to February 2021, had been furnished and submitted all on due date</p> <p>Evidence of the above is all indicated per measurable indicators relating to activities below.</p>
	<p>3.4 Four 2-days training sessions for best practices in conserving biodiversity and maintaining the ecosystem services (theoretical and practical at the valley) (60hhs in total, 15 hhs per village) (50% women)</p>	<p>Training invitation, agenda and presentation (including training material), Done Pre and post evaluation reports reflecting on the knowledge base of participants in relevant aspects; the level of valuation for biodiversity and the importance of tis conservation at targeted area, and best practices to conduct conservation practices, done Documented list of attendees, educational material, photos. Project progress reports (one every six months); from September 2018 to February 2021, had been furnished and submitted all on due date Evidence of the above is all indicated per measurable indicators relating to activities below.</p>

	<p>3.5 One-day training session for women entrepreneurs who has initiated their business selling points during the project (12 women in total)</p>	<ul style="list-style-type: none"> <li>• Training invitation, agenda and presentation, done</li> <li>• Business plan for each selling point, designed and presented.</li> <li>• Pre and post evaluation reports reflecting on the knowledge base of participates in relevant aspects; highlighting the benefits they gained from this training in their business, done</li> <li>• list of attendees, educational material, photos, documented.</li> <li>• Project progress reports (one every six months); from September 2018 to February 2021, had been furnished and submitted all on due date</li> </ul> <p>Evidence of the above is all indicated per measurable indicators relating to activities below.</p>
	<p>3.6 Two 2-days food processing training sessions for women headed households (one in first year 2019 and one in second year 2020 of the project) (40 women in total, 5hhs/village/year, (100% women))</p>	<p>Training invitation, agenda and presentation (theoretical session), implemented</p> <p>Order of purchase for food processing tools, done</p> <p>Pre and post evaluation reports reflecting on the knowledge base of participates in relevant aspects; highlighting the benefits the women gained from this training especially in terms of quality control and good packaging, done</p> <p>Documented list of attendees, educational material, photos,</p> <p>Project progress reports (one every six months); from September 2018 to February 2021, had been furnished and submitted all on due date</p> <p>Evidence of the above is all indicated per measurable indicators relating to activities below.</p>
	<p>3.7 Two-days workshop for alternative tourism operators (10 representatives – 2 persons each) and 12 representatives of the local communities (3 members per locality) that works in the tourism sector (50% women)</p>	<p>Workshop invitation, agenda, list of invitees and educational material in best method for successful ecotourism plan and business enterprises, Implemented.</p> <p>Tourism business plan for the valley is set by both parties (tourism operators and local communities with benefit sharing concept), Designed.</p> <p>Pre and post evaluation reports reflecting on the knowledge base of participates in relevant aspects; highlighting the benefits they gained from this workshop in their business, done</p> <p>Documented list of attendees and their contacts,</p> <p>Minutes of meeting and photos, documented</p> <p>Follow up report for eco-tourism progress done yearly (years 2019 &amp; 2020) <i>NOT Implemented due to the pandemic and explained in the activities section.</i></p> <p>Project progress reports (one every six months); from September 2018 to February 2021, had been furnished and submitted all on due date</p> <p>Evidence of the above is all indicated per measurable indicators relating to activities below.</p>

	<p>3.8 Ten meetings for 5 schools located in Bethlehem District to present the project, the valley, raise environmental awareness, and create school environment clubs (20 students each, 50% females).</p>	<ul style="list-style-type: none"> <li>Letter of cooperation from Ministry of Education and higher Education (MEHE) done.</li> <li>Letter of invitation for the schools, done.</li> <li>Educational material and modular, done.</li> <li>Meetings minutes of meetings, photos, list of students</li> <li>Schools' environmental clubs evaluation and follow up reports</li> <li>project progress reports (one every six months); from September 2018 to February 2021, had been furnished and submitted all on due date</li> </ul> <p>Evidence of the above is all indicated per measurable indicators relating to activities below.</p>
	<p>3.9 At least 106 social media announcements, 15 newspaper news, and 4 TV sessions, a website for the valley will be disseminated.</p>	<ul style="list-style-type: none"> <li>The announcements and news documented in progress reports,</li> <li>fees for newspapers, development of the website and TV sessions upon bidding procedure).</li> </ul> <p>Evidence of the above and links are all indicated per measurable indicators relating to activities below.</p>
Activities under Output 3		Indicators achieved/achievements
<p>Activity 3.1 Conduct one-day workshop for key stakeholders to present the Valley's biodiversity management plan</p>		<p>The biodiversity conservation management plan (<a href="https://bit.ly/3awVv8s">https://bit.ly/3awVv8s</a>) was presented 11 February 2020 in a large conference at the auditorium of Bethlehem University to stakeholders including the Ministry of Tourism, Environmental Quality Authority, and Ministry of Agriculture. around 50 participants from related institutions, scientists, &amp; community members, attended. It was followed on 12 February by a scientific workshop on biodiversity (attended by 18). You can also see the agenda of both the conference and the workshop that followed here <a href="https://www.facebook.com/PIBS.PMNH/posts/2528852917393232">https://www.facebook.com/PIBS.PMNH/posts/2528852917393232</a></p>

Activity 3.2 Conduct four one-day workshop to enhance marketing networks	Two workshops were held in 2020 and two in 2021. Evaluation and other data show that people learned much from these (see link <a href="https://bit.ly/3AcaWRC">https://bit.ly/3AcaWRC</a> ).
Activity 3.3 Conduct two-days' workshop for alternative tourism operators	Activity implemented October 29 and November 20 of 2020, Please see details on the report <a href="https://bit.ly/3qy1R0M">https://bit.ly/3qy1R0M</a>
Activity 3.4 Conduct four two-days training sessions for best sustainable farming practices, permaculture, organic farming	This activity was implemented via four workshops by Alice Gray (Byspokes) in Husan, Battir, Al Wallajah and Beit Jala. on the dates of 20, 21, 22, 23 of March 2019. See <a href="https://youtu.be/OrCsh1t4aKs">https://youtu.be/OrCsh1t4aKs</a> . During the third year the permaculture training was implemented by a local consultant recommended by our UK partner Byspokes due to travel restrictions. The full report is at <a href="https://bit.ly/2U7NrIG">https://bit.ly/2U7NrIG</a>
Activity 3.5 Conduct four two-days training sessions for best practices in conserving biodiversity	Please refer to activities section for details and see Please see pictures of the earlier activities at <a href="http://bit.ly/2q1SH1k">http://bit.ly/2q1SH1k</a> & <a href="http://bit.ly/335Ea3H">http://bit.ly/335Ea3H</a>
Activity 3.6 Conduct one-day training session for women entrepreneurs	A one day workshop about <b>Selling Point</b> was conducted on Monday 9 December 2019 at ICP main building, Report can be viewed at <a href="https://bit.ly/364Gyuu">https://bit.ly/364Gyuu</a> .
Activity 3.7 Conduct two two-days food processing training sessions	Please refer to the activities section for the second year training and please see the report of the third year training on <a href="https://bit.ly/3xeagck">https://bit.ly/3xeagck</a>
Activity 3.8 Ten meetings for 5 schools located in Bethlehem District to present the project, the valley	Five schools were visited on the dates in Husan 16/10/2019, Battir 22/10/2019 and girls 23/10/2019, Al-Walajah (mixed) 28/20/2019, Beit Jala (Girls) 29/10/2019. The total of students attended were 133 (>50 female), see <a href="https://bit.ly/3gXAs5g">https://bit.ly/3gXAs5g</a>



Activity 3.9 Finalized 10 modular that are based on project studies	Selected educational modules can be found at <a href="https://bit.ly/2UzPuW7">https://bit.ly/2UzPuW7</a>
Activity 3.11 Disseminate up to 106 social media announcements, 15 newspaper (mainstream) news	Please refer to details in the activities section
Activity 3.12 Conduct 4 TV sessions to discuss on air the different subjects the project is dealing with and supporting.	<p>First episode about Biodiversity &amp; sustainability <a href="https://youtu.be/g_gUgIWGhtM">https://youtu.be/g_gUgIWGhtM</a></p> <p>Second Episode about biodiversity conservation <a href="https://youtu.be/TIJ_lafq-YQ">https://youtu.be/TIJ_lafq-YQ</a></p> <p>Third episode about community farmers &amp; Nature <a href="https://youtu.be/2CFXt_h2JQM">https://youtu.be/2CFXt_h2JQM</a></p> <p>Fourth episode about community enhancement <a href="https://youtu.be/3FPcR9kPw">https://youtu.be/3FPcR9kPw</a></p> <p>Many more videos can be seen on the activities section.</p>
Activity 3.13 Prepare a webpage for the project under the PIBS- BU website to present all project accomplishments	The website is operational and is being updated periodically, the website is going to be restricted and renewed for the coming month. The link <a href="https://almakhrour.palestinenature.org">https://almakhrour.palestinenature.org</a>
Activity 3.14 Prepare and Print brochure for the project area	Brochure produced version can be seen at <a href="https://bit.ly/3qtT5Rw">https://bit.ly/3qtT5Rw</a> .
Activity 3.15 Conduct follow up surveys for sample of local households.	Our studies indeed show an impact on household (see <a href="https://bit.ly/3wLwQZD">https://bit.ly/3wLwQZD</a> sample of data below on biodiversity awareness)
Activity 3.16 & Activity 3.17 Progress reports and Final technical and financial audit reports	Reporting had been implemented accordingly.



### Annex 3 Standard Measures.

Cod e	Description	Total	Nationalit y	Gende r	Title or Focus	Languag e	Comments
<b>Training Measures</b>							
1a	Number of people to submit PhD thesis	none					
1b	Number of PhD qualifications obtained	none					
2	Number of Masters qualifications obtained	3	Palestine	Female	Tourism and management in areas at or near the bvalley	Arabic	
3	Number of other qualifications obtained	18	Palestine	10 F, 8 M	Diploma offered in tourism	Arabic	
4a	Number of undergraduate students receiving training	150	Palestine	85 F & 65 M	Capacity Building, Biodiversity, Agriculture, Tourism, & Marketing	Arabic	Include school and some university students (see rel. activities)
4b	Number of training weeks provided to undergraduate students	Usually 2-3 hours each session	Palestine				
4c	Number of postgraduate students receiving training (not 1-3 above)	6	Mixed	3 F, 3 M	Master, doctorate and postdoctorat e training	Arabic and English	One produced a paper in press (Emily Mourad-

							Hanna et al. see Annex 5)
4d	Number of training weeks for postgraduate students	3-8	“	“	“	“	“”
5	Number of people receiving other forms of long-term (>1yr) training not leading to formal qualification (e.g., not categories 1-4 above)	81+	Palestinian farmers	mix	farming, permaculture	Arabic	continuous coaching for benefitting 81 farmers + occasionally relatives
6a	Number of people receiving other forms of short-term education/training (e.g., not categories 1-5 above)	Hundreds	Palestinian	mix	nature tourism and visits to museum where valley biodiversity was discussed	Arabic and English	
6b	Number of training weeks not leading to formal qualification	short term usually 2-3 hours per group	“	“	“	“	
7	Number of types of training materials produced for use by host country(s) (describe training materials)	Many including educational modules and farmer manual				Arabic and English	
<b>Research Measures</b>		<b>Total</b>	<b>Nationality</b>	<b>Gender</b>	<b>Title</b>	<b>Language</b>	<b>Comments/ Weblink if available</b>

9	Number of species/habitat management plans (or action plans) produced for Governments, public authorities or other implementing agencies in the host country (ies)	1	Palestine	N/A	Biodiversity Conservation Plan	English	<a href="https://bit.ly/3kSySnN">https://bit.ly/3kSySnN</a>
10	Number of formal documents produced to assist work related to species identification, classification and recording.	Dozens	Palestine	N/A	Include collecting, observation, monitoring documents	English	Given under respective activities
11a	Number of papers published or accepted for publication in peer reviewed journals	8	Mixed	mix authors	see annex 5	English	Annex 5 & more coming
11b	Number of papers published or accepted for publication elsewhere	1	Palestine	Male	Biodiversity and Environmental Conservation in Palestine	English	<a href="https://bit.ly/3w3ROSe">https://bit.ly/3w3ROSe</a>
12a	Number of computer-based databases established (containing species/generic information) and handed over to host country	3				English	see <a href="http://almakhrour.palestinenature.org">almakhrour.palestinenature.org</a>
12b	Number of computer-based databases enhanced (containing species/genetic information) and handed over to host country						
13a	Number of species reference collections established and handed over to host country(s)	4 (>2000 specimens)	N/A	N/A	Fauna and flora collections	N/A	Herbarium (>400 sam.), mammals, reptiles, invertebrates
13b	Number of species reference collections enhanced and handed over to host country(s)						

Dissemination Measures		Total	Nationality	Gender	Theme	Language	Comments
14a	Number of conferences/seminars/workshops organised to present/disseminate findings from Darwin project work	4	Palestinian	40% females 60% males		Arabic/rarely English	see relevant educational activities
14b	Number of conferences/seminars/ workshops attended at which findings from Darwin project work will be presented/ disseminated.	>80 events	mix	mix	Biodiversity & human diversity	mix	Prof Qumsiyeh lectures abroad and locally in these 3 years including in the UK Jan 2020

Physical Measures		Total	Comments
20	Estimated value (£s) of physical assets handed over to host country(s)	>40,000	Include agricultural inputs that are fixed (like water tanks and tools etc), two computers, other field equipment
21	Number of permanent educational, training, research facilities or organisation established	1	The center of biodiversity that began expanding under this grant and is now fully equipped (thanks to new EU funding)
22	Number of permanent field plots established	1	Restored 3 dunum area plus the enhanced 81 farms

Financial Measures		Total	Nationality	Gender	Theme	Language	Comments
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23	Value of additional resources raised from other sources (e.g., in addition to Darwin funding) for project work <i>(please note that the figure provided here should align with financial information provided in section 9.2)</i>	771300	Palestine	NA	Biodiversity and Human Diversity	NA	These are ongoing projects of relevance that extend or expand on DI funding
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## Annex 4 Aichi Targets

	<b>Aichi Target</b>	<b>Tick if applicable to your project</b>
1	People are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably.	X
2	Biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems.	X
3	Incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed in order to minimize or avoid negative impacts, and positive incentives for the conservation and sustainable use of biodiversity are developed and applied, consistent and in harmony with the Convention and other relevant international obligations, taking into account national socio economic conditions.	X
4	Governments, business and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe ecological limits.	X
5	The rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced.	
6	All fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that overfishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits.	
7	Areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.	X
8	Pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity.	
9	Invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment.	
10	The multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning.	
11	At least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically	

	representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes.	
12	The extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.	X
13	The genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives, including other socio-economically as well as culturally valuable species, is maintained, and strategies have been developed and implemented for minimizing genetic erosion and safeguarding their genetic diversity.	
14	Ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable.	
15	Ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification.	X
16	The Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization is in force and operational, consistent with national legislation.	
17	Each Party has developed, adopted as a policy instrument, and has commenced implementing an effective, participatory and updated national biodiversity strategy and action plan.	
18	The traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation of indigenous and local communities, at all relevant levels.	X
19	Knowledge, the science base and technologies relating to biodiversity, its values, functioning, status and trends, and the consequences of its loss, are improved, widely shared and transferred, and applied.	X
20	The mobilization of financial resources for effectively implementing the Strategic Plan for Biodiversity 2011-2020 from all sources, and in accordance with the consolidated and agreed process in the Strategy for Resource Mobilization should increase substantially from the current levels. This target will be subject to changes contingent to resource needs assessments to be developed and reported by Parties.	

## Annex 5 Publications

Type (	Detail (Title, authors, year)	Nationality of Lead Author	Nationality of institution of lead author	Gender of Lead Author	Publishers (name, city)	Available from (e.g. weblink or publisher if not available online)
Journal	Status and distribution of the invasive Common Myna <i>Acridotheres tristis</i> in the West Bank, Palestine.  E. Handal, M.B. Qumsiyeh (2021)	Palestinian	Palestinian	Male	Sandgrouse (Bedfordshire, UK)	<a href="https://bit.ly/3y4UWyD">https://bit.ly/3y4UWyD</a>
Chapter in a Book	Biodiversity and Environmental Conservation in Palestine.  M.B. Qumsiyeh, M. Abusarhan (2021)  Book title: Biodiversity, Conservation and Sustainability in Asia. Vol1: Prospects and Challenges in West Asia and Caucasus edited by M. Öztürk, V. Altay, R. Efe.	Palestinian	Palestinian	Male	Publisher: Springer Nature (Switzerland).	<a href="https://bit.ly/3w3ROSe">https://bit.ly/3w3ROSe</a>
Journal	Agriculture connected to ecosystems and sustainability: A Palestine World Heritage Site as a case study.  C. McHugh, S. Shaheen, M.B. Qumsiyeh	American	Palestinian	Female	Submitted	--

Journal	An Environmental Nakba: The Palestinian Environment Under Israeli Colonization.  M.B. Qumsiyeh, M. Abusarhan (2020)	Palestinian	Palestinian	Male	Science for the People	<a href="https://bit.ly/3jntHv6">https://bit.ly/3jntHv6</a>
Journal	Macrofungi from the Hebron and Jerusalem Hills of Palestine.  M.T. Thaler, A. Al-Wahsh, A. Meuser, A. Rooks, M.B. Qumsiyeh (2020)	American	Palestinian	Transgender	Mycotaxon (Ithaca, New York, USA)	<a href="https://bit.ly/2SZ41Hd">https://bit.ly/2SZ41Hd</a>
Journal	Assessing long-term changes in the raptor fauna of the Fertile Crescent by reference to the nineteenth century works of Canon HB Tristram.  R. Saeed, M.B. Qumsiyeh (2020)	Palestinian	Palestinian	Female	Ornithological Society of the Middle East (Bedfordshire, UK)	<a href="https://bit.ly/2YU0Bt4">https://bit.ly/2YU0Bt4</a>
Journal	Protection of endangered ecosystems via museum research and education.  M.B. Qumsiyeh, Z. Amr (2020)	Palestinian	Palestinian	Male	Sharjah Museums Authority (Sharjah, UAE)	<a href="https://bit.ly/2Lz304R">https://bit.ly/2Lz304R</a>

Journal	First Record of the Western Conifer Seed Bug, <i>Leptoglossus occidentalis</i> Heidemann, 1910 (Hemiptera, Coreidae), from Palestine.  E. Handal, M.B. Qumsiyeh (2019)	Palestinian	Palestinian	Male	Jordan Journal of Biological Sciences (Zarqa, Jordan)	<a href="https://bit.ly/3bww6wg">https://bit.ly/3bww6wg</a>
Journal	Status and Conservation of the Striped Hyena ( <i>Hyena hyena</i> ) in the occupied Palestinian Territories (West Bank).  E. Handal, G.H. Qumsiyeh, S.Y. Hammash, M.B. Qumsiyeh (2019)	Palestinian	Palestinian	Male	Jordan Journal of Natural History	<a href="https://bit.ly/2SvkHJo">https://bit.ly/2SvkHJo</a>

## Annex 6 Darwin Contacts

<b>Ref No</b>	<b>25030</b>
<b>Project Title</b>	<b>Biodiversity Conservation and Community Development in Al-Makhroul Valley in Bethlehem, Palestine.</b>
<b>Project Leader Details</b>	
Name	<b>Prof. Mazin Qumsiyeh</b> <b>PIBS/PMNH, BU (( Palestine Institute of Biodiversity and Sustainability/ Palestine Museum of Natural History), (Bethlehem University ))</b>
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**Annex 7 Supplementary material (optional but encouraged as evidence of project achievement)**

[https://docs.google.com/document/d/1xLCQluJL57rZrT\\_TrnSdrdexyvwV-cA3UbeZKQZF2\\_o/edit?usp=sharing](https://docs.google.com/document/d/1xLCQluJL57rZrT_TrnSdrdexyvwV-cA3UbeZKQZF2_o/edit?usp=sharing)

## 7) Checklist for submission

	Check
<b>Is the report less than 10MB?</b> If so, please email to <a href="mailto:Darwin-Projects@ltsi.co.uk">Darwin-Projects@ltsi.co.uk</a> putting the project number in the Subject line.	Y
<b>Is your report more than 10MB?</b> If so, please discuss with <a href="mailto:Darwin-Projects@ltsi.co.uk">Darwin-Projects@ltsi.co.uk</a> about the best way to deliver the report, putting the project number in the Subject line.	No
If you are submitting photos for publicity purposes, <b>do these meet the outlined requirements (see section 10)?</b>	Y
<b>Have you included means of verification?</b> You should not submit every project document, but the main outputs and a selection of the others would strengthen the report.	Y
<b>Do you have hard copies of material you need to submit with the report?</b> If so, please make this clear in the covering email and ensure all material is marked with the project number. However, we would expect that most material will now be electronic.	No
Have you involved your partners in preparation of the report and named the main contributors	Y
Have you completed the Project Expenditure table fully?	Y
Do not include claim forms or other communications with this report.	