Final Project Completion Report

Project Title	Green Fodder Pilot Project
Organization:	United Society for Developing Water Resources and Environment (USDWE)
Reporting	June 15 – Dec 15, 2013

CEPF Region: **The Mediterranean Basin Biodiversity Hotspot**

Strategic Direction: **3. Improve the conservation and protection status of 44 priority key biodiversity areas, 3.3. Raise awareness of the importance of priority key biodiversity areas, including those that have irreplaceable plant and marine biodiversity**

Grant Amount: **$19,975**

Project Dates: **June 15, 2013 to December 15, 2013**

Implementation Partners for this Project (please explain the level of involvement for each partner):

Stakeholders have been involved thorough the following steps:

1. The project partnered relevant association at Faqou village which is Faqou Agricultural Cooperative Association for breeding sheep. The project was planned and implemented so far in coordination with them.
2. Our organization signed an MOU with them to put the Fodder Unit under their custody and regulate selling the fodder to livestock owners at Faqou community.
3. An agricultural specialist from Faqou community has been nominated by them and trained on operating the unit.
4. The project involved RSCN; which is managing Mujib Reserve in planning and implementing phase. Moreover, our organization signed an MOU with them to participate in operating and protecting the unit and support it technically.
5. Relevant community members and stakeholders have be invited to the workshop that provided live demonstration for the Green Fodder unit operation and benefits to encourage them purchase this fodder, and contribute to the success of this experiment.
6. The success of this experiment will lead to expanding it from the revenues generated from selling the fodder to expand its benefits to all faqou community.

Conservation Impacts

Please explain/describe how your project has contributed to the implementation of the CEPF ecosystem profile.

Our project selected Mujib area as a key biodiversity area according to Strategic Direction (3) under business investment plan that was prepared by (CEPF). Our project duration is too short to measure its impact on the long run. But it managed so far to achieve the following:

1. It managed to start promoting improved management of existing Mujib protected area by providing green fodder rich with protein and minerals for livestock through the entire year which promoted controlled grazing and lead to sustainable management plan for the reserve natural resources.
2. The project educated possible beneficiaries of the Green Fodder Unit and raised their awareness about the importance of Mujib reserve for Jordan and the region, how much its species are rare, and the importance of green fodder technology for their livelihood and for the reserve in order to promote their ownership

Please summarize the overall results/impact of your project.

1. It managed to start promoting the improved management of existing Mujib protected area by providing green fodder rich with protein and minerals for livestock through the entire year which promoted controlled grazing and lead to sustainable management plan for the reserve natural resources.
2. Green fodder unit started securing new financial mechanism as it is providing fodder through the entire year for cost that is less that the dried cost with four times. Moreover, green fodder is rich with protein and minerals which will have very positive impact on quality of produced meat, milk and even increasing proportion of births among cattle through increased rates of twinning.
   All of these factors will lead to improving living conditions of Faqou village on the long run in a sustainable approach while protecting the natural resources of Mujib reserve. The pilot unit has been transferred to be under the management and custody of Faqou community to promote more ownership.
3. The project educated possible beneficiaries of the Green Fodder Unit and raised their awareness about the importance of Mujib reserve for Jordan and the region, how much its species are rare, and the importance of green fodder technology for their livelihood and for the reserve in order to promote their ownership.
4. The project managed to promote this technology that is new for communities and livestock owners. This will pave the way for its replication at other communities as we have now the successful Faqou experience.
5. It is expected that on the long run, and by replicating the experiment at other communities that the fodder prices in the kingdom in general will be reduced and will Compensate the shortfall of the governmental budget, through distributing free fodder for sheep breeders that are supported partially by the government in general and Ministry of Agriculture in particular.

Please provide the following information where relevant:

Hectares Protected:

It is too early to measure number of protected Hecatres as we are talking about Mujib Reserve Grazing lands in general. But, based on ideal production of the unit for (0.5) ton on daily basis for the first year, it is expected that:

Number of expected protected hectares in first year = 10 hectares

Species Conserved:

It will be species available at Mujib grazing lands and threatened such as Irano-turanian, Mediterranean, Saline, Tropical and Water vegetation which plays a major role in increasing the flora and fauna diversity

Corridors Created: there are no corridors created here. We only worked on contributing to protect the existing one.

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

The project managed to achieve its objectives on the short term because it managed to install and operate the Green Fodder unit that produce Green fodder on daily basis and through the entire year as it was planned in the original proposal.

The project managed to get all relevant stakeholders on board and transfer the Unit to be under the custody of the Livestock society their as it will be main beneficiary

The project managed to raise awareness of livestock owners and other relevant stakeholders of the importance of such technology.

Long run objectives will depend mainly on the commitment of the Livestock Society to operate the unit correctly and market the product to livestock owners at Faqou. This will lead on the long run to improve their living conditions, and protect Mujib Reserve grazing lands.

Were there any unexpected impacts (positive or negative)?

The impacts were positive in general taking into consideration that we introduced new concept at remote communities. The project was implemented according to the original plan, and there was no major unexpected negative impacts .

Project Components

Project Components*: Please report on results by project component. Reporting should reference specific products/deliverables from the approved project design and other relevant information.*

Component 1: Workshop for relevant stakeholders

Was postponed based on stakeholders recommendations, It was completed on Nov 28, 2013 after mobilizing the Fodder Unit to Faqou to play as live Demonstration for stakeholders

- ✓ The event was held on November 28, 2013 in the wide yard next to the Fodder Unit. A presentation was introduced to the attendees in simple and clear language. The live production process was shown for them inside the unit. The Engineer assigned by Livestock Society helped in answering questions and smoothening the debate.

- ✓ Although there was a lot of discussion and debate as the concept is new for them, but it was accomplished successfully. Portions of the produced fodder were distributed for free for the participants to be introduced to their livestock.

- ✓ There was few livestock owners who returned back to us to tell us that their sheep eat the fodder and liked it and there was no negative consequences. This played as a motivation to come back to purchase this fodder which is considered as a success.

- ✓ There was an argument that the unit has operation cost that should be covered by the project. But we clarified to them very clearly that this should be the Livestock Society contribution in the success of this project as it will be for their own benefit and such cost can be covered easily from the revenues of selling the fodder. The argument was raised by the livestock owners themselves who are also members of the Livestock Society. We clarified to them the below calculations which shows that they will be able to cover the operating expenses and even generate profit if they committed to operating the unit properly. Although, they need time to digest such new technology especilly that they are living in a remote community, but they were convinced to a good degree and they agreed to give it a try and commit to the project to observe its tangible impacts.

- ✓ The market price of **1/2 ton of green** fodder is almost **(160-180) JOD**. Where the society will sell it for almost **(80) JOD/day** only. This amount will be enough to cover operational

expenses and keep the remaining as profit for the society for future expansion and sustainability.

Component 2: Install and operate the Green Fodder Unit

Done and completed successfully

- ✓ As majority of expenses is actually procurement, installation and operation of the green fodder unit, we did a search in the market about our best options. Whether to procure the unit and all its appliances and equipment separately or purchase all of them from one vendor.

- ✓ We concluded to the result that it will be much better and more financially and technically efficient to procure the unit and related professional services from one specialized vendor to guarantee that the unit and its appliances are fully integrated.

- ✓ As the total amount is more than US$5,000, we followed the required procurement guidelines. Accordingly, we prepared a TOR which clarify in brief the concept and objectives of our project, specifying the requirements and indicating clear evaluation criteria.

- ✓ The TOR was sent to five possible specialized vendors in this field.

- ✓ Five proposals were received according to the specified deadline.

- ✓ A Technical and Financial evaluation was conducted, signed and documented.

- ✓ The proposal that was submitted by AL-Qemma Company for Agriculture got the Best value offer as it complied with all required specifications and provided lowest price among others. The price is US$16, 243

- ✓ The vendor was informed about the decision .

- ✓ A contract was signed with AL-Qemma Company for Agriculture.

- ✓ Advance payment was paid for the vendor to start working on the unit which equal to US$8,121

- ✓ Start date is 14/6/2013 delivery period (45) days

- ✓ The awareness workshop that was supposed to be held at the beginning of the project to raise awareness of related stakeholders about this new technology was postponed to be held after the live operation and production of the unit. This decision was taken upon mutual agreement of the stakeholders to give a live demonstration to the stakeholders instead of theoretical awareness and to avoid workshops during the month of Holly Ramadan.

- ✓ The vendor managed to finish installation and operation of the unit at its factory within the first (30) days.

- ✓ The unit is mobilized to Faqou Village preparing it to start operation officially.

- ✓ We faced a problem in mobilizing the unit from the Factory at Abu Alanda to the land that was prepared specifically for it at the Yard of Faqou Agricultural Cooperative Association for breeding sheep. The walls surrounding this Yard made the mission of the rented Crane very difficult which forced the team to put the Fodder Unit outside this Yard. This made the project's team very concerned as we guarantee its safety there. Accordingly, we had to rent a larger crane specifically to mobilize the unit inside the specified Yard.

- ✓ This coasted the project an extra **US$565** for the rented big Crane which was out of the plan and unforeseen expenses.

- ✓ To cover these expenses, we had to reallocate the amount from:
  A. Maintenance Item $500.0
  B. Salaries Item – we re-allocated at the beginning $200 but we found out later that we needed only $65.0 to cover crane expenses.

- ✓ The Green Fodder unit started its operation at Faqou Village on Sep 1, 2013

- ✓ Our team in cooperation with the vendor supervised closely the operation and production of first green fodder meal.

- ✓ The actual operation at Faqou village revealed to us unforeseen problems that needed to be solved quickly such as:
  1. There was little ratting on the produced fodder. Although it is within safe range, but we preferred to solve this problem from the beginning to avoid its expansion in the future. Accordingly, we procured a Sterilizer that was fixed as part of the unit to sterilize water using Ozone and prevent any possible infections.
  2. Ratting is usual kind of infection that happens to green leaves. It is not harmful to animals at all. But we preferred here to take correction measures and prevent this infection.

3. The sterilizer tool is very close to the tool used to make usual drinking water cleaner and out of germs. It doesn't have any harmful or chemical implications to the green fodder neither to the animals.
4. Additional measure was to wash the seeds with pure water at contains specific portion of Clorox to kill any germ before planting the seeds

✓ Accordingly, we had to do some re-allocation to Supplies item to cover unforeseen expenses such Sterilizer and seeds as follows:

1. Use Remaining budget from the event line equal = $562.0

But it is not enough as the Actual total cost is ($918.0) , so there is ($356.0) gap.

✓ After that, we re-allocated any available in the budget lines to the salary as it was hardly enough especially after taking from it $200 to cover the unforeseen and urgent crane expenses

✓ The project team prepared a big sign (1 m x 2 m) that was hanged on the side of the unit. It illustrates very clearly the name of the project, names and logos of Donor and implementing partners.

- ✓ Another sign was hanged next to the door of the unit which illustrates very clearly the objective of the unit, its operation and advantages.

- ✓ An engineer from the community was assigned by the livestock society to supervise the operation of the unit for average of (2) hours/ day.

- ✓ The production of the unit was of excellent quality especially after using the steriliser. Attached are some photos for the unit production.

- ✓ But the Livestock Society faced a problem in marketing the produced fodder especially that the concept is new for such rural community. Accordingly, the project team decided to use the community event as a promotion tool for this new product.

- ✓ Accordingly, we took the following steps:
  1. Design and print flyers in Arabic that illustrates clearly, briefly and in simple language the objective of the unit, its operation and advantages.
  2. Design and print Business Cards for the Society chairman that illustrates clearly, His name and the project's name.
  3. Cover all expenses of the green fodder production for that week to be distributed for free for the participants.
  4. Invite all members of the society as they are representing most of beneficiaries at Faqou Village.
  5. Invite the Acting Governor for Faqou.
  6. Invite Ministry of Agriculture representative there
  7. Food , beverage and other necessary arrangements.

Component 3: Training one of Faqou citizens to operate and maintain the unit

Done and completed successfully. This person will be working side by side with vendor until end of maintenance period

This person was chosen by the Livestock Society itself as this person has good agricultural back ground and he lives close to the unit location.

He was trained directly on the unit by the vendor (for 15 hours distributed over one month) on operating the unit and maintaining it . The unit is completely automated and it doesn't needs much to operate it, but it is important to have someone who follows its production and marketing on daily basis.

It is important to choose a person from the community as it will build their ownership to the new technology. Moreover, this person is better aware of his community problems and they do really need. This will help in better promoting the new product

Were any components unrealized? If so, how has this affected the overall impact of the project?

There was only one component that has been only postponed which is holding a workshop for all relevant stakeholders. The awareness workshop that was supposed to be held at the beginning of the project to raise awareness of related stakeholders about this new technology was postponed to be held after the live operation and production of the unit. This decision was taken upon mutual agreement of the stakeholders to give a live demonstration to the stakeholders instead of theoretical awareness and to avoid workshops during the month of Holly Ramadan.

The event was completed successfully on Nov. 28, 2013 and it played the role of live demonstration for the target group and as promotional activity for marketing the new product.

Please describe and submit (electronically if possible) any tools, products, or methodologies that resulted from this project or contributed to the results.

The project is currently preparing a manual for the operation of the unit to register it in the national library and reserve the rights to us as we are pioneers in introducing this technology at Jordan

Several NGOs approached us to replicate the experience as they heard about it from Faqou

Lessons Learned

Describe any lessons learned during the design and implementation of the project, as well as any related to organizational development and capacity building. Consider lessons that would inform projects designed or implemented by your organization or others, as well as lessons that might be considered by the global conservation community.

The project proved that is very innovative and promising and could solve the fodder shortage at national level and even reduce government burden. It needs every possible support to expand at national level as the main obstacle is the initial cost of the unit itself.

Project Design Process: (aspects of the project design that contributed to its success/shortcomings)

Although the project proved its success on ground, the concept is still new for the community and the livestock society is not financially strong enough. There is a need to support the community in marketing the product. Accordingly, there is should be a complete part in the project and budget for covering the operational expenses of production for (1-3) months such as the seeds, water, electricity and others. Another budget should be for marketing the product for this duration. This will guarantee more sustainability.

After six months, the society should be strong enough to produce, market the product, cover its daily expenses and generate profit that is important for Society sustainability and for project's sustainability and expansion. Moreover, by following this approach we eliminate any uncertainty of its fruitful impact on the community.

There is should be a contingency item in the budget, as there will be always unforeseen needs in such pilot project

Project Implementation: (aspects of the project execution that contributed to its success/ shortcomings)

We observed at this stage; is the importance of involving Governmental bodies in order to facilitate its replication at national level.

Strong technical organization such as RSCN ,in our case, need to be part of operation supervision to avoid any mistakes, sabotage actions or volatility of prices for personnel benefits

The water recycling system was closed several times as the filter need to be cleaned on daily basis from any suspended seeds. So, we had at the end to close the system at this stage and depend on new water on daily basis.

Its worth mentioning that although they are using new water on daily basis , the total amount of water per month is (15 cubic meter) which is still much less than water needed for traditional agriculture of fodder. Moreover, the resulted water is not wasted, it is used to irrigate the trees in the location of the unit.

The recycling system is not closed permanently. It is still in place and it is still rand new. We closed temporarily as needs more follow up to clean it. We preferred to keep the focus on the unit production, marketing and convincing the community of the new product.

We will re-operate the recycling system when the selected technician feels that he can manage the unit, marketing and other tasks strongly and can commit enough time to clean the filter twice or three times per day.

Future units should include a unit for turning the green fodder that was not consumed within first (2-3) days that is in excess of daily needs into “Silage”. This silage can be stored for longer period of times without ratting.

Future units should include Solar unit to generate electricity to reduce electricity bills and to turn the unit into “complete green unit”

Other lessons learned relevant to conservation community:

1. Although the project proved its success on ground, the concept is still new for the community and the livestock society is not financially strong enough. There is a need to support the community in marketing the product. Accordingly, there is should be a complete part in the project and budget for covering the operational expenses of production for (1-3) months such as the seeds, water, electricity and others. Another budget should be for marketing the product for this duration. This will guarantee more sustainability.

   After six months, the society should be strong enough to produce, market the product, cover its daily expenses and generate profit that is important for Society sustainability and for project’s sustainability and expansion. Moreover, by following this approach we eliminate any suspicious of its fruitful impact on the community.

2. We observed at this stage; is the importance of involving Governmental bodies in order to facilitate its replication at national level.

3. Strong technical organization such as RSCN ,in our case, need to be part of operation supervision to avoid any mistakes, sabotage actions or volatility of prices for personnel benefits

4. Future units should include Solar unit to generate electricity to reduce electricity bills and to turn the unit into “complete green unit”

Additional Funding

Provide details of any additional donors who supported this project and any funding secured for the project as a result of the CEPF grant or success of the project.

Donor	Type of Funding*	Amount	Notes
CEPF	Grant	$19,975	

Additional funding should be reported using the following categories:

A) Project co-financing (Other donors contribute to the direct costs of this CEPF project)

B) Grantee and Partner leveraging (Other donors contribute to your organization or a partner organization as a direct result of successes with this CEPF project.)

C) Regional/Portfolio leveraging (Other donors make large investments in a region because of CEPF investment or successes related to this project.)

Sustainability/Replicability

Summarize the success or challenge in achieving planned sustainability or replicability of project components or results.

The actual operation at Faqou village revealed to us unforeseen problems that needed to be solved quickly such as:

1. There was little ratting on the produced fodder. Although it is within safe range, but we preferred to solve this problem from the beginning to avoid its expansion in the future. Accordingly, we procured a Sterilizer that was fixed as part of the unit to sterilize water using Ozone and prevent any possible infections.

2. Additional measure was to wash the seeds with pure water that contains specific portion of Clorox to kill any germ before planting the seeds. This way is totally safe as the Clorox is used in safe percentages close to the ones used in our tapped water.

3. The Livestock Society faced a problem in marketing the produced fodder especially that the concept is new for such rural community. Accordingly, the project team decided to use the community event as a promotion tool for this new product to encourage the livestock owners purchasing the new product

Summarize any unplanned sustainability or replicability achieved.

Nothing So far. All planned sustainability were achieved

Safeguard Policy Assessment

Provide a summary of the implementation of any required action toward the environmental and social safeguard policies within the project.

The project didn't face so far any environmental or social issues.

Additional Comments/Recommendations

Provide any additional comments you feel have not been captured in the previous sections of this report.

There are no further comments so far.

Information Sharing and CEPF Policy

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

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