CEPF Final Project Completion Report

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

Organization Legal Name	Société Française d'Ichthyologie
Project Title	Filling gaps and improving knowledge of freshwater fauna: a way forward for improving management of rivers of the Solomon and Vanuatu Islands
CEPF GEM No.	# 64245
Date of Report	December 8, 2016

CEPF Hotspot: Melanesia (Solomon Islands and Vanuatu)

Strategic Direction:
Strategic Direction 1. Empower local communities to protect and manage globally significant biodiversity at priority Key Biodiversity Areas under-served by current conservation efforts
1.1 Conduct baseline surveys of priority sites that build government-civil society partnerships and bridge political boundaries.
1.2 Raise awareness about the values of biodiversity and the nature of threats and drivers among local communities at priority sites.

Grant Amount: US$ 49,755

Project Dates: 1 May 2014 – 31 October 2016

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

Vanuatu Department of Conservation - Team staff- local, involved in project, field trips, SAP, restitution etc…
Solomon Department of Conservation - Associate - local
Solomon Islands Community Conservation Partnership (NGO) : Ecological Solution Solomon Islands (ESSI), Kolombangara Island Biodiversity Conservation Association (KIBCA) – both Team staff – local, involved in project, field trips, SAP, restitution etc…

<u>Conservation Impacts</u>

2. **Describe how your project has contributed to the implementation of the CEPF investment strategy set out in the ecosystem profile**

Strategic Direction 1. Empower local communities to protect and manage globally

significant biodiversity at priority Key Biodiversity Areas under-served by current conservation efforts

1.1 Conduct baseline surveys of priority sites that build government-civil society partnerships and bridge political boundaries.

1.2 Raise awareness about the values of biodiversity and the nature of threats and drivers among local communities at priority sites.

To comply with the CEPF Safeguard Policy on Indigenous People through Prior informed Consent, the team has carried out consultation meetings from before each of the field missions. All meeting venues were organized in such a way that villagers from nearby settlements could also attend the consultation meeting. The meetings were well attended by the villagers. The positive impact of this project is that we worked with customary landowners to protect the remaining pristine tropical rainforests and valuable freshwater faunas of Solomon Islands and Vanuatu. Some of the Islands, like Kolobangara and Choiseul Islands (Solomon) or Tanna and Gaua Islands (Vanuatu) have some unique flora and fauna that do not occur elsewhere in Solomon or Vanuatu or other parts of the world.

Additionally this project empowered communities in terms of encouraging traditional leadership and governance, and provided tools for resource managers as part of the human capacity development outcome through training.

Furthermore, development of a land use plan will aid in the planning and development of a proposed National Park on the island of Kolobangara (Solomon) or a protected area in Gaua (Vanuatu).

The outcome of this work will strengthen the protection of the remaining primary forest corridors along the watersheds.

One of the major challenges in these Islands with regards to any development or project is dealing with traditional land ownership conflicts. On the Island of Kolobangara, Kolobangara Forestry Plantation Limited (KFPL) owns 75% of the land. This means that most of the lower lands were covered with planted commercial trees after deforestation and destruction of the primary forest under 400 m in altitude. Our team

also had a separate meeting with the KFPL management team and they have given us the permission to conduct our survey within their land boundary areas.

The type of approach we used to address potential impacts was typically that recommended by the CEPF's safeguard policy on Indigenous People: identify relevant local communities, discuss with them our activities, gauge their possible level of involvement (them taking part and helping us fish in the rivers and explaining their knowledge of diversity of fish present in their river, their use, their local names etc.). This project excluded areas where conflicts over land were present.

In the Solomon Islands, with the full logistic support of Ecological Solution Solomon Islands (ESSI), our local NGO partner, the team came with a generator, a video-projector and a computer. At each village, we gave a power point presentation, presenting not only the purpose of our surveys, but also the different fish and crustacean species collected and found at each site. Both in Solomon and Vanuatu, the team came with underwater cameras; photos of each species were shown as well as some short films showing the behaviour of some of the fish. After the presentation, the team answered many questions, and a long discussion often took place. The customary landowners usually expressed their appreciation to the survey team about the outcome of the survey in their streams. For the customary landowners and the villages, to learn about what lies within their stream and rivers was new and surprising. It was an eye opener for them and to have actual information about the biodiversity present in their streams and rivers represented truly valuable information.

A the last trip in Solomon (Oct. 2016), a talk was also given by the team at the Solomon Islands National University to 1st year students in agricultural studies. The team thought it was also important to try and raise awareness at a national level by talking to the students, the potential future leaders of the country. Some students showed real interest and made contact after the conference with the ESSI leader for further exchange and internship opportunities.

3. Summarize the overall results/impact of your project

Solomon Islands

Fish and crustaceans of Kolombangara watershed, Choiseul island's priority site (including the Sirebe Rainforest and Biodiversity Conservation Area (SRBCA) and Vuri Rainforest and Biodiversity Conservation Area (VRBCA) were studied. Our study shows that the freshwater fauna of this Choiseul watershed is rich and consists of 80 species (52 fishes and 28 decapod crustaceans). Among these species, several are endemic to Solomon Islands, and Choiseul is one of the main Solomon Islands for their conservation. One new species of freshwater crab was collected, as 3 new species of shrimps. In terms of freshwater fishes we noted 12 new occurrences with two likely undescribed species.

Our study also shows that the freshwater fauna of Kolobangara Island is rich and consists of 98 species (58 fishes and 38 decapod crustaceans). Among these species, several are endemic to Solomon Islands, and Kolobangara is one of the main Solomon Islands for their conservation. As nothing was known of freshwater crustaceans in the Solomon Islands before our 2014 trip, all the species caught are new occurrences for this island and we noted 15 new occurrences and two new species of shrimps. In terms of freshwater fishes we noted 12 new occurrences with five likely un-described species.

To sum up, for the Solomon Islands, there are 69 fish species, including 6 new species for science, 20 new occurrences. For crustaceans, there are 43 species, all are new occurrences, as nothing was known for the Solomon Islands prior to our study; 4 are new species for science.

Vanuatu

Our study shows that the freshwater fauna of Tanna and Aneityum is relatively rich and consists of 30 species for Green Hill priority site on Tanna (17 fish species and 13 decapoda crustaceans) and 40 species for Aneityum (23 fish species and 17 decapoda crustaceans). Among these species, several are endemic to Vanuatu. It is the first time that Aneityum was ever prospected; all the species found on this island are new

occurrences. No introduced species were found on Aneityum, two were found on Tanna.

The Gaua priority site is rich and consists of 40 species (26 fish species and 14 decapoda crustaceans). Among these species, several are endemic to Vanuatu and Gaua is one of the main sites for their conservation. For crustaceans, 4 species are new occurrences. For fishes we noted 7 new occurences. Lake Letas is of particular interest for the conservation of eels and particularly of the mountain eel, *Anguilla megastoma*.

To sum up, in Vanuatu there are 67 fish species, with 4 new occurrences. There are 29 crustacean species, with 4 new occurrences.

As all species collected both in Vanuatu and Solomon are diadromous (migration between fresh and sea water) and more specifically amphidromous and catadromous. It is important to recognise the potential for human impacts on freshwater habitats and particularly on the migration pathways between estuarine and freshwater habitats. These species have to undertake two migrations between freshwater and the sea. The success of such a life cycle - *i.e.* production of larvae for downstream migration after hatching and return to rivers with post-larvae and juveniles during the upstream migration – depends on maintaining the mountain/forest-river-ocean corridor to enable movements between both habitats. The maintenance and/or the rehabilitation of riverine habitat, including riparian margins, is also of major importance.

Planned Long-term Impacts - 3+ years (as stated in the approved proposal)
List each long-term impact from Grant Writer proposal

- To raise awareness of the rich freshwater biodiversity present in most rivers and streams;
- Gain an understanding of the role of pristine forest on habitats and freshwater quality through the field trip
- Gain an understanding of the role of freshwater biodiversity on freshwater quality
- Generate data for management and conservation of species and protected areas
- More sustainable management of freshwater fisheries in particular post-larvae fisheries when they recruit to colonise the river.
- A support for a tool implemented by local communities.

4. Actual progress toward long-term impacts at completion

Our work confirms the status of hotspots of all sites surveyed and establishes a complete reference list for both fish and crustaceans.

Our work helped local communities to understand that protecting their species also empowers them to have arguments against potential destruction development proposals in their catchments (such as forestry). One sentence that the survey team and local communities finally came up with is that "**knowledge is power**". We also had many discussions with communities about that protection of their rivers will result in the protection of their water supply as well as the biodiversity. This starts by protecting the pristine forest.

During these discussions, we also discussed post-larvae fisheries, in particular the necessity to limit the catch per person. The idea was entirely supported by the local communities. Everyone understood the life cycle of the fish they catch and supported the concept of letting some of the post-larvae through for their upstream migration and for the maintenance of the resource.

Our partners will continue raising awareness of the rich freshwater biodiversity present in most rivers and streams. This will have management implications, in particular the necessity to maintain pristine forests to protect habitats and freshwater quality.

A project is underway to produce a guide to freshwater fish and crustaceans of the Solomon Islands for 2017. The team has already produced such a guide for Vanuatu. A poster presenting the main freshwater species and the way of their management is in preparation.

Planned Short-term Impacts - 1 to 3 years (as stated in the approved proposal)
List each short-term impact from Grant Writer proposal

Here are the short-term impacts that we wanted to reach during the 3-year project:

Prospection of the priority sites targeted by the project:

*Vanuatu
-Aneityum (3.850 ha) - Prospected
-Gaua (18.725 ha) - Prospected
-Green Hill – Tanna Island (2.030 ha)- Prospected
-Tongoa-Laika (3.441 ha) – Unpropected due to unaccessibilty, too dangerous for the team.

*Solomon
- Guadalcanal Watersheds (376.146 ha) - Prospected
- Kolombangara Upland Forest (30.963 ha) – Kolobangara Island- Prospected
- Mount Maetambe - Kolombangara River (78.399 ha) - Choiseul - Prospected

For each of the sites we :
- gave a list of valid species
- gave the status, distribution and rarity of species
- and we raised awareness and trained guides and rangers (Capacity building)

5. Actual progress toward short-term impacts at completion

Completed. See above and final reports.

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

See above and progress reports.

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

No.

<u>Project Components and Products/Deliverables</u>

Component 1 (as stated in the approved proposal)
List each component and product/deliverable from Grant Writer

8. Describe the results from Component 1 and each product/deliverable

Component 1.

Inventory of freshwater fishes and crustaceans in prospected CEPF priority sites in Vanuatu and Solomon (Validation of each species caught; determination of their distribution, endemic status, and, if possible, conservation status)

1.1.

List of valid species per site, per river and country.

The lists have been produced (see reports and above)

1.2.

Evaluation for each species, their distribution, and, where possible, conservation status and management proposal

This has been done in each 6-monthly and final reports. A project is underway to produce a guide to freshwater fish and crustaceans of the Solomon Islands for 2017. The team has already produced such a guide for Vanuatu with all the elements of component 1.2.

In summary, several important facts warrant mention for the management and/or the conservation of Solomon and Vanuatu freshwater fish and crustaceans.

1- It is essential to allow species to move freely between the upstream and downstream reaches. To ensure the free circulation of these species requires that there be no barriers in the river that cannot be crossed both up and downstream (the ecological and biological characteristics of all the species involved need to be studied).

2- A minimum flow has to be maintained in order to maintain rheophillic zones (strong current and high water oxygenation) in the river and thus enable the species adapted to such an environment to complete their biological cycle. The flow rates must be high and must follow seasonal variations.

3- The vegetation cover must be maintained or restored over rivers. This forest cover ensures the water remains cool and well oxygenated; it also ensures regular rainfall thus supplying the catchment area with water. Forest cover provides a high diversity of habitats and therefore of species. It also supplies exogenous elements for the nourishment of certain species.

4- The installation of structures modifying the flow rate, degrading habitats or causing pollution should be avoided.

5- Estuaries must be preserved as they represent areas where certain species transit, where larvae of amphidromous species exit to sea, and where post-larvae and juveniles enter to colonise the rivers. The lower courses must be kept in their natural state to preserve the tribes fishing.

6- Finally, urgent studies on the life cycle of the diadromous species (biology, ecology) are needed. Man-made developments on these streams can alter larval dispersal and therefore the recruitment success. It is therefore necessary to understand the ecology of this special fauna to the best of our ability, and to develop regional management and restoration strategies in order to preserve amphidromous species.

Component 2.

Redaction of field and technical reports, scientific papers and articles in local newspapers

2.1.

Results of the surveys will be documented and disseminated by free-access field and technical reports, scientific papers (on line format, pdf) and through local media

We have produced all the requested 6-monthly and final reports. Our reports can be viewed and downloaded in CEPF and ESSI websites.

Two scientific papers describing new fish species from the Solomon Islands have been published (*Eleotris bosetoi* and *Lentipes kolobangara*). Three articles have been published in local newspapers.

Component 3.

If new species are recorded, redaction of peer- reviewed papers

3.1.

Free-access of the peer-reviewed papers

Two scientific papers describing new fish species from the Solomon Islands have been published (*Eleotris bosetoi* and *Lentipes kolobangara*). Our articles can be viewed and downloaded in ESSI website or seachers '*Research Gate*' website pages.

Component 4.

Strengthened capacity of at least 5 staff in total from government departments, protected area agencies and NGOs in Vanuatu and the Solomon Islands in taxonomy and ecology of freshwater fauna (fishes, crustaceans), as demonstrated by evaluations at project start and end.

4.1.

Continuous training and final evaluation of local staff and local restitution of the main results

During the field trips we trained local staff (NGO's and students (a mean of 2 to 4 per trip) and villages (a mean of 4 to 6 persons per village) in taxonomy and ecology of freshwater fauna (fishes, crustaceans). This study empowered communities in terms of encouraging traditional leadership and governance, and provided tools for resource managers as part of the human capacity development outcome through training.

In the Solomon Islands case, a month before the completion of the project, we went back (with our own funds) to give a final restitution to local stakeholders. We also went back in the field with people that we previously trained and we noted that they were highly efficient competent and confident in the field. This is a warranty for the transmition of knowledge. In the case of Vanuatu, the team has already produced a guide with all the elements needed for management and conservation of the freshwater fauna. Our local counterpart, D. Kalfatak, is now highly qualified for this fauna.

Component 5.

Contribute to participation and raise awareness of local communities on freshwater fishes and crustaceans in a respectful and traditional way

5.1.

Social Assessment Plan (SAP) developed and implemented

See all 6-monthly reports including the SAP. These SAP were carefully developed and implemented each time.

5.2.

Compliance with CEPF Social Safeguard policies monitored (as per recommendation in SAP), and reported on after each on-the-ground intervention.

To comply with the CEPF Safeguard Policy on Indigenous People through Prior informed Consent, the team has carried out consultation meetings at each site surveyed.

The type of approach we used to address potential impacts was typically that recommended by the CEPF's safeguard policy on Indigenous People: identify relevant local communities, discuss with them our activities, gauge their possible level of involvement (them taking part and helping us fish in the rivers and explaining their knowledge of diversity of fish present in their river, their use, their local names etc.).

Some key principles associated with good consultation were adopted throughout:

1. Genuine dialogue with various local communities, and people who might hold ownership over the land.

2. Clear understanding of the objective of the project.

3. Clear written or agreed upon Terms and Conditions on the usage of the land.

4. Proper identification of the true landowners.

5. Integration of the team in the villages.

6. Presentation of our work and of the results at each site before departure.

(See all 6-monthly and final reports).

9. Repeat point 8 above for each Component in your approved proposal

See above.

10. If you did not complete any component or deliverable, how did this affect the overall impact of the project?

N/A

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

See section 8 above, components 2 and 3.

Benefits to Communities

12. Please describe the communities that have benefited from CEPF support

*Please report on the size and characteristics of communities and the benefits that they have received, as a result of CEPF investment. Please provide information for all communities that have benefited **from project start to project completion**.*

	Community Characteristics											Nature of Socioeconomic Benefit								
								Size of Community												
Community Name	**Subsistence economy**	**Small landowners**	**Indigenous/ ethnic peoples**	**Pastoralists / nomadic peoples**	**Recent migrants**	**Urban communities**	**Other***	**50-250 people**	**251-500 people**	**501-1,000 people**	**Over 1,001 people**	**Increased access to clean water**	**Increased food security**	**Increased access to energy**	**Increased access to public services (e.g. health care, education)**	**Increased resilience to climate change**	**Improved land tenure**	**Improved recognition of traditional knowledge**	**Improved representation and decision-making in governance forums/structures**	**Improved access to ecosystem services**
Solomon																				
Choiseul																				
Lauru Land	x		x					x				x				x				x
Kolobangara																				
Hunda	x		x					x				x				x				x
Jack Harbour	x		x					x				x				x				x
Poitete	x	x	x						x			x				x				x
Lodumoe	x		x					x				x				x				x
Vanga	x		x					x				x				x				x

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Vanuatu																				
Gaua																				
Jolap	x		x						x			x				x				x
Tanna																				
Nusumetu	x		x					x				x				x				x
Green Hill	x		x					x				x				x				x
Lenakel	x	x	x							x		x				x				x
Aneityum																				
Anelcahat	x		x					x				x				x				x

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

Lessons Learned

13. Describe any lessons learned related to organizational development and capacity building.

Pre-consultation of local communities before any fieldwork is absolutely crucial and final restitution is an important consolidation tool, especially for capacity building.

14. Describe any lessons learned related to project Design Process *(aspects of the project design that contributed to its success/shortcomings)*

The hand in hand collaboration between scientific teams, local NGOs and Villages/tribes is the key to the success of such a project.

15. Describe any lesson learned related to project Implementation *(aspects of the project execution that contributed to its success/shortcomings)*

Again, pre-consultation of local communities before any fieldwork is absolutely crucial.

16. Describe any other lessons learned relevant to the conservation community

As in each trip, in each site prospected, the interest for our study was important, probably because we explain a lot before (many meetings) and organized restitution meetings before departure.

Nevertheless, there is, each time, a real awareness of the rich freshwater biodiversity of rivers and of the role of a pristine forest on water supply and biodiversity conservation.

For the customary landowners and the villages, to learn about what lies within their stream and rivers was new and surprising. It was an eye opener for them and to have actual information about the biodiversity present in their streams and rivers represented truly valuable information.

There are practical side benefits that result from conservation activities (protection of the pristine forest = maintenance of the water supply for local villages and their future).

Sustainability / Replication

17. Summarize the success or challenges in ensuring the project will be sustained or replicated

For each local community that we are working with, we have asked the villagers to select or appoint tour guides. In Solomon, a representative (NGO or ranger) was part of the survey team throughout the field expeditions, as a representative of Environnment office in Vanuatu. The survey team and local community members worked together for the success of these survey. The warm welcome and support rendered by the indigenous members of each community that we worked with impressed the survey team. Everyone appeared interested in our survey and interest demonstrated as part of our capacity building efforts was very impressive. The team remains very optimistic to return in the future to conduct another freshwater fauna survey.

Local NGO representative is the guarantee that the project will be sustained or replicated. This is why one of our local NGO representative in Solomon, D. Boseto (ESSI, Solomon), has been recognised by CEPF as one of 16 local heroes.

This permits to train local partners and villages to biodiversity management, to restitute knowledge to the communities and to give conferences, posters, books or booklets to them.

18. **Summarize any unplanned activities that are likely to result in increased sustainability or replicability**

N/A

Safeguards

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

N/A

Additional Funding

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

Donor	Type of Funding*	Amount	Notes
French Ichtyol. Society	A	92,000 USD	Salaries in kind contributions
		10,000 USD	Sampling, Analyses of material
		25,000 USD	Travels and field missions

** Categorize the type of funding as:*

A Project Co-Financing (other donors or your organization contribute to the direct costs of this 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 funded project)
*C Regional/Portfolio Leveraging (other donors make large investments in a region because of CEPF investm*ent or successes related to this project)

Additional Comments/Recommendations

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

From our perspective, we can already say that the programme has been a great success for all those involved, especially from a biodiversity point of view and from a collaborative point of view. Our first report has highlighted some of those results with in particular some strong evidence of the high freshwater biodiversity values.

Our field surveys also offered some fantastic opportunities for collaboration and capacity building with the local communities and stakeholders. We have been able to engage fully with the villages through a number of presentations that explained the reasons for our visits, the outcomes of our surveys, why freshwater biodiversity is potentially important to them and our desire to continue helping them sustain those precious resources. On numerous occasions, we were impressed by the caliber of the dialogue with local communities who all expressed a real interest in what we were doing. They asked very pertinent questions that got us thinking harder about their future needs and ability to implement concrete measures that could protect that biodiversity.

This part of our work was very enriching and those Q&A sessions we had with them following our presentations, highlighted to us that we were only at the start of a journey.

The French Ichtyological Society has invested a significant amount, both financially (as cofinancing) and in kind time to achieve successful outcomes; simply because feedback from past programs has convinced us that raising awareness on freshwater biodiversity and more

generally on the need to protect freshwater values and ecosystem services associated with streams and rivers matters to local island communities.

Our collaboration with CEPF over the past 3 years has been a successful one for all parties, including local communities.

We have attempted to the best of our ability to meet all CEPF requirements by the due dates. However, we must confess, that fulfilling your entire requirements included a vast amount of administrative work. That was extremely time consuming. That time would certainly have been better invested, in our view, in the scientific work and the collaborative aspects of our work. We would encourage you to simplify further your reporting requirements in order to let future applicants focus on the essential.

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.

Please include your full contact details below:

22.	**Name:**	**Phillip KEITH, President – Clara Lord, Treasurer**
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