

CEPF Final Project Completion Report

Organization Legal Name:	Wildlife Conservation Society
Project Title:	Saving Sea Turtles on Mussau Island of Papua New Guinea through Improved Marine and Terrestrial Food Security
Grant Number:	65963
CEPF Region:	East Melanesian Islands
Strategic Direction:	1 Empower local communities to protect and manage globally significant biodiversity at priority Key Biodiversity Areas under-served by current conservation efforts
Grant Amount:	\$250,000.00
Project Dates:	July 01, 2016 - December 31, 2018
Date of Report:	February 27, 2019

Implementation Partners


List each partner and explain how they were involved in the project

Lolieng Sustainable Program (LSP) CBO – WCS worked with LSP to undertake all activities and to ensure LSP was able to maintain the food security methods introduced (new agricultural crops and improved agricultural methods and three methods to minimise pig damage to crops) after the project has finishes. LSP will also oversee and enforce the Marine Resource Management Plan which bans the harvesting of turtles in Lolieng.

Conservation Impacts

Summarize the overall impact of your project, describing how your project has contributed to the implementation of the CEPF ecosystem profile

- **The turtle cull was averted.**
- **Awareness was raised in Lolieng and Nae about the important ecological role of green turtles and the need to conserve them. The communities had blamed the loss of seaweed and seagrass on sea turtles. However, WCS explained to the communities that the turtles had been present before the decline in seaweed / seagrass and that their decline was more likely due to the human overharvesting of seaweed and seagrass, landscape changes in the near-**



shore area (logging), climate change and earthquake activity changing the depth of the inshore area.

- Food security and crop diversity were significantly increased in Lolieng through the provision of new crops (50% increase recorded) and the introduction of three methods to protect community gardens from pig attack (net and corral traps and an electric fence around the Lolieng communal garden).
- An ungulate eradication expert was hired to produce a report on community methods to manage pig damage to gardens in Mussau and the overall cost of eradicating pigs from Mussau Island (> US \$30 million). The report was presented to the Lolieng community and the local and provincial government. An easy guide to producing the net traps recommended in the report for community control was produced by WCS.
- Agricultural, turtle and sea grass reports were designed and presented to the community and to the Mussau Island local government and New Ireland provincial government at a project close workshop in the capital of New Ireland province (Kavieng).
- Capacity building exercises were undertaken to establish and improve the functioning of the Lolieng Sustainable Program (LSP) CBO over the course of the project. This included a week-long training session for the CBO executive in Kavieng where they decided upon their aims and met with a number of prospective partner organisations. This process culminated in the successful registering of the project with the PNG Investment Promotion Authority.
- LSP is committed to ensuring the food security (new agricultural crops and methods, three pig control methods) and sustainable marine resource management (through implementation of the Lolieng Marine Management Plan including the complete ban on turtle harvesting) activities introduced by this project are continued into the future.
- WCS assisted LSP in designing a small-grant application to monitor and conserve a significant green turtle nesting site. They have submitted this application to CEPF.
- LSP was supported in leading a community roadshow on Mussau Island KBA to increase awareness on the need to conserve the Endangered green turtle. They visited 5 Mussau communities and the Mussau high school. Posters and brochures outlining the importance of green turtle conservation on Mussau Island were distributed in English and Tok Pisin.
- The abundance of green turtles at Lolieng was studied. This is the first-time green turtle abundance on Mussau Island has been quantified. The results showed a very high abundance of the Endangered green turtle on Mussau. This provides support for Mussau being designated as a Key Biodiversity Area.
- WCS Marine Biologist Azalea Aota was supported to successfully undertake a honours project on Lolieng sea turtle abundance at the University of Papua New Guinea.
- A ratification ceremony for the Lolieng Marine Resource Management Plan and a launch ceremony for the Lolieng Sustainable Program CBO were held by the Lolieng community during WCS' 6th island trip. A representative from the New Ireland provincial government and Mussau local government attended.
- By the end of the project Lolieng women reported feeling more confident to voice their opinions during community meetings and to lead CBO activities. This follows the establishment of a women's group at Lolieng, the example of Azalea Aota (WCS Marine Biologist) leading WCS' island visits and the inclusion of women in senior roles within LSP.

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

Impact Description	Impact Summary
<p>1. Human-green turtle conflicts on Mussau Island (<i>Chelodina mydas</i> - CEPF priority species at a CEPF Key Biodiversity Area) are minimized through the implementation of effective conservation interventions and improved food security.</p>	<p>Human-green turtle conflicts have been significantly reduced on Mussau Island. Harvesting of all turtles was banned at Lolieng. Lolieng had proposed a turtles cull because they believed they were the cause of a decline in seagrass which led to a decline in the availability of rabbit fish, a popular local food source. WCS explained the decline in seagrass was more likely due to the human over-harvesting of seaweed and seagrass, landscape changes in the near-shore area (logging), climate change and earthquake activity changing the depth of the inshore area than green turtles which were present before the decline. A community roadshow led by the Lolieng community raised awareness on the importance of green turtle conservation in 5 communities and at the Mussau high school. Food security was improved through the establishment of 8 new crop/varieties in Lolieng, training in new methods of agricultural pest and disease control and soil nutrient maintenance and the establishment of three methods of pig control to reduce pig damage to community gardens (see Compendium 5 & 6 for further details).</p>
<p>2. Mussau remains a turtle haven and continues to be regionally important as a nesting and feeding ground.</p>	<p>This project has confirmed Mussau as an internationally important hotspot for green turtles. The first study of turtle density on Mussau Island was completed showing a very high density of green turtles at Mussau (~8 per ha). The Lolieng community CBO have submitted a small grant application to CEPF to undertake the first monitoring of a turtle nesting site on Mussau.</p>
<p>3. A Mussau based community organization has been developed to act on the environmental concerns of the islanders.</p>	<p>The Lolieng community-based organisation (CBO) had been developed through extensive training with WCS, including a week training session on Kavieng. It is now a registered CBO which has links to the civil society in New Ireland, the New Ireland Provincial government and the Mussau local-level government.</p>

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

Impact Description	Impact Summary
<p>1. An imminent turtle cull involving the deaths of several hundred adult turtles (mostly green turtles, <i>Chelodina mydas</i> with some hawksbill turtles, <i>Eretmochelys imbricata</i>) is avoided through implementation of interventions to reduce human-turtle conflict (caused by turtle herbivory on the edible seaweed</p>	<p>The turtle cull was averted. A Marine Resource Management Plan which bans the harvesting of turtles has been developed with the Lolieng CBO and was ratified on the 6th Island trip. The Plan covers the entire 9.5km of Lolieng's coast line. Lolieng had proposed to cull turtles because they believed they were the cause of a decline in seagrass which led to a decline in the availability of rabbit fish, a popular local food source.</p>


<p>Caulerpa) and improved food security.5. A Caulerpa / turtle management plan developed and ratified by the community ensures protection of turtles over 17 km of coast line.</p>	<p>WCS explained the decline in seagrass was more likely due to the human overharvesting of seaweed and seagrass, landscape changes in the near-shore area (logging), climate change and earthquake activity changing the depth of the inshore area than green turtles which were present before the decline. To address this loss of food security WCS increased crop diversity by 50% in Lolieng which led to a reported decline in food insecurity. WCS has withdrawn from Nae but suspects low level persecution of turtles continues to occur in Nae.</p>
<p>2. Development of a registered Mussau community based organization (CBO) capable of independently applying for small grants. Over the course of this project the CBO has become recognizable and trusted by the communities through the successful implementation of practical projects focused on improving village garden productivity, introducing new fencing techniques to minimize pig damage, and increasing community environmental, climate change, and conservation awareness.</p>	<p>The Lolieng community-based organization has been registered and has applied for a small grant to monitor a significant turtle nest area in Lolieng. The community is proud to have the first registered CBO on Mussau Island. The CBO successfully implemented a number of activities including those which improve agricultural productivity, minimise pig damage and community awareness on conservation issues.</p>
<p>3. Improved garden productivity combined with improved fencing techniques in the villages of Nae and Lolieng increases yields by 30%, crop diversity by 50% and reduces pig incursion by 70%. Thereby increasing food security and lessening the dependence on Caulerpa.</p>	<p>No pig incursions have occurred in the multiplication plot since the electric fence has been active (trip 3). Before the fence the Lolieng community experiences frequent pig attacks on their community garden. Harvest and distribution of multiplication stock by villagers has occurred and the model farmer approach, in which each of the 8 family clusters grow WCS crops for distribution throughout the community, is functioning well. The LSP Food Security team is managing the distribution and growing of all 8 crops introduced by WCS (sweet potato, cassava, lowland yam, winged beans, beans, corn, pumpkin and cucumber). As harvesting in the community is a continuous process farmer perception surveys were undertaken instead of recording increases in crop yield. These show that since the project began the proportion of residents in Lolieng which have insufficient food has decreased substantially while the proportion who have grown more food since the project began has increased substantially (50% of respondents surveyed) (See Compendium 5 for further details). The majority of Lolieng residents were growing between 6-9 crops at the start of the project. The distribution of all 8 crops to each family cluster therefore suggests crop diversity has</p>

	increased in Lolieng by greater than 50%.
4. The use of turtle exclosures (protective cages for Caulerpa) increases the availability of the seaweed for sustainable human harvest by 50% without impacting turtle numbers. Consequently, the Caulerpa resource is more secure and the perceived threat from turtles is diminished.	Activities relating to this impact have been abandoned. Sea trials of exclosures occurred but full implementation was abandoned due to WCS' withdrawal from Nae (as only Nae has Caulerpa) due to community issues and security concerns. Alternative activities (implementation of the pig consultants management suggestions and a CBO led poster distribution and awareness raising activity on Mussau) were approved by CEPF and undertaken.
5. The short and long-term control options for pig control on the island having been investigated for cost and feasibility allow communities and local government to make an informed decision as to the most cost effective way to manage the pig problem.	The short and long-term control options for pig control on Mussau were investigated by an ungulate eradication expert (Norman MacDonald). His report was distributed in the 3rd quarter of 2018 to the local government and the Lolieng community. WCS also assisted the Lolieng community in undertaking the community management options he had suggested (low cost net traps and a long-term corral trap) and distributed the report to the New Ireland Provincial government and civil society groups during a project close workshop in Kavieng.

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

Overall the project was successful. All major goals were achieved: the turtle cull was averted, the Lolieng CBO's capacity was substantially enhanced, the community's commitment and understanding of the need for turtle and marine conservation was substantially improved and the food security of the Lolieng community was improved through a 50% increase in crops grown in the community, the introduction of new plant derived pesticide techniques to lessen pest damage to crops and improved mulching and the use of nitrogen fixing legumes to improve soil nutrients and the establishment of three methods to lessen the impact of pig incursion on community gardens. The local government of Mussau and provincial government of New Ireland were informed of the project's developments throughout the course of the grant and a project-close workshop was held to distribute reports on the activities and successes of the project to civil society and government representatives. This will allow the provincial and local governments to draw on the successes of this project. Indeed, the provincial government expressed interest in supporting other Mussau communities to enact pig control methods which were demonstrated in this project. Furthermore, the Lolieng Sustainable Program has been registered as a CBO and has submitted their first small grant application which will allow them to continue monitoring and protecting turtles on Mussau and to continue building their capacity as a CBO.

The project suffered a major challenge when consistent misrepresentation of WCS by members of the Nae community forced WCS to withdraw from the community. Nonetheless this change allowed for a stronger focus on the Lolieng community who embraced the project and displayed a strong will to develop their own community-based organisation and implement the project activities. The change in activities necessitated by withdrawing from Nae also allowed WCS to support valuable new activities. These included a community roadshow on Mussau to increase awareness on the need for green turtle



conservation and help built the capacity of the Lolieng CBO to manage a small project. Recommendations to limit the impact of wild pigs on community gardens in Lolieng were also implemented from the consultant's pig control and eradication report.

Were there any unexpected impacts (positive or negative)?

It was unexpected that the entire community would become active members of the Lolieng CBO. However, this strong involvement by the entire community imbued the CBO was a strong sense of energy and optimism which helped them achieve a great deal over the relatively short period of the project.

The beche-de-mere harvesting season unexpectedly impacted the project as WCS was unable to hire a boat to reach Mussau over the period of the harvest. Nonetheless, an extension to the project was granted and WCS was able to complete the 6th island trip as planned in November-December. As mentioned above, the withdrawal from Nae was unexpected.

Project Components and Products/Deliverables

Describe the results from each product/deliverable:

Component		Deliverable		
#	Description	#	Description	Results for Deliverable
6	Project generates media releases, updates and stories for distribution to communities, stakeholders and national media.	6.1	Short social media stories (Twitter and Facebook) are released on at a minimum of a monthly basis.	Largely achieved
6	Project generates media releases, updates and stories for distribution to communities, stakeholders and national media.	6.2	Feature stories on the WCS Mussau project appear in the national newspapers (Post Courier and National) at least every 6 months.	A number of stories were published in national papers
1	Reconnaissance to Mussau Island is undertaken to obtain free and prior informed consent.	1.1	By 30 July 2016 two communities from Mussau (Nae and Lolieng) have given WCS free, prior and informed signed consent to undertake the CEPF funded project on the island. Undertaken on island visit:1 (Jul 16)	free, prior and informed signed consent was given by the Lolieng and Nae communities
1	Reconnaissance to Mussau Island is undertaken to	1.2	Project social safeguard and grievance	Project social safeguard and grievance mechanism protocol were followed on each island visit

	obtain free and prior informed consent.		mechanism protocols are followed with every island visit and reported quarterly. Undertaken on island visits:1, 2,3,4,5, 6 (Jul 16, Sep 16, Apr 17, Sep 17, Apr 18, Aug 18)	
1	Reconnaissance to Mussau Island is undertaken to obtain free and prior informed consent.	1.3	By 30 July 2016 an induction workshop with Kavieng stakeholders (Mussau community members resident in the provincial capital of Kavieng, and local and provincial government representatives) has occurred.	An induction workshop occurred at the start of the project
1	Reconnaissance to Mussau Island is undertaken to obtain free and prior informed consent.	1.4	By end of project a project close workshop with Kavieng stakeholders (Mussau community members resident in the provincial capital of Kavieng, and	A project close workshop occurred in December 2019 in Kavieng with representatives from the provincial and local government and civil society groups in Kavieng.

			local and provincial government representative s) has occurred.	
1	Reconnaissance to Mussau Island is undertaken to obtain free and prior informed consent.	1.5	Project environmental safeguard protocols are followed with every island visit and reported quarterly. Undertaken on island visits:1, 2,3,4,5, 6 (Jul 16, Sep 16, Apr 17, Sep 17, Apr 18, Aug 18)	Environmental safeguard protocols were followed during every island visit and reported quarterly
1	Reconnaissance to Mussau Island is undertaken to obtain free and prior informed consent.	1.6	Involuntary Restriction on Access to Resources safeguard protocols are followed and community consultation during every island visit is monitored and feedback reported quarterly: 1, 2,3,4,5,6 (Jul 16, Sep 16, Apr 17, Sep 17, Apr 18, Aug 18)	Involuntary Restriction on Access to Resources safeguard protocols were followed and community consultation during every island visit was monitored and feedback reported quarterly
2	Development of a Mussau based community	2.1	By the end of the project a Mussau based	The Lolieng Sustainable Program was developed and registered

	based organization capable of formulating and submitting small grant requests for environmental and conservation projects.		community based organization has been developed, and officially registered as evidenced by membership list and articles of association.	
2	Development of a Mussau based community based organization capable of formulating and submitting small grant requests for environmental and conservation projects.	2.2	By 15 August 2016 training and awareness materials for CBOs have been developed and printed (inclusive of training booklets and posters on climate change, local biodiversity and local environmental issues and basic project management)	Training materials were developed, printed and shared with the community
2	Development of a Mussau based community based organization capable of formulating and submitting small grant requests for environmental and conservation projects.	2.3	By 30 August 2016 off-island training has been completed for 6 people who will form the foundation of the incipient CBO (on environmental awareness, climate change, improved	Off-island training was completed with the Lolieng CBO executive to define the role of the Lolieng CBO and their small-grant application

			agricultural techniques, basic environmental monitoring and project management)	
2	Development of a Mussau based community based organization capable of formulating and submitting small grant requests for environmental and conservation projects.	2.4	By 30 September 2017 the incipient Mussau based CBO has delivered a multi-day conservation awareness workshop at Nae and Lolieng (under WCS supervision on climate change, local biodiversity, and local environmental and conservation issues)	A a multi-day conservation awareness workshop was held by the Lolieng community
2	Development of a Mussau based community based organization capable of formulating and submitting small grant requests for environmental and conservation projects.	2.5	By 30 April 2018 the incipient Mussau based community based organization (with WCS guidance and support) has run a series of community meetings in order to identify an environmental	The Lolieng CBO held a number of meetings and decided on a green turtle conservation project which they then developed into a small-grant application with help by WCS

			/conservation project for which there is widespread community support.	
2	Development of a Mussau based community based organization capable of formulating and submitting small grant requests for environmental and conservation projects.	2.6	By end of project the newly formed Mussau based community based organization has submitted its first small grant proposal.	The Lolieng CBO submitted their small grant proposal to CEPF
3	Improved garden productivity allows pig fencing to become cost and labor effective for the villagers. Targets are to increase garden yield in Nae and Lolieng by at least 30%, and crop diversity by 50%, and reduced pig incursion by 70%.	3.1	By 15 June 2016 a workplace safety manual (covering agricultural and project field work) is completed.	Workplace safety manual completed in 2016
3	Improved garden productivity allows pig fencing to become cost and labor effective for the villagers. Targets are to increase garden	3.2	By 30 August 2016 seed stock and equipment for agricultural project components have been purchased	Weed stock and equipment for the agricultural project components were purchased inline with CEPF procurement procedures.

	yield in Nae and Lolieng by at least 30%, and crop diversity by 50%, and reduced pig incursion by 70%.		inline with CEPF procurement procedures.	
3	Improved garden productivity allows pig fencing to become cost and labor effective for the villagers. Targets are to increase garden yield in Nae and Lolieng by at least 30%, and crop diversity by 50%, and reduced pig incursion by 70%.	3.3	By 30 September 2016 WCS agricultural staff have together with the incipient Mussau community based organization established crop multiplication plots on Mussau island. Undertaken on island visit: 2 (Sep 16)	Crop multiplication plots were established on Mussau island
3	Improved garden productivity allows pig fencing to become cost and labor effective for the villagers. Targets are to increase garden yield in Nae and Lolieng by at least 30%, and crop diversity by 50%, and reduced pig incursion by 70%.	3.4	By 30 April 2017 the incipient Mussau CBO together with WCS has trained all consenting householders of Nae and Lolieng in improved agricultural and fencing methods (and disbursed seed stock). Undertaken on island visits: 2	Agricultural methods were improved in Lolieng and Nae. Electric fences to protect community gardens from pigs were established in both communities.

			,3 (Sep 16, Apr 17)	
3	Improved garden productivity allows pig fencing to become cost and labor effective for the villagers. Targets are to increase garden yield in Nae and Lolieng by at least 30%, and crop diversity by 50%, and reduced pig incursion by 70%.	3.5	Agricultural monitoring (yield, diversity, garden spatial extent) is undertaken to measure effectiveness of intervention Undertaken on island visits: 2,3,4,5 (Sep 16, Apr 17, Sep 17, Apr 18)	Agricultural monitoring was undertaken on island trips 2-5.
3	Improved garden productivity allows pig fencing to become cost and labor effective for the villagers. Targets are to increase garden yield in Nae and Lolieng by at least 30%, and crop diversity by 50%, and reduced pig incursion by 70%.	3.6	Camera trap monitoring of trial and control gardens is undertaken to measure the effectiveness of improved fencing against pig incursion. Undertaken on island visits:1, 2,3,4,5 (Jul 16, Sep 16, Apr 17, Sep 17, Apr 18)	Camera trap monitoring was undertaken to assess the utility of the pig incursions. Results suggested the pigs actively avoided the electric fences.
3	Improved garden productivity allows pig fencing to become cost and labor effective for the villagers. Targets are to increase garden	3.7	By 30 July 2018 the report on the uptake and effectiveness of the agricultural project is completed.	An agricultural report details the methods used and their effectiveness was produced and shared with the Lolieng CBO and the local and provincial government.

	yield in Nae and Lolieng by at least 30%, and crop diversity by 50%, and reduced pig incursion by 70%.			
3	Improved garden productivity allows pig fencing to become cost and labor effective for the villagers. Targets are to increase garden yield in Nae and Lolieng by at least 30%, and crop diversity by 50%, and reduced pig incursion by 70%.	3.8	By 30 August 2018 a report on the uptake and effectiveness of the agricultural project is repatriated to the communities and sent to local level, district and provincial government, CEPF, NARI, and uploaded to www.wcspng.org website	The report was made and distributed to the Lolieng community, civil society groups in Kavieng, the Mussau local-level government, CEPF and the New Ireland Provincial government.
4	Aturtle cull involving the deaths of several hundred adult turtles is avoided by reducing turtle-human conflict and increasing the availability of Caulerpa for sustainable human harvest by 50% without any significant detrimental effect on turtle	4.1	By 1 August 2016 an imminent turtle cull is suspended through the signing of a memorandum of understanding with the communities of Nae and Lolieng. Undertaken on island visit: 1 (Jul 16)	This was achieved through the signing of memorandums of understanding and the Lolieng Resource Management Plan which bans turtle harvesting.

	numbers			
4	Aturtle cull involving the deaths of several hundred adult turtles is avoided by reducing turtle-human conflict and increasing the availability of Caulerpa for sustainable human harvest by 50% without any significant detrimental effect on turtle numbers	4.2	By 30 August 2016 equipment for turtle project component purchased in line with CEPF procurement procedures.	Some equipment was purchased however the turtle exclosure project was cancelled due to our withdrawal from the Nae community.
4	Aturtle cull involving the deaths of several hundred adult turtles is avoided by reducing turtle-human conflict and increasing the availability of Caulerpa for sustainable human harvest by 50% without any significant detrimental effect on turtle numbers	4.3	Seaweed (Caulerpa) spatial distribution monitoring (through use of GPS) is undertaken to examine the extent and natural fluctuations in seaweed beds around Nae and Lolieng Undertaken on island visits: 1, 2,3,4,5 (Jul 16, Sep 16, Apr 17, Sep 17, Apr 18)	Seeweed (caulerpa) was monitored until our withdrawal from Nae. Seagrass as monitored at Lolieng throughout the project and included in the Lolieng Resource Management Plan.
4	Aturtle cull involving the deaths of several hundred adult turtles is avoided	4.4	By 30 Apr 2017 the turtle exclusion experiment (large	This activity was cancelled due to our withdrawal from Nae. In its place a community roadshow to increase knowledge on turtle conservation was undertaken on Mussau and two types of pig trapping to increase food security were enacted in Lolieng.

	by reducing turtle-human conflict and increasing the availability of Caulerpa for sustainable human harvest by 50% without any significant detrimental effect on turtle numbers		prefabricated cages over Caulerpa beds) has begun with monitoring to determine the impact of turtle herbivory on Caulerpa yield. Undertaken on island visits: 3,4,5 (Apr 17, Sep 17, Apr 18)	
4	A turtle cull involving the deaths of several hundred adult turtles is avoided by reducing turtle-human conflict and increasing the availability of Caulerpa for sustainable human harvest by 50% without any significant detrimental effect on turtle numbers	4.5	Turtle abundance is monitored using fixed transect lines and employing a "distance" methodology (to assess the association of turtle abundance with restricted Caulerpa availability). Undertaken on island visits: 2,3,4,5 (Sep 16, Apr 17, Sep 17, Apr 18)	This was undertaken and reported in Compendium 5 and Azalea Aota's UPNG honours thesis.
4	A turtle cull involving the deaths of several hundred adult turtles is avoided by reducing turtle-human conflict and increasing the	4.6	By 30 July 2018 a report on the effectiveness of the turtle exclusion study, and options for improved	This activity was cancelled due to our withdrawal from Nae.

	availability of Caulerpa for sustainable human harvest by 50% without any significant detrimental effect on turtle numbers		Caulerpa management is completed	
4	Aturtle cull involving the deaths of several hundred adult turtles is avoided by reducing turtle-human conflict and increasing the availability of Caulerpa for sustainable human harvest by 50% without any significant detrimental effect on turtle numbers	4.7	By 30 Aug 2018 report on the effectiveness of turtle exclusion, and options for improved Caulerpa management are sent to communities and local level, district and provincial government, CEPF, CEPA, and uploaded to the publicly accessible www.wcspng.org	A report on turtle monitoring, conservation efforts and seagrass monitoring was made and distributed to the lolieng community and the district and provincial government
4	Aturtle cull involving the deaths of several hundred adult turtles is avoided by reducing turtle-human conflict and increasing the availability of Caulerpa for sustainable human harvest by 50% without any significant	4.8	By the end of the project the communities of Nae and Lolieng have adopted a management plan to manage the Caulerpa resource across a minimum of 17 km of coast line, and plan	A management plan was made for Lolieng including Caulerpa, seagrass, seaweed, turtles, fish and other marine resources. This covers the entire 9.5 km of Lolieng's coast line.

	detrimental effect on turtle numbers		sent to local level, district and provincial government, CEPF and CEPA	
5	The long-term options for pig control on the island are investigated. The target is to identify costed pig control and eradication options, to allow communities and government to make informed decisions regarding the future management of the pig problem.	5.1	By 30 Sep 2016 a hazard map of pig encounters based on local experience has been compiled for the wider regions surrounding the villages of Nae and Lolieng. Undertaken on island visit: 2 (Sep 18)	A hazard map was made for Lolieng village.
5	The long-term options for pig control on the island are investigated. The target is to identify costed pig control and eradication options, to allow communities and government to make informed decisions regarding the future management of the pig problem.	5.2	By 30 Sep 2017 a consultant report on the options for pig control (and eradication) has been completed by an ungulate eradication expert.	The consultant report was made by ungulate eradication expert Norm MacDonald. This has been shared with the Lolieng community and the provincial and district government.
5	The long-term options for pig	5.3	By the 30 Sep 17 long-term	Pig control options were detailed in the ungulate experts report. Two pig traps styles recommended were

	control on the island are investigated. The target is to identify costed pig control and eradication options, to allow communities and government to make informed decisions regarding the future management of the pig problem.		control options for pig control have been investigated and repatriated to the community (and CBO) and report sent to district and provincial government, CEPF, CEPA and uploaded to the publicly accessible www.wcspng.org website	implemented in Lolieng and a simple guide to make one of these was made (net trap).
7	Monitoring for CEPF indicators	7.1	By 15 June 2017 an Excel database has been established to track CEPF monitoring indicators	Done (see Compendiums)
7	Monitoring for CEPF indicators	7.2	On each of the 6 field trips CEPF indicators are monitored (e.g. beneficiaries disaggregated by gender, hectares with improved protection and management recorded etc.). Undertaken on island visits (Jul 16, Sep 16, Apr 17, Sep	Done (see Compendiums)

			17, Apr 18, Aug 18)	
7	Monitoring for CEPF indicators	7.3	CEPF Civil society tracking tool is completed at the beginning and end of grant. to track the progress of the Mussau community based organization	Done (see Compendiums)
7	Monitoring for CEPF indicators	7.4	Staff timesheets are completed and compiled for each month of the project.	Done

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

- **A pig eradication and control report for Mussau island was produced and shared with the Lolieng community and the Mussau local-level government and New Ireland provincial government.**
- **A community guide to produce net traps to capture pigs was produced and distributed to the Lolieng community and to the Mussau local-level government and New Ireland provincial government.**
- **Eight new agricultural crops/varieties and new methods of pest and disease management and soil nutrient conservation were successfully introduced to the Lolieng community. A report on these initiatives was provided to the Lolieng community and the Mussau local-level government and New Ireland provincial government.**
- **A brochure and poster detailing the importance of green turtle conservation was produced and shared widely on Mussau and with the Mussau local-level government and New Ireland provincial government.**
- **A Marine Resource Management Plan was produced by the Lolieng community with support from WCS. A ratification ceremony for this plan was held during the 6th island trip. The plan should assist the Lolieng community to sustainably manage their marine resources and prevent the harvesting of turtles after the project has concluded.**
- **A guide to turtle track monitoring on Mussau was prepared by WCS for LSP to support their monitoring efforts during their proposed small grant project.**



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:

- Project Design Process (*aspects of the project design that contributed to its success/shortcomings*)
- Project Implementation (*aspects of the project execution that contributed to its success/shortcomings*)
- Describe any other lessons learned relevant to the conservation community

WCS learnt much from working with the Lolieng community. Taking the time to include input from the whole community before implementing project activities greatly increased buy-in by the Lolieng community and was essential to the success of the project. Spending this time also allowed for the identification of ‘community champions’ who had the passion and understanding to take a lead in organising the community and/or undertaking activities. Fostering the enthusiasm and passion of these people became essential to successfully establishing LSP.


WCS included women in all activities and held women only meetings during each island visit. We observed this to increase the participation of women in project activities. It also improved the quality of our and LSP’s work as suggestions raised during the women’s only meetings regular revealed environmental knowledge or ways of working effectively with the community which WCS would otherwise have overlooked

We also saw the power of helping communities lead activities. This was displayed during the community awareness raising roadshow on Mussau. WCS provided the budget for the activity to LSP and encouraged the community to lead in all aspects of the small project’s design and implementation. This improved the community’s ability to manage a small project. Moreover, the roadshow increased the Lolieng community’s pride in their achievements over the course of the project and helped reinforce the value of their work to conserve green turtles. WCS also observed that conservation messages were more receptively received by other Mussau community members when presented by the Lolieng community. With discussion on turtle conservation and LSP’s activities often continuing for hours after the official community meeting had concluded.

Sustainability / Replication

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

The successful establishment of the Lolieng CBO and the high support of the Lolieng community for the ban on turtle harvesting and the sustainable management of other marine resources as outlined in the Lolieng Marine Resource Management Plan will ensure the sustainable management of Lolieng’s marine resources and their ban on turtle culling are sustainable. The LSP agriculture team



was observed to be continuing the co-ordinating and sharing of new agricultural crops throughout the community on the 6th island trip. We are confident that they will continue these activities and the use of the net and corral pig control traps. These activities should ensure food security is improved in Lolieng after the project. The LSP Biological Monitoring team showed leadership in developing the recently submitted LSP small grant application and will continue turtle monitoring and conservation awareness after the project has ended. Overall there is therefore a high likelihood that many of the successes and activity of the project will be continued and expanded upon by the Lolieng CBO and community.

Reports of the agricultural actions and successes, on pig eradication and community control methods on Mussau Island and on sea turtle and marine conservation were distributed to the Mussau local-level government and New Ireland provincial government. During the project-close workshop representatives from both levels of government expressed interest in expanding project activities to other areas in Mussau. For instance the New Ireland Provincial representative indicated that they would look into expanding the use of solar-powered electric fences to protect community gardens from pig attack to other communities on Mussau Island.

Safeguards

If not listed as a separate Project Component and described above, summarize the implementation of any required action related to social, environmental, or pest management safeguards

Safeguards are listed in the compendium reports.

Additional Comments/Recommendations

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

n/a

Additional Funding


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

Total additional funding (US\$)

\$0.00

Type of funding

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

- 
- 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 investment or successes related to this project)*

No additional funding was secured however a small-grant for the Lolieng community has provisionally been granted by CEPF

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.

1. Please include your full contact details (Name, Organization, Mailing address, Telephone number, E-mail address) below

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