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**Developing community capacity for
sustainable marine aquaculture in
Vanuatu**

Roche, Ronan | School of Ocean Sciences

Funding sought
Project start/end

£5,750.00
8 Nov 2018 - 21 Nov 2018

1. Contact Details

Q1. Lead applicant contact details

Please enter the contact details for the lead applicant. The lead applicant is the same as the Flexi-Grant account holder. Please note that the Flexi-Grant account holder will be the only contact point for the application.

Dr Ronan Roche

Research Fellow
School of Ocean Science
Primary Applicant

CAMS, School of Ocean Sciences, Menai
Bridge, Anglesey, LL59 5AB, United Kingdom
(Work)

Prof Lewis LeVay

Director
School of Ocean Science

www.cams.bangor.ac.uk (Work)

CAMS, School of Ocean Sciences, Menai
Bridge, Anglesey, LL59 5AB, United Kingdom
(Work)

Q2. Lead organisation contact details

Please enter the applicant organisation details

School of Ocean Sciences

www.bangor.ac.uk/oceansciences (Work)

Askew Street, Menai Bridge, Anglesey, LL59
5AB, United Kingdom (Work)

Please add any 'Committee Feedback' to the field below:

|

Please add any 'Specific Ineligibility' feedback to the field below:

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Please add any 'Conditions' to the field below:

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Please add any 'Positive Feedback' to the field below:

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2. Title & Location

Q3. Working title of the proposed Darwin project

Developing community capacity for sustainable marine aquaculture in Vanuatu

Q4a. Host country (of proposed Scoping trip)

Vanuatu

Q4b. Other collaborating country/ies

Q5. Is this a resubmission of a previous scoping application?

No

3. Scoping Principals & Lead Organisation Summary

Q6. Principals in Scoping work i.e. the travellers

Please give the details of the individuals (up to 2) from the lead organisation who would be directly involved in the Scoping work - i.e. making a visit to a host country. One page CVs must be provided.

Details	Main traveller	Second traveller
Surname	Roche	LeVay
Forename(s)	Ronan	Lewis
Post held	Research Fellow	Director
Department	School of Ocean Sciences	School of Ocean Sciences
Telephone/Skype		
Email		
Country travelling from	UK	UK
Please attach the traveller's CV		

Q7a. About the lead applicant organisation

Briefly discuss your expertise in sustainable use or conservation of biodiversity and/or development. Please refer to recent track record you have in this field. You may be asked to provide evidence of this track record.

The School of Ocean Sciences within Bangor University has a world-class reputation for marine sciences, as well as applied aquaculture, biodiversity conservation, international marine resource management and development work. It is one of the largest multi-disciplinary marine science departments in Europe, and has been

established for over 70 years. Staff at the School of Ocean Sciences are engaged in research projects funded by UK research councils, government departments (including Defra and DFID), as well as charitable organisations and private foundations. The School of Ocean Sciences has previously led 5 Darwin projects, most recently to establish and foster engagement with a marine protected area (MPA) system in the Cayman Islands, and to strengthen the MPA surrounding the Chagos Archipelago, in the Indian Ocean, in which Ronan Roche co-led the reef status assessments. Lewis LeVay has led projects on larval nutrition, and stock enhancement strategies in SE Asia, East Africa and the Arabian Gulf. There is thus a range of experience in formulating, managing and carrying out biodiversity conservation and international development projects, within the School of Ocean Sciences, which this project intends to build upon.

Q7b. Would you like to include a letter of support from the lead applicant?

Yes

The limit for any single file uploaded as supporting materials with your application is 6MB. Please ensure documents are saved in PDF form where possible in order to minimise size.

5. Project Partners

Q8. About the partner organisation(s)

Please list all the partners involved and explain their roles and responsibilities in the Scoping work. Briefly discuss your partner's expertise in sustainable use or conservation of biodiversity and/or development. Please refer to recent track record they have in this field. You may be asked to provide evidence of this track record. If there is more than 1 partner organisation, you can enter the details of more partners below. Please specify which of the partners is new to the partnership.

1. Partner Name:	The Pacific Community (Secretariat of the Pacific Community or SPC)
Website address:	http://www.spc.int
Details of anticipated roles and responsibilities:	<p>The SPC have established collaborative links with the School of Ocean Sciences, and has identified key challenges within aquaculture in Vanuatu.</p> <p>The role of the SPC within the scoping work is to act as local co-ordinator and facilitator, and assist in identifying knowledge gaps that the main project can address.</p>

<p>Expertise in sustainable use or conservation of biodiversity and/or development:</p>	<p>The Pacific Community (SPC) is the principle scientific and technical organisation in the Pacific region, and has been involved in development projects since 1947. It is an international development organisation owned and governed by 26 country and territory members.</p> <p>The focus of much of the SPC's work is on major cross-cutting issues such as climate change, food security, gender equality, human rights and youth employment. They draw upon skills and capabilities from around the Pacific region and internationally to support the empowerment of Pacific communities.</p> <p>SPC are involved in a range of aquaculture projects across Pacific Nations whose aim is to develop sustainable systems to provide food and livelihoods.</p> <p>Examples of recent projects include supporting the replenishment of sea cucumber stocks in countries such as Kiribati, Fiji, Solomon Islands, and the Cook Islands through hands-on training in sea cucumber and microalgae hatchery techniques.</p>
<p>Name of main contact point and post held:</p>	<p>Mr. Robert Jimmy (Aquaculture Advisor, SPC)</p>
<p>Would you like to include a letter of support from this organisation?</p>	<p><input checked="" type="radio"/> Yes</p>
<p>Letter of Support:</p>	<p>The limit for any single file uploaded as supporting materials with your application is 6MB. Please ensure documents are saved in PDF form where possible in order to minimise size.</p> <div style="border: 1px solid gray; height: 40px; width: 100%;"></div>

Do you have more than one partner involved in the Scoping work?

No

Q9. Can you confirm that none of the partners (excluding the lead applicant) have led a Darwin Initiative Main Project before?

Yes

6. Justification & Concept Notes

Q10. Justification of need for a Scoping Award

Please provide written details of why alternative funding is not available from within your own organisation or from other sources. Will matched funding be provided?

No funding is available from within Bangor University or the School of Ocean Sciences for the development of prospective grant applications involving overseas travel. No funding is available from the Pacific Community to bring individuals from the UK to Vanuatu for meetings and site visits.

Match funding will be provided from Bangor University in the form of salary, overheads and insurance for 10 days time of Prof Lewis LeVay and Dr. Ronan Roche totalling £13, 611 during the scoping award.

Further match funding will be provided within this scoping award from the Pacific Community, in the form of staff time and assistance in arranging workshops, translation, meetings and site visits.

Without Darwin Initiative funding it would not be possible to carry out this project. At present, Darwin Initiative funding is the most applicable to the work we hope to undertake in partnership with the SPC and coastal communities in Vanuatu. It will allow meetings with communities in Vanuatu that would be highly problematic to undertake electronically, and will allow better design of the main project to aim for equitable distribution of benefits between genders and social groups.

Q11. Concept note for the Scoping Award

This question concentrates on the scoping study work and should demonstrate the objectives of the Award including:

- objectives of the visit
- what work (including research, remote communications or other collaborations) has been carried out prior to applying for this Award
- what work will be carried out under the Award – please see the guidance for advice on what type of activity can be funded
- evidence of the proposed partners' intentions to collaborate in your Scoping work

The objectives of the visit :

The objective of the scoping trip is to engage with a range of stakeholders around Vanuatu, particularly residents and representatives from villages which are heavily involved in ornamental aquaculture to:

- 1) Rapidly assess the constraints within current methods of giant clam farming, (species cultivated, hatchery and on-growing systems, sea-cages, coastal water

quality, hatchery protocols).

2) Discuss with stakeholders the potential for clam farming to contribute to increased coastal water quality and restoration of giant clams on reefs.

3) To examine how benefits from clam farming are distributed within villages and between genders in communities in Vanuatu.

4) To assess the potential for, and challenges associated with trialling mixed reef fish larval culture within rural communities in Vanuatu.

What work (including research, remote communications or other collaborations) has been carried out prior to applying for this award:

Researchers at the School of Ocean Sciences and representatives from the SPC have been remotely corresponding regarding challenges facing small-scale aquaculture initiatives in Vanuatu since early 2017. A range of potential projects have been discussed and selection has been refined to topics which: 1) the SPC recognise as priorities that fit with long-term visions and would most benefit local communities, 2) researchers at the School of Ocean sciences can contribute most to in terms of added expertise.

What work will be carried out under the award:

1. Continuing discussions with partners to plan the optimum individuals to engage with during the field visits and workshops.

2. Meet with Mr Robert Jimmy and colleagues within the SPC and officials from the Vanuatu Fisheries department, Mr Sompert Gereva and Mr Andrew Williams, both fisheries aquaculture managers.

3. Meet with additional identified stakeholders such as relevant development and conservation NGOs, and private companies such as Mr Derek French of Aquaculture Solutions.

4. Finalise identification of the study sites and villages to be included in the main project, ensuring a balance between distribution of the sites across the islands of Vanuatu and the logistics of accessing sites.

5. Hold a workshop in Port Vila, co-arranged with SPC, for additional stakeholders to identify the challenges and capacity gaps within giant clam farming and mixed reef fish culture.

6. Visit at least two coastal villages heavily involved in giant clam farming, to carry out semi-structured interviews, and survey grow out areas.

7. Assess existing capacity by visiting at least two aquaculture hatcheries (relevant to postlarval fish culture), both governmental and community led, and the existing giant clam sanctuary on Malekula Island.

8. Collaboratively write a briefing paper on giant clam culture and postlarval reef fish culture feasibility and socio-economic benefits for Vanuatu-based institutions and

stakeholders.

Evidence of the proposed partners' intentions to collaborate in your Scoping work:

The project partners have been actively engaged in a range of discussions on the interactions between aquaculture activities, marine biodiversity and community income and well-being. Letters of support indicate the desire for the scoping trip to take place, and the planning of activities within the scoping study.

Q12. Concept note for the resultant project

This question concentrates on the full Darwin application you intend to submit after the Scoping Award and should discuss:

- the expected outcome and outputs of the resultant Darwin project
- how the resultant Darwin project would meet a need in the host country (and the wider region if applicable e.g. if the proposed project would be based in a UMIC)
- how the project would contribute to any or all of the following Conventions: the Convention on Biological Diversity (CBD); the Nagoya Protocol on Access and Benefit-sharing (ABS); the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA); the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)
- how the project will contribute to sustainable development in the country concerned
- briefly what the proposed partner's/s' expected role in the resultant Darwin project will be
- briefly the expected role of the Scoping travellers in the resultant Darwin project.

Outcome:

- 1) Improved knowledge of methodologies and conditions required for giant clam larval rearing and grow-out, and post-larval reef fish capture and culture.
- 2) Increased financial resilience (poverty alleviation) in coastal communities, through a reduction in aquaculture mortality rates and an improved product.
- 3) Safeguarded coral reef biodiversity via clam restoration areas and reef fish restocking, increased local awareness of interactions between coastal water quality and artisanal aquaculture.

Outputs:

- 1) Participatory diagnosis of current methodologies within giant clam farming.
- 2) Identification of mechanisms and suitability of reef zones for giant clam restoration.
- 3) Data from chosen villages utilising a multidimensional poverty assessment toolkit (MPAT), employed at project start and end.
- 4) Training for key community individuals in clam and fish culture techniques at the School of Ocean Sciences.
- 5) Production of a feasibility report on the certification of reef fish from cultured sources.

Giant clams are an important source of income in rural villages in Vanuatu, due to their value as marine ornamentals. There are problems facing the regular supply of seed clams, and high mortality rates, associated with sub-optimal conditions. The main hatchery producing clam seed was destroyed by a category 5 cyclone in 2015, resulting in inconsistent seed supply, and livelihood difficulties.

Species cultivated are primarily *Tridacna gigas*, but also *T. squamosa*, *crocea* and *maxima*. *T. gigas* were traditionally harvested, and are functionally extinct in their native habitat—the collection and trade of wild caught giant clams is banned in Vanuatu and all exported animals are cultured. Difficulties in restocking giant clams in the wild are reliability of larval production, and identification of suitable long-term grow-out sites.

The reef fish marine ornamental industry presents an additional opportunity to achieve biodiversity benefits whilst increasing livelihood diversity and income within Vanuatu. The capture of wild caught adult reef fish is financially lucrative, but impacts reef ecosystems. Refining techniques for local post-larval capture and culture (PCC) of reef fish (collection with light traps, translocation to grow-out facilities) avoids reef habitat damage, and can boost ecosystem resilience. PCC provides valuable adults for ornamental resale, whilst enabling multi-species stock enhancement via the release of remaining individuals.

Contribution to Conventions:

This project will assist Vanuatu in achieving the following Aichi Biodiversity Targets under the CBD: Target 10) by minimising anthropogenic pressure on coral reefs and maintaining their functioning, 14) by safeguarding the essential services of ecosystems, and contributing to livelihoods, taking into account the needs of local communities, the poor and vulnerable.

Contribution to Sustainable Development:

The project will contribute to lasting improvements in knowledge and skill enabling Vanuatu to financially benefit from coral reef assets, in ways that are non-detrimental, or beneficial to marine biodiversity.

Proposed partner's role:

SPC has long-standing contacts within mariculture stakeholders and will assist in meeting and workshop facilitation, and exchange expertise. SPC will identify key locals for mariculture training at Bangor University.

Scoping traveller's role:

The scoping travellers will co-lead and deliver the main project, with partners in Vanuatu, and work with 'exchange individuals' at Bangor University.

7. Costs

Q13. Costs

Provide a detailed breakdown of costs to be funded by the Darwin Initiative in GBP.

	Main traveller	Second traveller	Total
Airfare including travel to airport			2,750.00
Visas and other travel documents			0.00
Total daily subsistence claimed (please provide details below)			2,300.00
Workshop costs (please provide details below)			£450.00
Other costs (please provide details below)			£250.00
		Total request from Darwin (must not exceed £10,000)	5,750.00

Additional details to support the figures above

	Main traveller	Second traveller
Daily subsistence rate per day	£115.00	£115.00
Number of days subsistence claimed (max 30 days per traveller)	10	10

Workshop costs

Please provide further details on your workshops costs.

These costs include;

Catering for 15 people at a total cost of £135 for a scoping workshop
Printing and consumables at a total cost of £35 for a scoping workshop
Travel to remote aquaculture sites in Vanuatu to conduct site meetings and surveys at a total of £280

Other costs

Please provide further details on your other costs.

This is for vaccinations and anti-malaria medication, in line with recommendations for travel to Vanuatu (<http://www.fitfortravel.nhs.uk/destinations/australasia--pacific/vanuatu.aspx>).

8. Timetable & Activities

Q14. Activities and timings

Please complete the Scoping Award Timetable to include your anticipated dates of travel (start and finish) and activities to be undertaken on your trip. **N.B.:** this question is specifically about your travel plans – your dates and specific milestones during travel – NOT your timetable to Stage 1 application. Your application will be considered ineligible if this section does not specifically cover your planned scoping trip.

Date	Milestone
08/11/2018	START
08/11/2018	Flight to Port Vila (please note these exact timing of dates will be dependent on achieving the lowest airline costs)
12/11/2018	Meet with SPC and Vanuatu Fisheries Department, finalise identification of the study sites and villages to be included
14/11/2018	Meet with Aquaculture Solutions and identified NGOs
15/11/2018	Hold workshop in Port Vila co-arranged with SPC
17/11/2018	Visits to villages, aquaculture hatcheries giant clam sanctuary, Malekula Island
19/11/2018	Final meetings with partner to review visit and continue main project application
19/11/2018	Return flight Port Vila to UK

21/11/2018	FINISH

Q15. In what year would you expect to submit the full Darwin project application?

Round 26

9. Certification

Q16. Certification

On behalf of the

trustees

of

School of Ocean Sciences, Bangor University

I apply for a grant of

£5,750.00

in respect of all expenditure to be incurred during the lifetime of this project based on the activities and dates specified in the above application.

I certify that, to the best of our knowledge and belief, the statements made by us in this application are true and the information provided is correct. I am aware that this application form will form the basis of the scoping schedule should this application be successful.

(This form should be signed by an individual authorised by the applicant institution to submit applications and sign contracts on their behalf.)

- I have uploaded CVs for project principals
- I have uploaded letters of support from the lead application organisation and the partner(s)



Name	Clare Williams
Position in the organisation	Research Funds Manager
Signature (please upload e-signature)	

Date

02/02/2018

If this section is incomplete the entire application will be rejected.

10. Submission Checklist

Checklist for submission

	Check
Have you provided anticipated start and end dates for your Scoping trip?	<input checked="" type="checkbox"/>
Has your application been signed by a suitably authorised individual?	<input checked="" type="checkbox"/>
Have you read the Guidance documents for both <u>Main projects</u> and <u>Scoping awards</u> , and are you satisfied that your concept would be eligible for a main project application?	<input checked="" type="checkbox"/>
Have you read the current <u>Terms and Conditions</u> for this fund and can you confirm you are willing to be bound by these if your application is successful?	<input checked="" type="checkbox"/>
Have you uploaded 1 page CVs and letters of support as required?	<input checked="" type="checkbox"/>
Have you checked the <u>Darwin website</u> immediately prior to submission to ensure there are no late updates?	<input checked="" type="checkbox"/>