

Travel grants for sustainable aquaculture in Southeast Asia

Findings report

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1. Summary of the travel grant

With support from the FCDO's RIDA fund, the British Embassies and High Commissions in Indonesia, Malaysia, Philippines, Thailand and Vietnam, represented by the SIN Officers in Hanoi and Manila, delivered a travel grant scheme to sponsor one-week business visits for four individual UK academics to five above-mentioned countries in March and April 2024. The scheme aimed to build partnerships between UK and SEA research collaborators and explore mutual research priorities in the field of sustainable aquaculture for HMG in SEA.

Evidence collected through this activity suggests HMG research support in SEA should focus on a systems approach to understanding and monitoring threats on the sector in SEA, accelerating the application of research into real-life solutions, and harnessing new technical approaches (e.g. Integrated Multi-Trophic Aquaculture, Internet of Things, Artificial Intelligence).

2. Background

Through the International Science Partnership Fund (ISPF), BBSRC is delivering a £12 million research programme on Sustainable Aquaculture in SEA. The programme will fund three-year bilateral or multilateral research projects between researchers in the UK and SEA. It is the first time there is such a large investment in research collaboration between the UK and SEA in aquaculture.

The British Embassy Hanoi and the British Embassy Manila recognised the need to build linkages between leading research organisations specialising in aquaculture in the UK and SEA to maximise the quantity and quality of research proposals. Since BBSRC plans to fund a total of four projects, we realised that the original idea to hold a workshop with 50 people (including 10 UK academics) wouldn't be necessary anymore. Consequently, it has been agreed between SEA SIN Officers, SIN Regional Director and SARH representative (Brendan Donegan) that a travel grant scheme would be more cost-effective than an in-person networking event to facilitate the connection between potential UK and SEA collaborators in that context.

Given the potential for the activity to support evidence gathering around research and innovation priorities across SEA, the Research and Innovation for Development in ASEAN (RIDA) was identified as a suitable fund. A proposal case for RIDA funding was approved in December 2023.

A call for applications opened on gov.uk in January and closed in February 2024. A review panel that consisted of SIN Officers and BBSRC reviewed and eventually accepted four proposals from the academics indicated in the following table. It was important because BBSRC was able to comment on the eligibility and relevance of the applications. It was also to demonstrate SIN's transparency, i.e. we did not favour anyone over another.

Name	Faculty & Organisation	Country 1	Country 2	Country 3
Prof. Benz Kotzen	School of Design, University of Greenwich	IPB University, Indonesia	University of the	

			Philippines, Philippines	
Prof. Paul Kemp	School of Engineering in the Faculty of Engineering and the Physical Sciences, University of Southampton	Nguyen Tat Thanh University, Research Institute for Aquaculture No2, Vietnam	University of Brawijaya, National Research and Innovation Agency, Indonesia	
Dr. Shovonlal Roy	School of Archaeology, Geography and Environmental Science, University of Reading	University of Philippines Visayas, Philippines	Kasetsart University, Thailand	
Dr. Seetharaman Vaidyanatha	Faculty of Engineering, University of Sheffield	Mahidol University, Thailand	UniMAP, Malaysia	Universitas Diponegoro, Indonesia

3. Outcome of the visits

Most of grant holders completed the visits as per original plans, except for cancellation of two site visit due to a flight delay and last-minute unavailability of a partner.

Reported outputs include visits to universities and aquaculture farms, which enabled them to gain an understanding of stakeholders in the local aquaculture system; talks and workshops with local collaborators to build capacity, stimulate interest, understand local priorities, including key species, approaches, and challenges, as well as assess existing facilities and capabilities in SEA partner organisations.

In some cases, researchers have identified commonalities between SEA countries, e.g. Vietnam and Indonesia, Thailand and the Philippines, which lead to potential for multilateral projects.

Grant holders have reported productive and fruitful engagement with local collaborators leading to plans for joint research proposals.

The identified challenges align with the ISPF's BBSRC call focus: economic security and climate resilience. The visits provided UK collaborators with real appreciation on the local situation, such as the conflict between agriculture and aquaculture due to reduced flows of water and increased frequency and intensity of flooding. From the social science perspective concerns were raised on the economic insecurity associated with fish farming, reflecting a "hand-to-mouth" livelihood in which long term security was absent, with many not knowing if their income was assured from week to week. As part of the systems approach, there was an interest in incorporating techno-economic analysis and sustainability assessment.

Below are some concrete scientific assessments observed from the visits:

Indonesia:

- In Indonesia and Vietnam, the integration of shrimp, fish, and seaweed was considered very beneficial and an area to develop further, partly because the seaweed may provide behavioural enrichment for the fish species cultured.
- In Indonesia and the Philippines, the loss of mangroves has not only meant the loss of ecosystem services for local people, such as harvesting shrimp and crustaceans, but the loss in water quality has meant that shrimp and fish farms are no longer viable. Furthermore, the nurseries provided by the mangroves for fry and fingerlings which make their way to the sea has been lost.

Philippines:

- In the Philippines, red tide blooms are a major disruptive phenomenon at the Integrated Multi-Trophic Aquaculture (IMTA) sites, particularly in the Capiz province, which is known as the Seafood Capital of the Philippines. An early warning system for red tide bloom is required for sustainable livelihood of the fish farmers and local communities.
- Harvesting of shellfish in Capiz province (PH) is banned due to harmful algal bloom for around 6 months every year. To compensate for the long disruption in harvesting due to environmental conditions, the local authorities in Philippines need to facilitate alternative employment opportunities for the fish farmers and the community that otherwise solely depend on aquaculture.
- Milkfish is an economically important seafood for the Philippines, which is currently farmed in IMTA sites. As this practice is getting popular, advanced monitoring of the water quality, algal toxins, and developing predictive modelling capability, are required to support sustainable Milkfish production in cages within an IMTA set up.

Thailand:

- Thailand made progress in implementing the selective breeding technique in the experimental set up. To meet the demands of mariculture of fish, Thailand could build on their existing selective breeding programme, which has shown promise for Asian Seabass. Developing advanced predictive models coupled with selective breeding would help investigate the sustainability of this approach in IMTA sites and hence scale up the production.
- IMTA sites in Thailand require regular monitoring, and potentially early warning, for environmental fluctuations such as algal bloom and hypoxia. Hypoxia and blooms have significantly impacted the mariculture production in IMTA sites.
- Short-body mackerel is an important fish in Thailand, which is culturally integrated into Thai communities, and is very popular in Thailand. The availability of this fish in natural habitats has reduced over the years. Thailand is keen on bringing back the short-body mackerel in its natural habitat, and potentially in aquaculture.

Malaysia:

- In Malaysia, agricultural waste biomass utilisation for sustainable aquaculture production and development of multitrophic aquaculture systems research interest is noted as a potential area for collaboration.

4. Recommendations on "What should the UK government prioritise in the work on aquaculture in ASEAN/Southeast Asia"

- Taking a systems approach incorporating techno-economic analysis and sustainability assessment. Incorporating education, community engagement, policy and political outreach, recognising that many fish farmers are not necessarily educated.
- Integrated Multi-Trophic Aquaculture (IMTA) should be conducted to assess the advantages and disadvantages of IMTA over a range of scales from extensive, to super intensive through the creation of demonstration sites.
- Introduction of novel approaches and technologies in aquaculture, e.g. combination of tourism and aquaculture; adoption of the “Internet of Things” (IoT) to improve efficiency of aquaculture, reducing the waste and time associated with traditional practices; developing Artificial Intelligence (AI) for monitoring and diagnosing disease in aquaculture units.
- Consider working on species that the UK has wealth of knowledge and experience. For instance, the UK’s experience with the North Atlantic Mackerel may provide complementary knowledge, and advanced process-based modelling and satellite-based monitoring could help in better understanding the dynamics of this fish, prior to trialling with cage cultures.
- Fast track mangrove reforestation is essential for coastal resilient aquaculture in SE Asia.

5. Benefits from the visits? - This can include your (as SIN officers) commentary on the professors'/academics' recommendations in their study/visit.

Recommendations made by academics after site visits confirmed that there is a strong appetite for cooperation with the UK in sustainable aquaculture from both science and development approach. The motivation is real from the pressure of climate change, livelihood security and export value. SEA are willing to adopt the most advanced emerging technologies and good farming practices in aquaculture.

In general, the findings align well with BBSRC’s call remit, except recommendations to include social sciences angle. We look forward to receiving strong applications from these academics.

Connections made during the visits have opened up other potential collaborations beyond the BBSRC’s programme. We have been informed by one team that they have submitted an application to the DEFRA’s OCEAN programme. It is a good sign of the leverage of the investment in the partnership building.

In all individual reports, academics expressed their appreciation of the opportunities given by FCDO to see everything at first hand. They quoted that field trip additionally increased their knowledge of the issues and potentials and constraints and identified sites where the site based research can be undertaken. The fieldtrip was extremely important in meeting collaborators, finding new collaborators and building trust and confidence in the proposed bids.

Annex – Call specification

[Research partnership building to enhance aquaculture systems in South East Asia - GOV.UK \(www.gov.uk\)](#)

Research partnership building to enhance aquaculture systems in South East Asia

FCDO invites applications for travel grants from UK-based researchers to build connection and research partnerships with local SEA collaborators.

Call open: 15 January 2024.

Call closes: 5 February 2024, 23:00 (UK time).

Value of funding: Up to £2,700/grant.

What the travel grant will achieve

This initiative aims to support a [UKRI-led Sustainable and Resilient Aquaculture Systems in Southeast Asia](#) Research Programme under the International Science Partnerships Fund (ISPF) by facilitating multilateral high-quality interdisciplinary research proposals.

The travel grants are funded by FCDO's Research and Innovation for Development in ASEAN (RIDA) project.

Eligibility for the travel grant

- the applicant must hold a PhD degree or have equivalent research experience
- the applicant must be based at a UK University or eligible research organisation, which is eligible to receive funding from UK Research and Innovation (UKRI)
- the visit must take place in at least 2 countries among 5 countries: Indonesia, Malaysia, Philippines, Thailand, and Vietnam
- the applicant has submitted Notification of Intent (NOI) to submit research proposal(s) to BBSRC

Priority sectors

- resilience to climate change and environmental variability whilst also protecting the natural environment
- reducing production losses due to disease and improving plant and animal health and welfare

Eligible expenses

- each travel grant will sponsor a one-week visit for a UK-based researcher. The visit must finish by 20 March 2024. The value of each grant is set at a maximum of £2,700.

Deliverables

At the end of the visit and no later than 25 March 2024, the grant holder must submit a report outlining specific research objectives and opportunities within the individual countries visited, or wider ASEAN, that the UK government, researchers, and academics may work on in the future.

The findings and recommendations must be supported by, at the minimum, information about the SEA country's performance in the aquaculture sector and/or sub-sectors in aquaculture, its strengths and weaknesses and how the UK's expertise can add value to that context.

How to apply

Applications should be emailed to phan.huong@fcdo.gov.uk and karen.hipol@fcdo.gov.uk by 11pm Greenwich Mean Time (GMT) on 5 February 2024.

- [Call guidance: Research partnership building to enhance aquaculture systems in South East Asia](#)
- [Travel grants application form](#)
- [Budget proposal template](#)

Contacts

Fund owner: Research and Innovation for Development in ASEAN (RIDA), under Research and Evidence Directorate (RED), FCDO.

Travel Grant contacts: Huong Phan, British Embassy Hanoi, phan.huong@fcdo.gov.uk and Karen Hipol, British Embassy Manila, karen.hipol@fcdo.gov.uk

Annex – Call Guidance

Travel Grant: Research Partnership Building for Enhancing Aquaculture Systems in Southeast Asia (SEA)

Call closes: 5 February 2024, 23:00 (UK time).

Value of funding: Up to £2,700/grant.

Each grant holder will be requested to submit a final report at the end of the visit by 25 March 2024.

FCDO invites applications for travel grants from UK-based researchers to build links and research partnerships with local SEA collaborators that will advance sustainable aquaculture systems in SEA.

This initiative aims to support a UKRI-led research call under the International Science Partnerships Fund (ISPF) by facilitating multilateral high quality interdisciplinary research proposals.

The travel grants are funded by FCDO's Research and Innovation for Development in ASEAN (RIDA) project.

Background

The £12M ISPF Official Development Assistance (ODA) "[Sustainable and Resilient Aquaculture Systems in SEA](#)" Programme aims to fund interdisciplinary research grants focused on sustainable, resilient and productive aquaculture systems for economic and sustainable development in SEA.

The research grants will support UK Project Leads (PL) to work with International Co-project leads in Indonesia, Malaysia, Philippines, Thailand and/or Vietnam.

Projects will address local challenges through co-creation and equitable partnerships, be designed to have tangible impacts within SEA, meet the needs of those whose livelihoods are dependent on aquaculture systems as well as communities who are impacted. Project teams will be encouraged to collaborate with local and national government agencies, the private sector, civil society organisations and local communities, as appropriate to the challenges and research needs.

For more information about the research call, please click [here](#).

Eligibility for the Travel grant:

- The applicant must hold a PhD degree or have equivalent research experience.
- The applicant must be based at a UK University or eligible research organisation, which is eligible to receive funding from UK Research and Innovation (UKRI).
- The visit must include at least two countries among five countries: Indonesia; Malaysia; Philippines; Thailand; and Vietnam.
- The applicant has submitted Notification of Intent (NOI) to submit research proposal(s) to BBSRC.

Priority sectors:

- Resilience to climate change and environmental variability whilst also protecting the natural environment.
- Reducing production losses due to disease and improving plant and animal health and welfare.

Eligible expenses:

Each travel grant will sponsor a one-week visit for a UK-based researcher. The visit must finish by 20 March 2024. The value of each grant is set at a maximum of £2,700.

The grant will cover the following expenses:

- Economy-class return air ticket between UK and SEA.
- Economy-class air-tickets between SEA countries.
- Hotel accommodation.
- Daily expenses (meals, airport transfer and local travel).
- Travel insurance.
- Visa fee (if applicable).

Selection criteria:

- The applicant's track record which is relevant to the scope of the ISPF UKRI's research call.
- The extent to which the visit will contribute towards multilateral research partnerships.
- Value for money of the proposed activities.

Please consider the following important points when you prepare your applications:

- Applications for travel grants must demonstrate **clear purpose and clear value for money**; this should include a clear statement on the need for travel, i.e. what can be achieved in-person which cannot be achieved remotely (e.g. through exchange of emails or video calls)?
- Applications must also specify a Theory of Change, i.e. a mechanism by which proposed activities will lead to impact on the ground. Applications should outline key risks and mitigations of delivery in their context.
- These travel grants are funded by FCDO's Research and Evidence Directorate (RED). The UK Government is committed to creating strong and equitable partnerships through its Official Development Assistance (ODA) Research and Development (R&D) work with other countries. RED is committed to a strategic approach to building research capacity in developing countries, as part of our long-term patient development approach, recognising that research is much stronger and can deliver mutual benefit when done in collaboration with local researchers, networks, and institutions. These travel grants create opportunities for experts from the UK to work directly with experts from another country, providing advice and helping strengthen capacities and knowledge in relation to particular commitments, targets and strategies, through SMART interventions. We expect applications to **make clear how proposed activities will contribute to achievement of these objectives and priorities**.

- Experts working together can help to overcome some of the barriers to making progress on Sustainable Development Goals (SDGs) and seize opportunities faster or with more impact by increasing capacity, capability, and inspiring action. With this in mind, we intend for these travel grants to be used by UK experts to work *directly* (peer-to-peer) with counterparts in partner countries to share UK experience, provide technical knowledge and/or build capacity. We expect applications to **make clear how proposed activities will contribute to achievement of this goal.**

Deliverables:

At the end of the visit and no later than 25 March 2024, the grant holder must submit a report outlining specific research objectives and opportunities within the individual countries visited, or wider ASEAN, that the UK government, researchers, and academics may work on in the future. The findings and recommendations must be supported by, at the minimum, information about the SEA country’s performance in the aquaculture sector and/or sub-sectors in aquaculture, its strengths and weaknesses and how the UK’s expertise can add value to that context.

Key timelines:

Date	Details
15 January 2024	Call opens
5 February 2024	Call closes
15 February 2024	Announcement of successful applicants
15-28 February 2024	Agreement and logistic arrangement
1-20 March 2024	Visit to SEA countries
25 March 2024	Visit Report and Financial Report

Application process:

Researchers interested in the Travel Grants are required to submit the following documents:

- Application Form.
- Budget Proposal Template.
- CV (maximum 3 pages).
- Support letters of **all** host organisations in SEA.

Applications must be sent to phan.huong@fcdo.gov.uk and karen.hipol@fcdo.gov.uk by **23:00 UK time 5 February 2024.**

Contact:

Queries can be sent to Huong Phan, phan.huong@fcdo.gov.uk and Karen Hipol, karen.hipol@fcdo.gov.uk

Annex – Visit Programme

1. Prof. Benz Kotzen - University of Greenwich

Indonesia

Sunday 3 March 2024

1. Visiting Brebes District, Central Java
2. Visiting tourism facilities and silvo-fishery facility and mangrove nursery

Monday 4 March 2024 - Morning

3. Visiting Pekalongan District
4. Visiting aquaculture facilities; vaname, (salt water) tilapia and silvo-fishery.

Monday 4 March 2024 –Afternoon

5. Visiting Pemalang District
6. Visiting mangrove rehabilitation areas and aquaculture ponds by boat and to look at potential sites for reforestation.

Tuesday, 5th March, 2024

7. Visiting Bogor Botanical Gardens
8. Visiting IPB University, discussions about sea grass restoration
9. Visiting a local NGO 'Rekam Nusantara Foundation' <https://rekam.org/en>

Philippines

Wednesday, 6th March 2024

10. Visiting Visayas Campus of University of the Philippines, meeting with the Institute of Aquaculture (IA), College of Fisheries and Ocean Sciences (CFOS)
11. Tour of aquaculture facilities and new science building and general tour of campus

Thursday, March 7, 2024 Morning

12. Meeting with Iloilo City Local Government Unit
13. Sites visited:
 - a. Iloilo City Hall
 - b. Iloilo City Environment and Natural Resources Office
 - c. Iloilo City Mayor's Office Greening and Beautification Division/Beautification Program
 - d. Jaro Floodway
 - e. Lapaz Mangrove Reforestation Sites

Thursday, March 7, 2024 Afternoon

14. Meeting with Leganes, Iloilo Local Government Unit
15. Site visited:
 - a. Leganes Town Hall
 - b. Leganes Integrated Katunggan Ecopark

Friday, March 8, 2024

16. 1. Meeting with Kalibo Save the Mangroves Association (KASAMA) and Korea International Cooperation Agency (KOICA)
17. Site visited:
 - a. Bakhawan Nature Study and EcoPark
 - b. KOICA Blood Cockle Hatchery and Processing Facility

2. Prof. Paul Kemp - University of Southampton

	Visiting institution / organisation	Activities
24 Feb 2024	LHR to Ho Chi Minh City	Travel from UK to Vietnam
25 Feb 2024	Nguyen Tat Thanh University	Visit to aquaculture sites and fish farms in the Mekong delta.
26 Feb 2024	Nguyen Tat Thanh University / Research Institute of Aquaculture no.2	Workshop with academics and representatives of the aquaculture industry in the Mekong Delta to use systems dynamics methods to define the challenges faced in further detail, using causal loop and stock and flow diagrams
27 Feb 2024	Ho Chi Minh to Malang	Travel from Vietnam to Indonesia
28 Feb 2024	University of Brawijaya	Meeting with representatives of the University and local aquaculture communities, visit local sites to see first-hand challenges faced.
1 March 2024	University of Brawijaya	Conducting a systems dynamics workshop to visualize and document the local challenges to aquaculture resilience and sustainability in India.
2 March 2024	University of Brawijaya	Webinar to bring together participants from Indonesia, Vietnam, India, and the UK partners to discuss findings and develop further plans for consortium building and project development.
3 March 2024	Malang to LHR	Travel back to UK

3. Dr. Shovonlal Roy - University of Reading

Philippines

Wednesday 13 March 2024

1. Arrival at Iloilo, Philippines.

Thursday 14 March 2024

Morning

Visit the University of the Philippines Visayas Miagao Campus (AM),

Afternoon

Facility tours, first round of brainstorming workshop with UPV members and stakeholders.

Friday 15 March 2024

Trip to Capiz and visit Milkfish growers and culture sites, workshop-meeting, finalize the plans.

Thailand

Saturday 16 March 2024

AM departure from Iloilo, Philippines, and PM arrival at Bangkok

Sunday 17 March 2024

Initial meeting with researchers at the Kasetsart University (KU), followed by aquaculture field visits to Sriracha, Chonburi, Samut Songkram.

Monday 18 March 2024

Brainstorming workshop at KU with local stakeholders. Finalising the plans for collaboration (PM).

Night departure from Thailand to London.

4. Dr. S. Vaidyanathan - University of Sheffield

Day	Date	Location	Activity
Monday	04/03/2024	Manchester	Departure to SEA
Tuesday	05/03/2024	Bangkok	Arrival in Thailand, Overnight stay in Bangkok
Wednesday	06/03/2024	Bangkok	Visit to Mahidol University, Overnight stay in Bangkok
Thursday	07/03/2024	Alor Setor	Travel to Malaysia, Overnight stay in Alor Setar
Friday	08/03/2024	Alor Setor	Visit to UniMAP, Overnight stay in Alor Setor
Saturday	09/03/2024	Terengganu	Travel to Terengganu, Overnight stay in Terengganu
Sunday	10/03/2024	Kuala Lumpur	Visit to UMT, Flight to KL, Overnight stay in KL
Monday	11/03/2024	Semerang	Travel to Indonesia, Overnight stay in Semarang
Tuesday	12/03/2024	Semerang	Visit to Universitas Diponegoro , Departure from Indonesia
Wednesday	13/03/2024	Manchester	Arrival in the UK