

Applicant: **Sugardjito, Jito**  
Organisation: **Center for Sustainable Energy and Resources Management (CSERM)**  
Funding Sought: **£607,014.00**

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# **DIR29S2\1044**

## **Developing Sustainable Near-shore Sea Cucumber Aquaculture on Selayar Island, Indonesia**

This project will develop seagrass friendly, near-shore sea cucumber aquaculture to strengthen economic resilience and critical habitat conservation for coastal communities around Selayar Island in the Takabonerate-Selayar Biosphere Reserve, in collaboration with an established private sector partner and formal support from local government development agency. The project will empower local women with sustainable income opportunities in the near-shore environment, where they have traditionally harvested marine resources, and prevent the overexploitation of endangered sea cucumber species with effective management and regulation.

## PRIMARY APPLICANT DETAILS

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Name Jito

Surname Sugardjito

Tel (Work) [REDACTED]

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Address [REDACTED]

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# DIR29S2\1044

Developing Sustainable Near-shore Sea Cucumber Aquaculture on Selayar Island, Indonesia

## Section 1 - Contact Details

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### PRIMARY APPLICANT DETAILS

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**Name** Jito  
**Surname** Sugardjito  
**Tel (Work)** [REDACTED]  
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### GMS ORGANISATION

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Type	Organisation
<b>Name</b>	Center for Sustainable Energy and Resources Management (CSERM)
<b>Phone (Work)</b>	[REDACTED]
<b>Email (Work)</b>	[REDACTED]
<b>Website</b>	[REDACTED]
<b>Address</b>	[REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED]

## Section 2 - Title, Ecosystems, Approaches & Summary

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### Q3. Title:

Developing Sustainable Near-shore Sea Cucumber Aquaculture on Selayar Island, Indonesia

### What was your Stage 1 reference number? e.g. DIR28S1\1123

DIR29CC\1014

## Q4. Key Ecosystems, Approaches and Threats

Select up to 3 biomes that are of focus, up to 3 conservation actions that characterise your approach, and up to 3 threats to biodiversity you intend to address, from dropdown lists.

### Biome 1

Marine shelves (seagrass, reefs, subtidal)

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### Biome 2

Shoreline or Supralittoral coastal systems

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### Biome 3

*No Response*

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### Conservation Action 1

Species management (harvest, recovery, re-introduction, ex-situ)

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### Conservation Action 2

Livelihood, economic & other incentives (incl. conservation payments)

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### Conservation Action 3

Land/water protection (area/resource/habitat)

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### Threat 1

Biological resource use (hunting, gathering, logging, fishing)

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### Threat 2

Residential & commercial (incl. tourism) development

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### Threat 3

Human intrusions & disturbance (recreation, war)

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## Q5. Summary of project

**Please provide a brief summary of your project: the problem/need it is trying to address, its aims, and the key activities you plan on undertaking. Please note that if you are successful, this wording may be used by Defra in communications e.g. as a short description of the project on the website.**

**Please write this summary for a non-technical audience.**

This project will develop seagrass friendly, near-shore sea cucumber aquaculture to strengthen economic resilience and critical habitat conservation for coastal communities around Selayar Island in the Takabonerate-Selayar Biosphere Reserve, in collaboration with an established private sector partner and formal support from local government development agency. The project will empower local women with sustainable income opportunities in the near-shore environment, where they have traditionally harvested

marine resources, and prevent the overexploitation of endangered sea cucumber species with effective management and regulation.

## Section 3 - Title, Dates & Budget Summary

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### Q6. Country(ies)

Which eligible host country(ies) will your project be working in? Where there are more than 4 countries that your project will be working in, please add more boxes using the selection option below.

Country 1	Indonesia	Country 2	No Response
Country 3	No Response	Country 4	No Response

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Do you require more fields?

No

### Q7. Project dates

Start date:	End date:	Duration (e.g. 2 years, 3 months):
01 May 2023	01 April 2026	2 years, 11 months

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### Q8. Budget summary

Year:	2023/24	2024/25	2025/26	2026/27	Total request
Amount:	£207,841.00	£204,152.00	£195,021.00	£0.00	£607,014.00

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Q9. Proportion of Darwin Initiative budget expected to be expended in eligible countries: %



Q10a. Do you have matched funding arrangements?

Yes

What matched funding arrangements are proposed?

Universitas Nasional Indonesia (UNAS) will provide  of total project funding to cover indirect costs associated with project management and implementation (overheads). Herriot-Watt University will provide  % total project funding to

cover indirect costs associated with management and implementation (overheads)

Q10b. Total confirmed & unconfirmed matched funding (£)

£ [REDACTED]

Q10c. If you have a significant amount of unconfirmed matched funding, please clarify how will you fund the project if you don't manage to secure this?

*No Response*

## Section 4 - Problem statement

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### Q11. Problem the project is trying to address

**Please describe the problem your project is trying to address in terms of biodiversity and its relationship with poverty. What is the need, challenge or opportunity?**

**For example, what are the drivers of biodiversity loss that the project will attempt to address? Why are they relevant, for whom? How did you identify these problems? Please cite any evidence you are using to support your assessment of the problem (references can be listed in a separate attached PDF document).**

Coastal habitats and natural resources are under increasing pressure throughout Indonesia. Sea grass beds are particularly sensitive, but remain an under protected habitat at the national level. Degradation of sea grass beds can have negative impacts on the abundance of various commercially important marine species, coastline integrity, and the biodiversity of adjacent mangrove forest and coral reef habitats. Developing 'seagrass friendly' livelihoods is therefore of critical importance for coastal resilience and biodiversity conservation[1].

Sea cucumber harvesting is a key livelihood associated with sea grass habitats, however local communities are incentivized

to overexploit sea cucumbers due to high demand in global markets, resulting in a cycle of contagious exploitation and a

collapse of wild populations across tropical regions [2]. Sea cucumbers play a critical role in maintaining the health of

seagrass beds, often comprising the largest share of permanent biomass within the ecosystem, cycling nutrients and

oxygen, regulating water quality and providing habitat for a range of commensal species [3]. They can be considered a keystone species for seagrass habitats, supporting growth, health, recovery and stability of these uniquely productive ecosystems and supporting important coastal and near-shore biodiversity of fish, molluscs, crustaceans and a wide range of other species. Therefore, the local extinction or severe depletion of sea cucumbers contributes to a degradation of the sea grass ecosystem, reducing the population stability and undermining the long term sustainability of key coastal livelihoods.

On Selayar island specifically, CSERM field officers have recorded sea cucumbers being harvested from sea grass beds

by local women, and from elsewhere by fishing expeditions. Mature and juvenile specimens are harvested, threatening the reproductive sustainability of several species, with divers searching deeper waters using dangerous

methods such as compression diving. The tendency to overexploit wild sea cucumber populations is driven by market

demand in East Asia, and a lack of local capacity to prepare and process sea cucumber products. This

forces

harvesters to rely on large quantities of unprocessed sea cucumber, which are resold for more than 6 times the price after being processed.

Population growth and coastal development are placing additional pressures on the near-shore ecosystem, with ongoing overexploitation of wild sea cucumbers likely to result in permanent degradation of the coastal environment [3], and negative impacts for a range of other livelihoods dependent on coastal resources. At the same time, disruption as a result of the COVID-19 pandemic has significantly reduced the income from key industries such as tourism, where many local women find work, and critically the closure of major processing facilities in the provincial capital due to virus outbreaks entirely disrupted Selayar's fishing economy in 2020/21. The domestic tourism sector has since reopened, albeit with reduced activity, and the focus on developing this industry poses additional threats to the coastal sea grass ecosystem from construction projects, boat engine prop scarring, and poor waste management. Near-shore seagrass friendly sea cucumber aquaculture is therefore recommended as an ideal solution for strengthening local ecological and economic resilience by providing sustainable livelihoods through an integrated habitat management system.

## Section 5 - Darwin Objectives and Conventions

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### Q12. Biodiversity Conventions, Treaties and Agreements

**Q12a. Your project must support the commitments of one or more of the agreements listed below.**

**Please indicate which agreement(s) will be supported and describe which objectives your project will address.**

- Convention on Biological Diversity (CBD)
- Convention on International Trade in Endangered Species (CITES)
- United Nations Framework Convention on Climate Change (UNFCCC)
- Global Goals for Sustainable Development (SDGs)

### Q12b. National and International Policy Alignment

**Using evidence where available, please detail how your project will contribute to national policy (including NBSAPs, NDCs, NAP etc.) and in turn international biodiversity and development conventions, treaties and agreements that the country is a signatory of.**

This project will address multiple targets of the CBD, including the development of sustainable resource utilization within a national biosphere reserve to raise awareness of the importance of biodiversity (strategic goal A, target 1) and the potential for integrating key habitats into wider development and poverty reduction strategies (strategic goal A, target 2). Providing supplementary income for local

communities constitutes sustainable livelihood development in accordance with an ecosystem-led approach and the management of marine resources within safe ecological limits (strategic goal B, target 6), and the proliferation of target sea cucumber species will help fight local acidification, thereby minimizing anthropogenic pressures on coral reef habitats (strategic goal B, target 10). Providing critical knowledge and best practice guidelines for local communities in relation to management of blue carbon habitats (strategic goal E, target 18) is a central theme of the project, as is the science base relating to promoting biodiversity values and vital functions of these habitats (strategic goal E, target 19). Restoring and conserving tropical seagrass beds in alignment with the UNFCCC Paris Agreement (article 5, paragraph 1) regarding vital carbon sinks since seagrass meadows possess extraordinary capacity for carbon capture and sequestration, and capacity-building for developing countries regarding their contribution to climate mitigation (article 6, paragraph 8). The project will take place within the Taka Bonerate-Kepulauan Selayar Biosphere Reserve, a critical marine conservation habitat with significant human population and vulnerability to anthropogenic disturbances. Effectively regulating the near-shore coastal environment while providing sustainable livelihood opportunities is critical to the preservation of this uniquely rich marine ecosystem. Several species of locally harvested cucumbers have been included in the list of endangered and vulnerable species protected by CITES since 2019, reflecting their increasingly precarious conservation status. These include *Holothuria fuscogilva*, *Holothuria nobilis* and *Holothuria whitmaei*, all three of which are known to occur in coastal seagrass habitats, particularly as juveniles, making sustainable management of commercial exploitation as well as the associated ecosystem a priority for Indonesia to fulfill its export obligations.

## Section 6 - Method, Change Expected, Gender & Exit Strategy

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### Q13. Methodology

**Describe the methods and approach you will use to achieve your intended Outcome and contribute towards your Impact. Provide information on:**

- how you have reflected on and incorporated **evidence and lessons learnt** from past and present similar activities and projects in the design of this project.
- the specific approach you are using, supported by **evidence that it will be effective, and justifying why you expect it will be successful** in this context.
- how you will undertake the work (activities, materials and methods)
- what will be the **main activities** and where will these take place.
- how you will manage the work (governance, roles and responsibilities, project management tools, risks etc.).

Restoration and preservation of coastal seagrass beds via near-shore sea cucumber 'ranching' has been demonstrated as economically viable and ecologically sustainable at several locations across the tropical Indo-pacific region. The positive impact of sustainable sea cucumber aquaculture on growth and recovery of seagrass was indicated in a study conducted by the University of Edinburgh and Blue Ventures social enterprise in Madagascar [4].

Similar initiatives in Indonesia have been conducted on Lombok Island by Lisa Indriana, technical consultant for this project, developing effective ranching pen design and profiling ideal conditions for rearing and grow out programs (2018-ongoing). Previous studies in which she was the principal investigator for land based closed system aquaculture were found to be less effective than open sea ranching due to issues with water quality regulation, but provided critical insight into crucial biochemical and physical parameters to maximize cultured stock growth and health [5][6]. Indriana has also developed



education programs and training materials regarding sea cucumber ranching for coastal Island populations in Indonesia, which will provide an ideal foundation from which to develop Selayar specific materials during the project. PT Sejahtera Putra Kusuma, a private sector project implementation partner, has established an economically and ecologically viable aquaculture business based on a grow-out and buy-back system which will form the basis of the projects economic model (letter of commitment attached). The target will be to scale up and further validate this approach as part of a more widely integrated economic resilience strategy.

As the lead project partner CSERM has been working with coastal communities in Selayar for several years through the blue communities project, developing sustainable marine/coastal livelihoods. Field officers currently stationed at Selayar island will provide trusted connections with target communities, facilitating both the initial pilot phase of the project including training and education. They will also provide critical data regarding local socioeconomic conditions and how these interact with issues of conservation and biodiversity. Through the blue communities project, local communities have been made aware of the need for sustainable approaches which prioritize economic growth over the long term, and are receptive to these innovations.

The project will be implemented in 7 phases:

- 1) Establish baseline data for target sea cucumber species distribution and seagrass ecosystem health to identify ideal aquaculture sites for "test ranching" pilot projects and enable quantification of impacts over the project timeframe.
- 2) Establish multiple near-shore pilot sites for sustainable sea cucumber aquaculture as training and education laboratories for local women.
- 3) Initiate training, familiarity and participation by local communities in the aquaculture project, particularly women.
- 4) Demonstrate economic and ecological viability of grow-out and buy-back seagrass 'ranching' in collaboration with PT Sejahtera Putra Kusuma.
- 5) Establish permanent womens' cooperatives to manage and develop existing project sites, establish and expand new locations with support from PT Sejahtera Putra Kusuma.
- 6) Integrate established aquaculture ranching model within provincial development plan (marine economy focus) to ensure long-term economic sustainability and conservation of seagrass habitat, in coordination with BAPPEDA (Regional Planning and Development Agency). Develop local processing and export capacity to maximise sustainable economic returns and profitability.
- 7) Support the regional expansion of successful implementation via ongoing research, monitoring and promotion of technical expertise.

Sea cucumbers are already part of the local seafood economy, although at the current time they are harvested indiscriminately from both the near-shore seagrass beds and deep water coastal environment before being sold in an unprocessed state to buyers in the nearby provincial capital. This project will focus on developing a sustainable near-shore industry in order to maximise the benefits for women who traditionally harvest from seagrass beds, and focus on capacity building in order to maximise economic returns based on product quality rather than quantity, disincentivising overexploitation. Initial project partners will comprise members of 2 family welfare empowerment associations (PKK) who have formally declared strong support for proposed activities (letters of support attached).

The final project phases will focus on strengthening socioeconomic infrastructures related to the

aquaculture harvesting and processing industry, and has already secured support from the head of the district Planning and Development Agency to help support development of important physical and regulatory infrastructure including ensuring export regulations in accordance with CITES.

At all stages of project implementation results and challenges will be documented and reported as part of an awareness building campaign with the intention of developing seagrass friendly sea cucumber ranching as a sustainable livelihood for coastal communities throughout Indonesia. In particular, information will be shared with sister projects on Lombok island as comparative data in order to assist in scaling their own operations.

## **Q14. Capability and Capacity**

**How will you support the strengthening of capability and capacity in the project countries at organisational or individual levels, please provide details of what form this will take, who will benefit, and the post-project value to the country.**

Capability and capacity building is a key focus for the implementation of the is project, to ensure that accrued economic benefits are sustainable and scalable in order to help improve long term coastal development and conservation outcomes. Strengthening capability will focus on developing the skills and knowledge necessary for local women to initiate, manage and profit from near-shore sea cucumber aquaculture through field workshops, community consultations and digital/printed materials, the model for which has already been developed during the implementation of sister sites in Lombok. Pilot project sites will be established to serve as training centers with private sector partnership to familiarize women with the basic principles and methods of the ranching model, with further support during the collaborative development of expanded sites which will focus on maximizing sustainable profitability through effective models for site management and maintenance, stock harvesting, processing and packaging. Local women are already familiar with sea cucumbers as a commercial resource, so expanding their business acumen and skills set will be supported by the grow-out and buy-back business model provided by PT Sejahtera Putra Kusuma.

The post-project value will derive primarily from capacity building with local, regional and national level government, as well as via collaboration with private sector actors to improve market access, infrastructure and equitable profit distribution. Working with the Local Planning and Development Agency to construct facilities for processing and storage will help reduce waste and increase profitability, allowing for operations to be scaled more effectively. Establishing local cooperatives will assist with site management, and facilitate profit-sharing among different households, increasing overall community resilience to potential disruptions. Critical data from the project will be used to develop management best practices and regulations with regional and local government to sustainably scale the industry as a vehicle for economic development throughout coastal Indonesia.

## **Q15. Gender equality**

**All applicants must consider whether and how their project will contribute to reducing inequality between persons of different gender. Explain how your understanding of gender equality within the context your project, and how is it reflected in your plans. Please summarise how your project will contribute to reducing gender inequality. Applicants should, at a minimum, ensure proposals will not increase inequality and are encouraged to design interventions that proactively contribute to increased gender equality.**

Gendered division of labour in Selayar is a central component of local culture and an important part of the

socioeconomic strategy of individual households. Typically men will be employed in the fishing industry, either as compressor divers to harvest specific species or on small or medium sized trawlers working in open water, and this constitutes the primary source of income for most households. These expeditions can take many weeks or even months, leaving many women to manage the household, take care of the children, and generate supplementary income from small home enterprises in the food and beverage or tourism industry. In addition, women have traditionally exploited local marine resources of the near-shore environment, and sea grass beds in particular, collecting molluscs, seaweed and sea cucumbers for resale. Reliance on intermittent income when men return from fishing expeditions not only makes women and children vulnerable to external economic shocks for extended periods of time, highlighted by the loss of tourism income because of the covid-19 pandemic and potentially destructive tropical storms, it also engenders patriarchal relationships in which women are usually dependent on their husband to provide them with access to money. Anecdotal reports of fishing income being lost, spent or withheld indicate the extent to which female economic empowerment depends on direct access to independent livelihoods which align with the cultural norms of Selayar society. This economic instability, lack of stable income and access to financial support often leaves families or even entire communities in debt to predatory middlemen, who also force the sale of caught/harvested resources at low prices to quickly repay initial loans. By providing the training, skills and socioeconomic infrastructure to develop a locally sustainable sea cucumber aquaculture industry centred on the female-dominated sea grass habitat, the project will provide a stable, high-value supplementary income directly.

## **Q16. Awareness and understanding**

**How will you raise awareness and understanding of biodiversity-poverty issues in your stakeholders, including who your stakeholders are, what approaches/formats/products will you use, how you will ensure open and free access to all data, and how will you know that the messages are understood?**

Given that the aquaculture ranching project will be an in-situ operation is located within critical seagrass bed ecosystems, it is premised on establishing a clear understanding of the nexus between economic development and effective management of resources among all project stakeholders. Key stakeholders include participating local communities (particularly women who will be active in the project), PT Sejahtera Putra Kusuma (a private company with an established grow-out and buy-back sea cucumber business model), village and district governing bodies, regional and district branches of Indonesia's Planning and Development Agency, and foreign markets, primarily in East Asia. The technical training and implementation program provided by PT Sejahtera Putra Kusuma in accordance with their established business model will be conducted in parallel with an education and awareness raising campaign by CSERM focusing on the long-term ecological and economic benefits of sustainable seagrass utilisation. All project partners have proven experience in these activities via the production and implementation of commercial aquaculture training, development of community-led economic/conservation initiatives, consultations with a range of stakeholders, field workshops, and digital/printed media. Technical training will be provided specifically for participating women from identified family welfare associations, it is critical that a broader understanding of seagrass ecology is established among the wider population to minimize potential conflicts of interests in and around the project location. In particular, tourism and near-shore fishing activities have the potential to degrade seagrass habitats, and should therefore be managed in concert with aquaculture development. Project partners will coordinate closely with Selayar's district Development and Planning Agency (BAPPEDA) to harmonise these potentially divergent interests in a fair and equitable manner. The critical role of seagrass beds in supporting other marine-associated livelihoods, biodiversity and carbon sequestration will be emphasized as part of the project's conservation outcomes in order to ease integration within Indonesia's low-carbon development policies.

## **Q17. Change expected**

**Detail the expected changes to both biodiversity and poverty reduction, and links between them, this work will deliver. You should identify what will change and who will benefit a) in the short-term (i.e. during the life of the project) and b) in the long-term (after the project has ended) and the potential to scale the approach.**

**When talking about how people will benefit, please remember to give details of who will benefit, differences in benefits by gender or other layers of diversity within stakeholders, and the number of beneficiaries expected. The number of communities is insufficient detail – number of households should be the largest unit used.**

The project expects to deliver the following:

1 - Reduce overexploitation pressure on endangered sea cucumber species. Sea cucumbers are currently harvested indiscriminately from both the near-shore and deep water coastal environment. Many species of sea cucumber spend their juvenile phase in seagrass beds, migrating to deeper waters to breed as they age, therefore overexploitation in both these key habitats poses a serious risk to long term population viability. Overexploitation is further incentivized by the lack of skills and infrastructure to process raw sea cucumbers, meaning that local communities instead rely on low price, high volume sales strategies. By developing a sustainable model for high value sea cucumber aquaculture in a near-shore 'no-take zone' and strengthening local processing capacity, the project will reconfigure the existing economy towards more sustainable utilization. Significant population increases will be delivered via the aquaculture system itself (3 scaled sites working with an average 50 households each), with wider harvesting and utilization practices disseminated via the training and education program to approximately 600 households across 3 local villages.

2 - Restore and preserve local seagrass bed ecosystems. The potential for in-situ sea cucumber 'ranching' to improve the overall health of seagrass habitat has been highlighted in several studies which highlight sea cucumbers as ecosystem engineers, with a crucial role in regulating water quality, reducing algal blooms, oxygenating sediment and providing habitat for other species. Successful implementation will also help reduce activities which damage or threaten seagrass beds in and around the project area, including indiscriminate harvesting, excessive tourism development and boat scarring. A framework for effective seagrass management will be developed with the local government and authorities from the adjacent national park to manage key resources within the national biosphere reserve area.

3 - The aquaculture operation developed by the project is expected to provide significant supplementary income for around 300 households during year 2-3, and continue to do in the post-project period. Effective implementation will stimulate expansion of ranching sites, supported by the local planning and development agency, based on the data and methodology developed during the project period. Training, education, consultation and market development will facilitate easy adoption by local communities. This income will go directly to local women, who traditionally harvest the near-shore environment, and help break dependence on intermittent income from male household members.

4 - Strengthen value retention in the local economy by expanding physical and regulatory measures which support the grow-out and buy-back model established in coordination with PT Sejahtera Putra Kusuma, maximising profitability and minimising lost value from waste etc. This process will be coordinated with district planning and development agency, PT Sejahtera Putra Kusuma and local communities involved in the project.

5 - Establish seagrass conservation through sustainable aquaculture as a viable economic model for replication throughout coastal and small-island Indonesia. Thorough reporting and data collection the project will provide evidence and technical details supporting expansion of sites across Selayar District, South Sulawesi Province, and elsewhere.

## Q18. Pathway to change

**Please outline your project's expected pathway to change. This should be an overview of the overall project logic and outline why and how you expect your Outputs to contribute towards your overall Outcome and, longer term, your expected Impact.**

1. Working with via partners in the Blue Communities Project already engaged in developing an environmentally sustainable coastal economy will facilitate rapid implementation and good participation.
2. A preliminary research and subsequent pilot-project stage will provide the necessary data and design insights to ensure effective implementation at later project stages, while at the same time providing opportunities for hands-on training, education and project awareness by participating communities.
3. Working over the course of several months to involve local women in the expansion of 'test ranching' sites into fully operational aquaculture sites will maximize their participation and ownership, particularly during periods when male breadwinners are absent.
4. The project will provide technical support for the expansion of aquaculture sites, feeding back valuable insights from individual operations to the project database, accumulating critical data regarding the sustainable management, design and site-specific variation of seagrass bed aquaculture over the medium to long term for education, refining the methodology and incentivizing replication elsewhere
5. By increasing the supply of target sea cucumbers and their value to the local economy, the project will incentivize collaboration with other key stakeholders in the seafood economy to expand and support the development of a sustainable sea cucumber industry.

## Q19. Exit Strategy

**How will the project reach a sustainable point and continue to deliver benefits post-funding?**

**How could post-project scaling of the approach (if proven) be delivered: through new finance or through uptake by stakeholders or other mechanisms? Are there any barriers to scaling and how will these be addressed?**


**How will the required knowledge and skills remain available to sustain the benefits?**


The primary output of this project will be to establish a seagrass-friendly sea cucumber aquaculture operation that is sustainable both ecologically and economically. By developing local capabilities and integrating the operation within a wider context of economic capacity building built on existing industries and market demand, the project activities will continue in the post-funding period without the need for direct external support. It is expected that direct economic benefits generated during project implementation will stimulate further adoption among local communities adjacent to the project area seeking to replicate its success, with ongoing support provided by PT Sejahtera Putra Kusuma regarding the provision of materials, training, fingerlings for the grow-out and buy-back business model, and guaranteed prices for cultured stock. In particular, collaboration with local government via the Development and Planning Agency to integrate sea cucumber aquaculture into Selayar's economic development agenda by supporting key initiatives and recognizing the near shore sea cucumber 'ranching'


model as a vital economic interest to be accommodated in broader planning and management. Finally, lessons learned from the Selayar project will be utilized to scale sister projects in Lombok island, establishing a national model for seagrass friendly sea cucumber aquaculture which can be readily adopted across many of Indonesia's islands, particularly across the impoverished East of the country. CSERM will continue to collaborate with provincial and national governments through the Blue Communities Project to develop cohesive regulation and management policies and promote the near-shore 'ranching' model as a sustainable livelihood solution for coastal communities. This aligns with the governments clear goal of achieving sustainable economic development (particularly for small island communities), conservation of critical marine habitats and mitigation of anthropogenic climate change via carbon sequestration.

**If necessary, please provide supporting documentation e.g. maps, diagrams, references etc., as a PDF using the File Upload below:**


 [SURAT BAPPEDA](#)


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 [PRIVATE SECTOR COMMITMENT](#)


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 [COMMITMENT BANTOHARU](#)


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## Section 7 - Risk Management

### Q20. Risk Management

Please outline the 6 key risks to achievement of your Project Outcome and how these risks will be managed and mitigated, referring to the [Risk Guidance](#). This should include at least one Fiduciary, one Safeguarding, and one Delivery Chain Risk.

Projects should also draft their initial risk register using the [Risk Assessment template](#) provided, and be prepared to submit this when requested if they are recommended for funding. Do not attach this to your application.

Risk Description	Impact	Prob.	Gross Risk	Mitigation Header	Residual Risk
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<b>Fiduciary</b>	Misallocation of project funds by local community partners for activities other than project implementation resulting in less overall project capacity	moderate	unlikely	moderate	Avoid: Conduct direct purchasing by project implementation team through local project officers stationed on Selayar island with several years experience working with CSERM on coastal sustainability projects. All purchases in excess of GBP2500 will be conducted via a competitive bidding process with 3 comparative offers	minor
<b>Safeguarding</b>	Minor risk of injury during construction, maintenance and harvesting of sea cucumber ranching sites.	moderate	rare	minor	Reduce: Conduct thorough technical training with all participants, including intensive monitoring during initial project implementation phases. Identify potential safety concerns and adjust designs accordingly. Insurance will be provided to all those engaged in activities with more than average risk of injury or harm.	minor
<b>Delivery Chain</b>	Damage to pilot project sites from tropical storms and associated floating debris resulting in a loss of investment, time setbacks and operational concerns	major	possible	major	Avoid: Pilot site development only in selected areas already identified as being sheltered from storm surges by local field officers (between Selayar Island and Pasi Island).	minor
<b>Risk 4</b>	Delivery Chain Risk: Low productivity of aquaculture sites during initial project phases resulting in local communities being discouraged and lower participation	major	unlikely	major	Reduce: Conduct detailed analysis of phase 1 biosurvey data to identify ideal locations for pilot project sites, closely monitor water conditions and stock growth to identify ideal stocking density, harvesting regime and management practices. The sites will be developed based on methods employed at active sister sites on Lombok Island	minor

<b>Risk 5</b>	Contextual Risk: Conflict of interest with local tourism industry seeking to use seagrass bed waters for recreation, potentially resulting in damage or disturbance of aquaculture sites	minor	possible	moderate	Reduce: Collaborate with local planning and development agency to create an integrated management plan for seagrass bed areas, particularly around project development sites. Declaration from participating local village heads on prohibiting harmful activities.	minor
<b>Risk 6</b>	Delivery Chain Risk: Lack of economic capacity to handle, process and export increased volume of sea cucumbers	moderate	unlikely	moderate	Avoid: Partnership with PT Sejahtera Putra Kusuma based on a grow-out and buy-back model in which training, culture stock and materials and provided to local communities based on an agreement that aquaculture harvests will be sold back to PT Sejahtera Putra at a fixed price once mature.	minor





## Section 8 - Implementation Timetable

### Q21. Provide a project implementation timetable that shows the key milestones in project activities

Provide a project implementation timetable that shows the key milestones in project activities. Complete the Word template as appropriate to describe the intended workplan for your project.

[Implementation Timetable Template](#)

Please add/remove columns to reflect the length of your project. For each activity (add/remove rows as appropriate) indicate the number of months it will last, and fill/shade only the quarters in which an activity will be carried out. The workplan can span multiple pages if necessary.

-  [BCF Implementation Timetable Template 2022-23 FINAL \(TERIPANG 2 UNAS\)](#)
-  08/12/2022
-  19:12:26
-  docx 29.39 KB



## Section 9 - Monitoring and Evaluation

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### Q22. Monitoring and evaluation (M&E)

Describe how the progress of the project will be monitored and evaluated, making reference to who is responsible for the project's M&E.

**Darwin Initiative projects are expected to be adaptive and you should detail how the monitoring and evaluation will feed into the delivery of the project including its management. M&E is expected to be built into the project and not an 'add' on. It is as important to measure for negative impacts as it is for positive impact. Additionally, please indicate an approximate budget and level of effort (person days) to be spent on M&E (see [Finance Guidance](#)).**

Progress on the project will be monitored at each stage and from the perspective of local stakeholders as well as the central project team. Intensive monitoring and documentation of project activities will feed back into regular coordination meetings during which current approaches will be discussed, evaluated and modified where appropriate to ensure effective implementation. Channels will be open to local communities at various levels of project participation to share insights, feedback and critiques of the project, prior, during and after particular activities are carried out, and they will be briefed clearly on each implementation phase to secure informed consent prior to implementation. Where implementation problems or resistance by local stakeholders is encountered consultations will be held to establish the best course of action moving forward involving all relevant internal and external stakeholders. The project lead will ultimately be responsible for ensuring that final implementation produces the intended outcome as far as possible in light of any unforeseen circumstances. Project staff will be responsible for sticking to the established timetable, and required to provide full details of any changes resulting from bad weather or other force majeure events. To conduct thorough M&E for this project the core team have invited third-party monitoring and observation by Universitas Husnaddin (Husnaddin University) in Makassar, the provincial capital and largest city in the region. At each project stage members of staff with the appropriate background expertise and training will review field observations, participate in coordination meetings and join fieldwork activities to provide additional insights regarding effective, efficient project implementation. Their inputs will be carefully considered by the project implementation partners, documented as part of meeting minutes and archived for review. The project is designed in such a way as to maximise the benefits accrued at each implementation stage, while simultaneously avoiding wasteful investment of resources in the event that realisation of the primary outcome appears untenable for any reason. Therefore, a full round of comprehensive monitoring, review and evaluation will be conducted annually as a condition for moving forward with the subsequent stage of project activities.

**Total project budget for M&E in GBP (this may include Staff, Travel and Subsistence costs)**

£ 

**Percentage of total project budget set aside for M&E (%)**



**Number of days planned for M&E**

108

## Section 10 - Logical Framework

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### Q23. Logical Framework (logframe)

Darwin Initiative projects will be required to monitor and report against their progress towards their Outputs and Outcome. This section sets out the expected Outputs and Outcome of your project, how you expect to measure progress against these and how we can verify this.

- [Stage 2 Logframe Template](#)

The **logframe template** (N.B. there is a different template for Stage 1 and Stage 2) needs to be downloaded from Flexi-Grant, completed and uploaded as a PDF within your Flexi-Grant application – **please do not edit the logframe template structure (other than adding additional Outputs if needed) as this may make your application ineligible.**

**Please upload your logframe as a PDF document.**

 [VER-BCF Implementation Timetable Template 2022-23 FINAL \(2\)](#)  
 12/12/2022  
 11:03:36  
 pdf 161.77 KB

**Impact:**

Effective conservation and sustainable utilization of Indonesian seagrass beds through demonstrating the potential of near-shore sea cucumber ranching practices as a vehicle for female economic empowerment and broader coastal resilience

**Outcome:**

Adopting sustainable sea cucumber ranching delivers a profitable supplementary livelihood as economic empowerment for local women from 150 households across 3 coastal villages and effective seagrass habitat conservation

**Project Outputs**

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**Output 1:**

Education and awareness raising of the importance, ecology and economic potential of seagrass beds provided to local communities as a precursor for pilot projects

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**Output 2:**

Participating women trained to successfully manage and operate aquaculture pilot project sites

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**Output 3:**

Pilots sites expanded into full-scale sea cucumber ranches

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**Output 4:**

Ranching sites developed into profitable aquaculture industry in collaboration with PT Sejahtera Putra Kusuma

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**Output 5:**

Sustainable aquaculture industry transferred to local ownership and management

---

## Do you require more Output fields?

It is advised to have fewer than 6 Outputs since this level of detail can be provided at the Activity level.

No

## Activities

Each activity is numbered according to the Output that it will contribute towards, for example, 1.1, 1.2, 1.3 are contributing to Output 1.

Output 1:

- 1.1- Seagrass bed biosurvey to establish baseline ecological data (species composition, diversity, seagrass coverage & growth rates) for education and awareness raising program
- 1.2- Printed / digital materials created for dissemination among all local parties
- 1.3- 12 (4x3) women's only focus groups to identify gender-specific concerns, establish support for project development and participation, and receive feedback for modifying approach in line with local women's concerns
- 1.4- 12 (4x3) monthly community meetings introducing project approach and objectives, receiving feedback for modifying approach in line with local community concerns
- 1.5- 3 monthly FGDs with local government agencies introducing project approach and objectives, receiving feedback for modifying approach
- 1.6- Collaborative mapping of potential study sites in order to identify ideal locations for considering the interests of all parties

Output 2:

- 2.1 - Construct 9 (3x3) 16m<sup>2</sup> pilot project sites at specified locations, stock with juvenile sea cucumbers ( density: 3/m<sup>2</sup>)
- 2.2 - Hold 48 weekly workshops over the course of 12 months to engage local women in the process and provide basic training regarding monitoring, maintenance and harvesting practices
- 2.3 - Modify pilot operations based on data from each site to maximize productivity, produce SOP manual for local women
- 2.4 - Harvest, process and sell sea cucumbers from pilot sites, record weight, age, health and price
- 2.5 - 3 focus groups with participating women to give feedback about project implementation, provide any additional information, and prepare for site expansion

Output 3:

- 3.1 - Elect local women's group coordinator for each village to manage maintenance and monitoring responsibilities for expanded sites
- 3.2 - Construct new expanded ranching sites (size based on pilot site data), stock with juvenile sea cucumbers (density based on pilot site data)
- 3.3 - Establish work rota for monitoring, maintenance by participating women
- 3.4 - Monitor and maintain expanded sites for 9-12 months until first round stock reach weight of 450g, restock juveniles at determined intervals
- 3.5 - Weekly site visits by field officers to assess progress for reporting, give feedback and technical support, and identify potential issues

Output 4:

- 4.1 - Monthly preparatory workshops for participating women on preparation and processing of sea cucumbers for buy-back model
- 4.2 - Quarterly FGDs with local government and industry partners to identify and prepare necessary

physical, institutional or regulatory infrastructure for developing sea cucumber industry

4.3 - Harvesting of ready stock, processing and selling sea cucumbers from expanded sites, recording weight, age, health and price conducted by participating women for profit with assistance from field officers

4.4. - Net ranching income surveys & sea cucumber price surveys conducted by field officers

4.5 - Bi-weekly monitoring and reporting of site operations, stock development by field officers

Output 5:

5.1 - Monthly monitoring of site operations by field officers, reporting of data collected by participating women

5.2 - AD/ART (articles of association) meetings held to establish 3 Women's cooperative village enterprise (BUMDes) SOP and operational structure

5.3 - Ceremony formally transferring management and operation of ranching sites, coordination of processing activities and sales to BUMDes

## Section 11 - Budget and Funding

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### Q24. Budget

**Please complete the appropriate Excel spreadsheet, which provides the Budget for this application. Some of the questions earlier and below refer to the information in this spreadsheet. Note that all Darwin Main should be using the over £100,000 template. Please refer to the [Finance Guidance](#) for more information.**


- [Budget form for projects over £100k](#)

**Please ensure you include any co-financing figures in the Budget spreadsheet to clarify the full budget required to deliver this project.**


**N.B.: Please state all costs by financial year (1 April to 31 March) and in GBP. The Darwin Initiative cannot agree any increase in grants once awarded.**


**Please upload the Lead Partner's accounts at the certification page at the end of the application form.**


---

 [DRAFT BCF Budget over 100k MASTER Apr2](#)

2

 12/12/2022

 07:44:11

 xlsx 84.86 KB

### Q25. Funding

Q25a. Is this a new initiative or does it build on existing work (delivered by anyone and funded through any source)?

- Development of existing work

### **Please provide details:**

The basic model of sea cucumber ranching has been developed and scaled by Blue Ventures in Madagascar and other tropical East African nations, providing much of the basic outline for this project. A sister project of seagrass-integrated sea cucumber ranching has been conducted on Lombok Island by one of the core team members as part of previous research, providing critical data and insights regarding more ecologically and climatically relevant criteria for developing a sustainable methodology. In addition, an economically viable grow-out and buy-back model for sea cucumber aquaculture has been developed by PT Sejahtera Putra Kusuma, a project implementation partner who has committed to support the development of sustainable sea grass ranching of sea cucumbers with the provision of essential materials, technical training and cultured stock, with a subsequent agreement to purchase harvested stock at a fixed price, facilitating improved household economic planning by local women and other relevant stakeholders. This project will build on the Lombok initiatives by moving beyond the proof-of-concept phase into the development of a viable local economy based on the seagrass-friendly ranching, harvesting, preparation and sale of sea cucumbers as a model for small islands throughout Indonesia.

Q25b. Are you aware of any current or future plans for similar work to the proposed project?

No

### **Q26. Capital items**

**If you plan to purchase capital items with Darwin funding, please indicate what you anticipate will happen to the items following project end. If you are requesting more than 10% capital costs, please provide your justification here.**

Only 1.17% of project costs are allocated to the purchase of capital assets for project implementation, with the vast majority of these assets being transferred to local community ownership at the end of the project lifespan. The office equipment will remain on site to be converted into a headquarters for conducting business between local participants and potential buyers. Underwater cameras and other survey equipment will remain accessible to the local community, potentially being used by the CSERM Blue Communities initiative where appropriate. The project laptop and harddisk will be returned to Jakarta to ensure that all collected data, documentation and correspondences are archived appropriately for later use.

### **Q27. Value for Money**

**Please demonstrate why your project is good value for money in terms of impact and cost-effectiveness of each pound spend (economy, efficiency, effectiveness and equity). Please make sure you read the guidance documents, before answering this question.**

This project builds upon extant local practices in a culturally-appropriate way, empowering local women with the knowledge and skills to maximise their economic potential without disrupting their traditional roles in the community. For this reason, successful project implementation will stimulate the development of a sustainable local industry for years to come, securing the preservation of critical seagrass bed habitat and the conservation of endangered species without the need for additional financial inputs from other sources or further direct support. The methods employed rely on cheap, readily available, local materials, and trial phases are employed to demonstrate solution viability prior to additional capital injections to scale-up those solutions. The location selected is relatively close to a major provincial capital and economic hub, reducing logistics and transport costs, despite representing an example of one of

Indonesia's small island communities. Most project staff are Indonesian nationals, and their compensation is paid in Indonesian Rupiah, reducing staff costs compared to teams with more international members from countries with more expensive currencies.

## Section 12 - Safeguarding and Ethics

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### Q28. Safeguarding

**Projects funded through the Darwin Initiative must fully protect vulnerable people all of the time, wherever they work. In order to provide assurance of this, projects are required to have appropriate safeguarding policies in place.**

**Please confirm the Lead Partner has the following policies in place and that these can be available on request:**

**Please upload the lead partner's Safeguarding Policy as a PDF on the certification page.**

<b>We have a safeguarding policy, which includes a statement of our commitment to safeguarding and a zero tolerance statement on bullying, harassment and sexual exploitation and abuse</b>	Checked
<b>We have attached a copy of our safeguarding policy to this application (file upload on certification page)</b>	Checked
<b>We keep a detailed register of safeguarding issues raised and how they were dealt with</b>	Checked
<b>We have clear investigation and disciplinary procedures to use when allegations and complaints are made, and have clear processes in place for when a disclosure is made</b>	Checked
<b>We share our safeguarding policy with all partners</b>	Checked
<b>We have a whistle-blowing policy which protects whistle blowers from reprisals and includes clear processes for dealing with concerns raised</b>	Checked
<b>We have a Code of Conduct for staff and volunteers that sets out clear expectations of behaviours - inside and outside the work place - and make clear what will happen in the event of non-compliance or breach of these standards</b>	Checked

**Please outline how you will implement and strengthen your safeguarding policies in practice and ensure that all partners apply the same standards as the Lead Partner. If any of the responses are “no”, please indicate how it is being addressed.**

This project will build upon relationships with local communities in which dialogue, information sharing and trust have been cultivated over several years. This gives our field officers insight and access to potential safeguarding concerns which may arise during implementation, which they will immediately report to the Designated Safeguarding Officer as necessary. Further action will then be taken in line with the CSERM-UNAS Safeguarding policy.

Implementation of this project requires collaboration with downstream implementation partners outside of participating communities, however all project implementation partners, staff and external consultants will be required to read, understand and sign the latest CSERM-UNAS code of conduct.

## Q29. Ethics

**Outline your approach to meeting the key principles of good ethical practice, as outlined in the guidance.**

CSERM has a long history of carrying out ethical research and sustainable development projects with communities across the archipelago. We have developed a strong institutional commitment to fulfilling our legal obligations as part of a national non-profit foundation, working with state and private sector partners in circumstances where this collaboration may provide the most effective solutions for project beneficiaries, and have been praised for our comprehensive, integrated and community-first approach. Open consultations, informed consent and meaningful collaboration are at the heart of what we do, delivering ownership of innovative sustainability frameworks to communities which often lack the financial or institutional means to act without third part support. Our ethics review policies are conducted through Universitas Nasional (UNAS), Indonesia's longest-established non-state higher education institution, emphasizing the rights to ownership, respect, recognition and capacity for self determination of all communities regardless of ethnic, racial, socioeconomic or cultural background. When carrying out our projects we endeavor to share vital technical insights and broader thematic studies as widely as possible, to both domestic and international audiences, as part of a commitment to education and applied knowledge for a better world, delivered with the highest degree of scientific integrity.

## Section 13 - FCDO Notifications

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### Q30. FCDO Notifications

**Please state whether there are sensitivities that the Foreign Commonwealth and Development Office will need to be aware of should they want to publicise the project's success in the Darwin Initiative in any country.**

No

**Please indicate whether you have contacted FCDO Embassy or High Commission to discuss the project and attach details of any advice you have received from them.**

Yes (no written advice)

## Section 14 - Project Staff

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### Q31. Project staff

**Please identify the core staff (identified in the budget), their role and what % of their time they will be working on the project.**

**Please provide 1-page CVs or job description, further information on who is considered core staff can be found in the [Finance Guidance](#).**

Name (First name, Surname)	Role	% time on project	1 page CV or job description attached?
Jito Sugardjito	<b>Project Leader</b>	15	Checked
Prawesti Wulandri	Project Manager	100	Checked
Andi Ismainna	Field Coordinator	50	Checked
Siti Holisoh	Finance Officer	60	Checked

**Do you require more fields?**


Yes


Name (First name, Surname)	Role	% time on project	1 page CV or job description attached?
Lisa Holisoh	Sea Cucumber Biology Specialist	40	Checked
Christopher Kelly	MER & Research Analyst	40	Checked
Sainal Nurdin	Field Officer	80	Checked
Dwi Cahyo Subroto	Research Analyst	80	Checked
Sandy Kerr	Coinvestigator	5	Checked
Joanne Porter	Coinvestigator	8	Checked
Michael Bell	Coinvestigator	10	Checked
<i>No Response</i>	<i>No Response</i>	0	Unchecked


**Please provide 1 page CVs (or job description if yet to be recruited) for the project staff listed above as a combined PDF.**

**Ensure the file is named clearly, consistent with the named individual and role above.**

 [COMBINED TEAM CV](#)

 12/12/2022

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 pdf 2.43 MB

**Have you attached all project staff CVs?**

Yes



## Section 15 - Project Partners

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### Q32. Project Partners

Please list all the Project Partners (including the Lead Partner - i.e. the partner who will administer the grant and coordinate the delivery of the project), clearly setting out their roles and responsibilities in the project including the extent of their engagement so far and planned.

This section should demonstrate the capability and capacity of the Project Partners to successfully deliver the project. Please provide Letters of Support for all project partners or explain why this has not been included.

The partners listed here should correspond to the Delivery Chain Risk Map (within the Risk Register template) which you will be asked to submit if your project is recommended for funding.

<b>Lead partner name:</b>	Center for Sustainable Energy and Resources Management @ Universitas Nasional (CSERM-UNAS)
<b>Website address:</b>	<a href="https://cserm.unas.ac.id/">https://cserm.unas.ac.id/</a>
<b>Details (including roles and responsibilities and capacity to engage with the project):</b>	As the lead partner, C-SERM will handle primary implementation of the project, working with local community contacts established via the Blue Communities Project to secure participation by local women and provide suitable education and training activities for them. The CSERM team will be responsible for constructing, monitoring, harvesting and developing sea cucumber ranching methodology while at the same time working with external partners to strengthen local economic capacity for processing and export. At the conclusion of the project, CSERM will lead the national-level promotion of sea cucumber ranching as a viable solution for women's economic empowerment among small island communities.
<b>Allocated budget (proportion or value):</b>	£ [REDACTED]
<b>Represented on the Project Board</b>	<input checked="" type="radio"/> Yes
<b>Have you included a Letter of Support from this organisation?</b>	<input checked="" type="radio"/> Yes
<b>Have you provided a cover letter to address your Stage 1 feedback?</b>	<input checked="" type="radio"/> Yes

**Do you have partners involved in the Project?**

Yes

**1. Partner Name:** Herriot-Watt University

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**Website address:** <https://www.hw.ac.uk/>

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**Details (including roles and responsibilities and capacity to engage with the project):**

Heriot-Watt University will provide critical expertise in the habitat assessment and data collection phase of the research, helping develop replicable, effective methodologies to produce high quality research data. They will also support the ongoing development of aquaculture operations in a way which conforms to the highest level of sustainable management for coastal ecosystems and utilization of associated resources. Their publications network will support dissemination of project data and actionable knowledge to key stakeholders both within Indonesia and Internationally. In the event of international travel disruptions as a result of the COVID-19 pandemic, the bulk of these responsibilities will be carried out online as necessary.

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**Allocated budget:** £ [REDACTED]

---

**Represented on the Project Board**  Yes

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**Have you included a Letter of Support from this organisation?**  Yes

---

**2. Partner Name:** Regional Planning and Development Agency (BAPPEDA) Selayar District

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**Website address:** <https://kepulauanelayarkab.go.id/>

---

**Details (including roles and responsibilities and capacity to engage with the project):** *No Response*

---

**Allocated budget:** £0.00

---

**Represented on the Project Board**  No

---

**Have you included a Letter of Support from this organisation?**  Yes

---

**3. Partner Name:** *No Response*

---

**Website address:** *No Response*

---

Details (including roles and responsibilities and capacity to engage with the project): *No Response*

---

**Allocated budget:** £0.00

---

**Represented on the Project Board**  Yes  
 No

---

Have you included a Letter of Support from this organisation?  Yes  
 No

---

---

**4. Partner Name:** *No Response*

---

**Website address:** *No Response*

---

Details (including roles and responsibilities and capacity to engage with the project): *No Response*

---

**Allocated budget:** £0.00

---

**Represented on the Project Board**  Yes  
 No

---

Have you included a Letter of Support from this organisation?  Yes  
 No

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**5. Partner Name:** *No Response*

---

**Website address:** *No Response*

---

**Details (including roles and responsibilities and capacity to engage with the project):** *No Response*

---

**Allocated budget:** £0.00

---

**Represented on the Project Board**  Yes  No

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**Have you included a Letter of Support from this organisation?**  Yes  No

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**6. Partner Name:** *No Response*

---

**Website address:** *No Response*

---

**Details (including roles and responsibilities and capacity to engage with the project):** *No Response*

---

**Allocated budget:** £0.00

---

**Represented on the Project Board**  Yes  No

---

Have you included a Letter of Support from this organisation?  Yes  No

---





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If you require more space to enter details regarding Partners involved in the project, please use the text field below.

*No Response*

Please provide a cover letter responding to feedback received at Stage 1 if applicable and a combined PDF of all letters of support.

---

 [COVER LETTER STAGE 2 \(r29\) - JITO](#)  
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## Section 16 - Lead Partner Capability and Capacity

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### Q33. Lead Partner Capability and Capacity

Has your organisation been awarded Darwin Initiative, Darwin Plus or Illegal Wildlife Trade Challenge Fund funding before (for the purposes of this question, being a partner does not count)?

No

If no, please provide the below information on the lead partner.

What year was your organisation established/ incorporated/ registered? 01 January 2014

---

What is the legal status of your organisation?  University

---

How is your organisation currently funded? CSERM is an active research and conservation organization, with activities funded on a project by-project basis by external partners and donors both domestic and international. Operational and other general running costs (overheads) are funded largely by the National University of Indonesia (Universitas Nasional, UNAS), a private educational foundation which in turn receives funding from student tuition fees as well as donor grants.

---

**Describe briefly the aims, activities and achievements of your organisation. Large organisations please note that this should describe your unit or department.**

<b>Aims</b>	CSERM aims to be an internationally recognised centre for the assessment, development and promotion of renewable energy, ecosystem services protection via a multi-disciplinary approach. CSERM advocates strongly for the development of local capacity which significantly contributes to people's sustainable economic, social and environmental well-being.
<b>Activities</b>	<ul style="list-style-type: none"> <li>-Identifying and assessing renewable energy resources and technology at local levels in remote areas</li> <li>-Supporting sustainable livelihoods for local communities.</li> <li>-Collaborating with Academia, Business, Government, and Civil society to develop Best Practices for human capital and supply chain development.</li> <li>-Training local communities and industry professionals in sustainability innovations</li> </ul>
<b>Achievements</b>	<ul style="list-style-type: none"> <li>-Developed an international network of industry practitioners and academics working towards key sustainability goals</li> <li>-Established sustainable livelihoods research hubs across Indonesia to develop solutions with local communities</li> <li>-Established sustainable marine resources as a key government policy agenda</li> <li>-Introduced sustainable hydropower and renewable energy capability in Aceh province</li> </ul>

**Provide details of 3 contracts/projects held by the lead partner that demonstrate your credibility as an organisation and provide track record relevant to the project proposed.**

**These contracts/awards should have been held in the last 5 years and be of a similar size to the grant requested in your Darwin application.**

<b>Contract/Project 1 Title</b>	Decentralized Sustainable Energy for Wider Indonesia: Towards Energy Security and Independence
<b>Contract Value/Project budget (include currency)</b>	USD [REDACTED]
<b>Duration (e.g. 2 years 3 months)</b>	1 year
<b>Role of organisation in project</b>	CSERM UNAS selected 15 researchers from Indonesia to participate with other 15 Researchers from UK selected by Robert Gordon University, in a series of conferences involving the Directorate General of the Ministry of Energy and Mineral Resources in collaboration with local communities to create staged pathways towards increasing energy productivity.

**Brief summary of the aims, objectives and outcomes of the project**

- Framing innovative solution to empower local governments, academic, and businesses to make well-informed decisions on selecting and implementing the most appropriate small scale sustainable energy systems
- Creation of staged pathways towards increasing productivity through the appropriately designed and managed provision of reliable and secure energy
- Improve development of remote, sparsely populated (esp. small island) communities via diffuse, easily accessible energy resources.

---

**Client/independent reference contact details (Name, e-mail)**

Dr. Leuserina Garniati (research fellow, Robert-Gordon University),  
[REDACTED]

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**Contract/Project 2 Title**

Peatland Mapping Coordination with World Resource Institute

---

**Contract Value/Project budget (include currency)**

GPB [REDACTED]

---

**Duration (e.g. 2 years, 3 months)**

2 years, 3 months

---

**Role of organisation in project**

Conducted training, preparation and implementation of peatland mapping in and around concession areas, organising experts and concession managers to develop agreed-upon area maps upon which to base site development and environmental management regimes

---

**Brief summary of the aims, objectives and outcomes of the project**

tracking and strengthening climate action in Indonesia across critical peatland habitat

---

**Client/independent reference contact details (Name, e-mail)**

Tjokorda Nirarta Samadhi (Director WRI Indonesia), [REDACTED]

---

**Contract/Project 3 Title**

CGRF Blue Communities with Plymouth Marine Laboratory, University of Exeter, Plymouth University, Hanoi National University, University of Western Phillipines, University of Malaya

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**Contract Value/Project budget (include currency)**

GBP [REDACTED]

---

<b>Duration (e.g. 2 years, 3 months)</b>	4 years
<b>Role of organisation in project</b>	Focus research, (and learning by doing), on case studies in UNESCO Biosphere Reserves in Indonesia (Takabonerate – Selayar Island, Tambolongan Island, and Polassi Island), community outreach and targeted development frameworks, identifying strategic points for intervention towards sustainable management of coastal resources
<b>Brief summary of the aims, objectives and outcomes of the project</b>	Building capacity for integrated planning through sustainable interactions with marine ecosystems for the health, wellbeing, food and livelihoods of coastal communities. Facilitate innovative application of integrated planning in the marine environment within the UNESCO Man and the Biosphere Program, and other marine parks and their communities, in East and Southeast Asia. Respond to the UN Sustainable Development Goals of no poverty, zero hunger and good health and well-being for coastal communities through the sustainable use of marine resources
<b>Client/independent reference contact details (Name, e-mail)</b>	Melanie Austen (Professor of Ocean and Society, Plymouth University), [REDACTED]

**Have you provided the requested signed audited/independently examined accounts?**

**If yes, please upload these on the certification page. Note that this is not required from Government Agencies.**

Yes

## Section 17 - Certification

### Certification

**On behalf of the**

Trustees

**of**

Universitas Nasional Indonesia - Center for Sustainable Energy & Resources Management

**I apply for a grant of**

£556,778.00





**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 project 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 enclosed CVs for project key project personnel, cover letter, letters of support, a budget, logframe, Safeguarding Policy and project implementation timetable (uploaded at appropriate points in application)
- Our last two sets of signed audited/independently verified accounts and annual report are also enclosed.





Checked

<b>Name</b>	Dr. Jito Sugardjito
<b>Position in the organisation</b>	Director - Center for Sustainable Energy & Resources Management
<b>Signature (please upload e-signature)</b>	 <a href="#">ttd jito</a>  09/12/2022  16:03:48  png 75.5 KB
<b>Date</b>	09 December 2022

**Please attach the requested signed audited/independently examined accounts.**

 [Eng-Lap Keu UNAS 2020 KAP AAFA](#)  
 12/12/2022  
 07:50:30  
 pdf 281.95 KB

**Please upload the Lead Partner's Safeguarding Policy as a PDF**

 [CSERM SAFEGUARD](#)  
 09/12/2022  
 16:01:48  
 pdf 2.11 MB

## Section 18 - Submission Checklist

### Checklist for submission

	<b>Check</b>
<b>I have read the Guidance, including the "Darwin Initiative Guidance", "Monitoring Evaluation and Learning Guidance", "Risk Guidance" and "Financial Guidance".</b>	Checked
<b>I have read, and can meet, the current Terms and Conditions for this fund.</b>	Checked
<b>I have provided actual start and end dates for the project.</b>	Checked

<b>I have provided my budget based on UK government financial years i.e. 1 April – 31 March and in GBP.</b>	Checked
<b>I have checked that our budget is complete, correctly adds up and I have included the correct final total at the start of the application.</b>	Checked
<b>The application been signed by a suitably authorised individual (clear electronic or scanned signatures are acceptable).</b>	Checked
<b>I have attached the below documents to my application</b>	
• <b>my completed logframe as a PDF using the template provided</b>	Checked
• <b>my budget (which meets the requirements above)</b>	Checked
• <b>my completed implementation timetable as a PDF using the template provided</b>	Checked
<b>I have included a 1 page CV or job description for all the Project Staff identified at Question 31, including the Project Leader, or provided an explanation of why not.</b>	Checked
<b>I have included a letter of support from the Lead Partner and partner(s) identified at Question 32, or an explanation of why not.</b>	Checked
<b>I have included a cover letter from the Lead Partner, outlining how any feedback received at Stage 1 has been addressed where relevant.</b>	Checked
<b>I have included a copy of the Lead Partner’s safeguarding policy, which covers the criteria listed in Question 28.</b>	Checked
<b>I have been in contact with the FCDO in the project country/ies and have included any evidence of this. If not, I have provided an explanation of why not.</b>	Checked
<b>I have included a signed copy of the last 2 annual report and accounts for the Lead Partner, or provided an explanation if not.</b>	Checked
<b>I have checked the Darwin Initiative website immediately prior to submission to ensure there are no late updates.</b>	Checked
<b>I have read and understood the Privacy Notice on the Darwin Initiative website.</b>	Checked

**We would like to keep in touch!**

**Please check this box if you would be happy for the lead applicant (Flexi-Grant Account Holder) and project leader (if different) to be added to our mailing list. Through our mailing list we share updates on upcoming and current application rounds under the Darwin Initiative and our sister grant scheme, the IWT Challenge Fund. We also provide occasional updates on other UK Government activities related to biodiversity conservation and share our quarterly project newsletter. You are free to unsubscribe at any time.**

Unchecked

### **Data protection and use of personal data**

Information supplied in the application form, including personal data, will be used by Defra as set out in the **Privacy Notice**, available from the [Forms and Guidance Portal](#).

This **Privacy Notice must be provided to all individuals** whose personal data is supplied in the application form. Some information may be used when publicising the Darwin Initiative including project details (usually title, lead partner, project leader, location, and total grant value).

Project Title:

	Activity	No. of months	Year 1 (23/24)				Year 2 (24/25)				Year 3 (25/26)				Year 4 (26/27)				Year 5 (27/28)			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Output 1	Education and awareness raising of the importance, ecology and economic potential of seagrass beds provided to local communities as a precursor for pilot projects																					
1.1	Seagrass Habitat Assessment	3																				
1.2	Creating digital/printed education & training materials for all stakeholders	5																				
1.3	Women's only project focus groups	10																				
1.4	Monthly community meetings	10																				
1.5	FGDs with government planning and development agency (BAPPEDA)																					
1.6	Pilot project sites established																					
Output 2	Local Women from PKK (Family Welfare Empowerment Associations) trained in sea cucumber ranching at 3 project sites																					
2.1	Construct pilot project Sites	1																				
2.2	Weekly workshops	12																				

Project Title:

	Activity	No. of months	Year 1 (23/24)				Year 2 (24/25)				Year 3 (25/26)				Year 4 (26/27)				Year 5 (27/28)			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
2.3	Modify & refine pilot project operations	12																				
2.4	Harvest, process and sell-back cultured stock (estimated)	2																				
2.5	Participant feedback and focus groups (Women only)	1																				
Output 3	Expand aquaculture operations w/ profit from first harvest																					
3.1	Elect coordinator for aquaculture cooperative	1																				
3.2	Construct/expand new aquaculture sites	1																				
3.3	Establish SOP for monitoring, maintenance	1																				
3.4	Monitor and maintain aquaculture sites, ongoing harvest & restock	18																				
3.5	Weekly field officer site visits	6																				
3.6	Monthly site visits	12																				
Output 4	Sea cucumber ranching integrated into district-level economic planning agenda																					
4.1	Processing and preparation infrastructure developed	9																				
4.2	Quarterly FGDs with BAPPEDA, PT Sejahtera Putra Kusuma, Local	12																				

Project Title:

	Activity	No. of months	Year 1 (23/24)				Year 2 (24/25)				Year 3 (25/26)				Year 4 (26/27)				Year 5 (27/28)			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	communities and other stakeholders																					
4.3	Harvesting of ready stock, processing and selling	1																				
4.4	Ranching income and household economic surveys for participants and other local stakeholders	3																				
4.5	Bi-weekly monitoring and reporting	6																				
Output 5	Sea cucumber aquaculture business transferred to local women's ownership																					
5.1	Monthly monitoring, feedback	6																				
5.2	AD/ART (articles of association) meetings	1																				
5.3	Management and operation transfer ceremony	1																				
5.4	Additional supply & buyback contract signed between participants and PT Sejahtera Putra Kusuma	1																				
5.5																						

Project Title:

Project Summary	SMART Indicators	Means of Verification	Important Assumptions
<p><b>Impact:</b> Effective conservation and sustainable utilization of Indonesian seagrass beds through demonstrating the potential of near-shore sea cucumber ranching practices as a vehicle for female economic empowerment and broader coastal resilience (Max 30 words)</p>			
<p><b>Outcome:</b> Adopting sustainable sea cucumber ranching delivers a profitable supplementary livelihood as economic empowerment for local women from 120 households across 3 coastal villages and effective seagrass habitat conservation (Max 30 words)</p>	<p>0.1 - Increase in 100 participating women's monthly income from seagrass associated activities of at least 100% in year 3 compared with year 1 baseline, overall monthly income of at least 50% in year 3 compared with year 1 baseline, overall income of participating households by at least 10% in year 3 compared with year 1 baseline (established in project)</p> <p>0.2 - 100 women report improved economic resilience to external shocks, increased household decision-making power and more financial independence as a result of project implementation in year 3 compared to year 1 baseline</p> <p>0.3 - At least 50% of participating women elect to continue with or expand existing 'ranching' operations as an alternative livelihood beyond the project life span</p>	<p>0.1a - Participating women's monthly coastal 'foraging' income survey, annual 0.1b - Participant interviews, annual 0.1b - Participating women's monthly income survey, annual 0.1c - Participating household monthly income survey, annual</p> <p>0.2 - Female economic empowerment survey 2023, 2026</p> <p>0.3a - Participant feedback surveys &amp; interviews regarding successes, shortcomings, intent to continue, 2025 0.3b - Sea cucumber ranching community-owned enterprise (BUMDes) membership records, 2025</p> <p>0.4a - vertical growth analysis 2022, 2025 (hole-punch method, <i>Arnull et al. (2021)</i>) 0.4b - annual quadrat sampling extrapolation method</p>	<p>Participating women and households openly and accurately report relevant income data</p> <p>Participating women opt to formalize their aquaculture enterprise in accordance with government initiatives</p> <p>No external shocks, disasters (of human or natural origin) which negatively affect seagrass ecosystem health</p> <p>Economic benefits of project implementation encourage participation and support for associated initiatives by wider community</p>

Project Title:

	<p>0.4 - improved seagrass ecosystem health in and around 50m radius of sustainable 'ranching' sites ([a] seagrass growth rate increase of at least 10% compared with control sites in year 2, 20% in year 3, [b] seagrass coverage increase of at least 10% compared with year 1 baseline, [c] benthic macroinvertebrate abundance increase by at least 5% compared with year 1 baseline, species diversity 10% higher than control sites)</p> <p>0.5 - No-take zone/no prop scarring zone established around aquaculture 'ranching' sites to protect commercial operations and associated seagrass habitat (month 6)</p>	<p>0.4c - annual biosurvey of benthic fauna</p> <p>0.5 - Public awareness raising materials (signage) set up by local communities around participating villages photographed</p>	
<p><b>Outputs:</b> 1. Education and awareness raising of the importance, ecology and economic potential of seagrass beds provided to local communities as a precursor for pilot projects</p>	<p>1.1 - Site survey conducted in 2 villages w/ biology specialist &amp; PT Sejahtera Putra Kusuma, 3 ideal pilot project sites confirmed from candidate locations (month 1)</p> <p>1.2 - Household income survey conducted, direct economic benefits of grow-out and buy-</p>	<p>1.1 - Habitat assessment data collected, recorded, data shared with research team and Planning and Development Agency (BAPPEDA)</p> <p>1.2 - Household income data from seagrass activities corresponds to preliminary baseline data from local government</p>	<p>Existing interest by local community partners remains until project start date in 2023</p> <p>Sea grass habitat health remains in good enough condition to facilitate aquaculture pilot project</p> <p>No conflict of interest between identified pilot sites and changes</p>



Project Title:

	<p>back model for 2 target villages confirmed (month 1)</p> <p>1.3 - Habitat ecology profile of pilot project sites created, including: sea cucumber diversity and abundance, seagrass health (density, species composition, annual growth estimation), and biodiversity baseline for target seagrass meadows (2 weeks after survey)</p> <p>1.4 - Formal agreement to develop 3 aquaculture pilot sites signed by local government and community representatives within 1 month of site survey</p>	<p>1.3 - Habitat ecology profile created, presented to local communities at FGD</p> <p>1.4 - Pilot project agreement drafted, signed, scanned, archived</p>	<p>to local government development or planning agenda</p>
<p><b>2.</b> Participating women trained to successfully manage and operate aquaculture pilot project sites</p>	<p>2.1 - contract with PT Sejahtera Putra Kusuma to stock, grow-out and resell holothuria scabra stock over 12 month pilot program signed by 60 groups of women (each comprised of 2 local households)</p> <p>2.2 - at least 75% of participating women successfully stock, grow-out and sell at least 50% of cultured stock at target weight (450g/individual) (month 12)</p> <p>2.3 - Technical SOP document for each site drafted, signed by</p>	<p>2.1 - Contract signed (per BUMdes) by participating women's groups</p> <p>2.2 - at least IDR1,350,000,000 in total income generated across all pilot project sites from initial harvest</p> <p>2.3 - Waterproof SOP manual created for each site for reference and instructions, distributed all local participants</p>	<p>Participating women are able to attend repeated training sessions and happy to collaborate on monitoring/maintenance activities</p> <p>No external shocks, disasters (of human or natural origin), theft or destruction which disrupts pilot operations</p>

Project Title:

	participating women following 12-month pilot period		
<b>3. Pilots sites expanded into full-scale sea cucumber ranches</b>	<p>3.1 - At least 75% of workshop/pilot site participants elect to participate in expanded pilot site operation</p> <p>3.2 - Responsibility for management and monitoring of expanded sites in accordance with sustainability SOP assumed by participating women (month 13)</p>	<p>3.1a - Management/monitoring agreement signed by all participants, responsibility rota established</p> <p>3.2 - Attendance, rota and site monitoring report by project field officers to confirm duties carried out</p>	Participating women are able to allocate sufficient time, and are happy to collaborate on monitoring/maintenance activities
<b>4. Ranching sites developed into profitable aquaculture industry in collaboration with PT Sejahtera Putra Kusuma</b>	<p>4.1 - Expanded 'ranching' sites generate ROI of at least 120% in year 3 (including initial construction costs), with sustainable harvesting regimen in place (month 30)</p> <p>4.2 - Contract signed for ongoing grow-out and buy-back agreement between at least 75% of participating women's groups (after initial pilot stage) and PT Sejahtera Kusuma (month 18)</p> <p>4.3 - Sea cucumber aquaculture established as economic development priority for Selayar District (month 35)</p>	<p>4.1 - Survey of net ranching income per village 2023-2025</p> <p>4.2 - contracts reviewed, confirmed by core project team</p> <p>4.3a - Letters of support from district head, planning and development agency, local industry partners, commitment to collaborate towards developing the industry</p> <p>4.3b - Supporting policy framework adopted by district government</p>	<p>No external shocks, disasters (of human or natural origin), theft or destruction which disrupts expanded site operations or secondary processing activities</p> <p>Market price fluctuations limited to within 50% of year 1 baseline</p>

Project Title:

<p><b>5. Sustainable aquaculture industry transferred to local ownership and management</b></p>	<p>5.1 - At least 50% of participants (female) in the expanded 'ranching' phase elect to take over management of the sites and associated processing activities following the end of project activities in year 3</p> <p>5.2 - At least 10% profits from sea cucumber aquaculture reinvested in site maintenance/expansion at 3 sites (month 35)</p>	<p>5.1 - Act of registration for 3 village-owned enterprise to take over site management and sea cucumber processing with at least 50% of project participants registering as members at the end of year 3.</p> <p>5.2 - enterprise financial reporting end of year 3</p>	<p>Improved livelihoods encourage women to seek higher ROI from sea cucumber ranching</p>
<p><b>Activities Activities</b> (each activity is numbered according to the output that it will contribute towards, for example 1.1, 1.2 and 1.3 are contributing to Output 1)</p> <p>Output 1:</p> <p>1.1 - Seagrass bed biosurvey to establish baseline ecological data (species composition, diversity, seagrass coverage &amp; growth rates) for education and awareness raising program</p> <p>1.2 - Printed / digital materials created for dissemination among all local parties</p> <p>1.3 - 12 (4x3) women's only focus groups to identify gender-specific concerns, establish support for project development and participation, and receive feedback for modifying approach in line with local women's concerns</p> <p>1.4 - 12 (4x3) monthly community meetings introducing project approach and objectives, receiving feedback for modifying approach in line with local community concerns</p> <p>1.5 - 3 monthly FGDs with local government agencies introducing project approach and objectives, receiving feedback for modifying approach</p> <p>1.6 - Collaborative mapping of potential study sites in order to identify ideal locations for considering the interests of all parties</p> <p>Output 2:</p> <p>2.1 - Construct 9 (3x3) 16m2 pilot project sites at specified locations, stock with juvenile sea cucumbers ( density: 3/m2)</p> <p>2.2 - Hold 48 weekly workshops over the course of 12 months to engage local women in the process and provide basic training regarding monitoring, maintenance and harvesting practices</p> <p>2.3 - Modify pilot operations based on data from each site to maximize productivity, produce SOP manual for local women</p> <p>2.4 - Harvest, process and sell sea cucumbers from pilot sites, record weight, age, health and price</p>			

Project Title:

2.5 - 3 focus groups with participating women to give feedback about project implementation, provide any additional information, and prepare for site expansion

Output 3:

3.1 - Elect local women's group coordinator for each village to manage maintenance and monitoring responsibilities for expanded sites

3.2 - Construct new expanded ranching sites (size based on pilot site data), stock with juvenile sea cucumbers (density based on pilot site data)

3.3 - Establish work rota for monitoring, maintenance by participating women

3.4 - Monitor and maintain expanded sites for 9-12 months until first round stock reach weight of 450g, restock juveniles at determined intervals

3.5 - Weekly site visits by field officers to assess progress for reporting, give feedback and technical support, and identify potential issues

Output 4:

4.1 - Monthly preparatory workshops for participating women on preparation and processing of sea cucumbers for buy-back model

4.2 - Quarterly FGDs with local government and industry partners to identify and prepare necessary physical, institutional or regulatory infrastructure for developing sea cucumber industry

4.3 - Harvesting of ready stock, processing and selling sea cucumbers from expanded sites, recording weight, age, health and price conducted by participating women for profit with assistance from field officers

4.4. - Net ranching income surveys & sea cucumber price surveys conducted by field officers

4.5 - Bi-weekly monitoring and reporting of site operations, stock development by field officers

Output 5:

5.1 - Monthly monitoring of site operations by field officers, reporting of data collected by participating women

5.2 - AD/ART (articles of association) meetings held to establish 3 Women's cooperative village enterprise (BUMDes) SOP and operational structure

5.3 - Ceremony formally transferring management and operation of ranching sites, coordination of processing activities and sales to BUMDes