

# REPORT OF THE ADAPTATION FUND PORTFOLIO MONITORING MISSION IN PERU

ADAPTATION TO THE IMPACTS OF CLIMATE CHANGE ON PERU'S COASTAL MARINE  
ECOSYSTEM AND FISHERIES

EXTERNAL CONSULTANT: ANA PAULA MENDEZ COSAMALON



Photo: Sailing ship in Cabo Blanco - PMM visit

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## ACRONYMS

AF: Adaptation Fund

AMARTEMM: Asociación de Mujeres Artesanas de Medio Mundo (in English: Association of Women Artisans of Medio Mundo)

APROBIOSPECC: Asociación de Productoras de Biofertilizantes "San Pedro – Carquín" (in English: Association of Women Biofertilizer Producers "San Pedro - Carquín")

DPA: Desembarcadero Pesquero Artesanal (in English: Artisanal Fishing Landing)

EAF: Ecosystem Approach to fisheries

EBA: Ecosystem-Based Adaptation

EPAPROMAR "La Ruta de la Anchoveta" (in English: EPAPROMAR Anchovy's route)

IMARPE: Instituto del Mar del Perú (in English: Institute of the Sea of Peru)

MINAM: Ministerio del Ambiente (in English: Ministry of Environment)

MINAGRI: Ministerio de Agricultura (in English: Ministry of Agriculture)

MINCETUR: Ministerio de Comercio Exterior y Turismo (in English: Ministry of Foreign Trade and Tourism)

MYPE: Micro y Pequeña Empresa (in English: Micro and Small Business)

OSPA: Organizaciones Sociales de Pescadores Artesanales (in English: Social Organizations of Artisanal Fishermen)

PRODUCE: Ministerio de la Producción (in English: Ministry of Production)

PAMC: Proyecto de Adaptación Marino Costero (in English: Coastal Marine Adaptation Project)

PMM: Project Monitory Mission

Profonanpe, fondo ambiental del Perú (in English: Profonanpe, Peruvian Environmental Fund)

SAT: Sistema de Alerta Temprana (in English: Early Warning System)

SERFOR: Servicio Nacional Forestal y de Fauna Silvestre (in English: National Forestry and Wildlife Service)

SERNANP: Servicio Nacional de Áreas Naturales Protegidas por el Estado (in English: National Service of Natural Protected Areas by the State)

### Commented [MOU1]:

Profonanpe has informed me that they now consider "Profonanpe" to be a standalone name rather than an acronym.

"Profonanpe," which stands for "Fondo Ambiental del Perú," is translated as "Peruvian Environmental Fund."

I made the adjustment in the document, replacing "PROFONANPE" with "Profonane" and using "Profonanpe, Peruvian Environmental Fund" instead of "Profonanpe, Peruvian Trust Fund for National Parks and Protected Areas."

After doing the changes, do you consider this information (Profonanpe, fondo ambiental del Perú) fixes in the acronyms section?

## EXECUTIVE SUMMARY

Between October 16th and 20th, 2023, representatives from the Adaptation Fund Board Secretariat conducted a Portfolio Monitoring Mission (PMM) in Peru to the project "Adaptation to the Impacts of Climate Change on Peru's Coastal Marine Ecosystem and Fisheries", which was implemented by Profonampe, Peruvian Environmental Fund and was executed by the Ministry of Production. The project's objective is to reduce the vulnerability of coastal communities, ecosystems, and resources to the adverse impacts of climate change.

The project spanned four years from May 17th, 2018, to April 17th, 2023 and it has a budget of US\$ 6,950,239. The PMM took place six months after its conclusion. The Mission included meetings in Lima with high-level segment national authorities<sup>1</sup> and visits to 14 initiatives in the Peruvian localities of a) Máncora (from Máncora to Cabo Blanco) and b) Huacho (from Vegueta to Punta Salinas) with the aim of collecting and analyzing data on lessons learned and best practices from the project. The overarching goals of the mission were to i) learn from concrete adaptation practices; ii) assess the impacts of the fund intervention in a specific sector, evaluating improvements in marine ecosystems and fisheries; and iii) learn from Direct Access and inter-institutional capacity building and coordination.

It is crucial to highlight the project's significant potential for the immediate future of the local partners. The PMM identified lessons learned and provides recommendations, as detailed in this report.

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<sup>1</sup> The complete agenda is in Annex I

## INTRODUCTION

### *Background and scope of the mission*

1. The Adaptation Fund Board (AFB) approved the implementation plan for the Fund's medium-term strategy for the period 2023-2027 ("MTS 2023-2027") during its 40th meeting. Aligned with both the MTS 2023-2027 and the Fund's Knowledge Management strategy (approved at its 28th meeting), the Board actively utilizes information from its funded projects/programs currently under implementation, to draw insights from its distinctive decision-making structure and operations, in order to: (i) bolster countries' capacity and knowledge for enhancing the design and effectiveness of future adaptation projects/programs and (ii) inform its decision-making, heighten transparency, and enhance the overall effectiveness of the Fund.
2. Conducting missions to projects/programs under implementation is one of the ways to systematically collect and analyze lessons learned at a portfolio level.
3. To date, Portfolio Monitoring Missions (PMM) have been conducted for single-country projects in Peru, Argentina, Armenia, Cambodia, Chile, Colombia, Cook Islands and Samoa, Costa Rica (virtual), Ecuador, Egypt, Georgia, Honduras, Indonesia, Jamaica, Mongolia, Nicaragua, Rwanda, Seychelles (virtual), Senegal, South Africa, Turkmenistan, Uruguay, and one regional project implemented in Benin, Burkina Faso, Côte d'Ivoire, Ghana, Mali, and Togo. These missions have yielded valuable lessons on the experience of direct access, project/program implementation, institutional arrangements, and the execution of adaptation actions in the visited countries. Projects and programs visited are focused on water and coastal management, ecosystem-based adaptation, disaster risk reduction, as well as enhanced agricultural practices to strengthen food security, among others.
4. The project "Adaptation to the Impacts of Climate Change on Peru's Coastal Marine Ecosystem and Fisheries" was executed by Profonanpe, Peruvian Environmental Fund. The project's objective is to diminish the vulnerability of coastal communities, ecosystems, and diverse resources to the adverse impacts of climate change.
5. This PMM took place from 16 to 20 October 2023, just before the Latin America and Caribbean Biodiversity Funds (RedLAC) conference scheduled on 23 to 26 October in Cusco. This project was chosen for the PMM for several reasons, including:
  - The opportunity to learn from concrete implemented adaptation practices, such as the restocking and co-management of Peruvian scallops' natural banks, the development of aquaculture activities, support for sustainable tourism, and the deployment of a climatic and oceanographic surveillance system in coastal marine ecosystems at regional and local scales.
  - The opportunity to observe the impacts of the Fund intervention in a specific sector (improve marine ecosystem and fisheries).
  - The opportunity to further learn from the challenges and best practices related to inter-institutional capacity building and coordination.

## I. PROJECT CONTEXT AND COMPONENTS

6. The project "Adaptation to the Impacts of Climate Change on Peru's Coastal Marine Ecosystem and Fisheries" was implemented under the financing agreement between the Adaptation Fund (AF) and Profonampe for a total grant amount of US\$ 6,950,239.

7. The project aimed to actively assist the Peruvian government in mitigating the vulnerability of coastal communities to climate change impacts on coastal marine ecosystems and fisheries resources. The outcomes comprehensively encompass the operational impacts of the promoted adaptation measures, the developed management tools, and the contributions to equipment and capacity building in science. These elements provide the necessary foundation to outline a roadmap for the artisanal fishing sector. The primary beneficiaries were the fishing communities in the pilot areas of Máncora and Huacho. The implementing agencies were the Ministry of Production (PRODUCE) and the Marine Institute of Peru (IMARPE). The project has four components:

<b>Component 1</b>	Implement interventions in strategic pilot places to enhance the resilience of target coastal communities and key coastal marine ecosystems to climate change and variability-induced stress.
<b>Component 2</b>	Implement a modern and efficient environmental monitoring and prediction system for coastal marine ecosystems at regional and local scales supporting fisheries adaptive management under the Ecosystem Approach to fisheries (EAF) principles.
<b>Component 3</b>	To build capacities and establish an information management system for the implementation of the principles of Ecosystem-Based Adaptation (EBA) and the EAF, and for the dissemination of project's lessons learned, targeting government officials, academia, local communities and other stakeholders.
<b>Component 4</b>	Management policies, regulations and measures promoting the resiliency of coastal ecosystems and local communities to climate change and variability-induced stress.

8. Each component of the project is quite complex and extensive, with several indicators. What has been observed in the PMM serves as a sample of the diverse effects the project aims to create: impacts on people's lives, the strengthening of state institutions and capacities, the integration of technology and research, and increased citizen awareness, among others.

9. During the five-day PMM visit, the majority of the time was dedicated to fieldwork visits to the 14 sub-projects—seven implemented in Huacho and seven in Máncora. This experience provided valuable insights into the specific adaptation practices of each initiative.

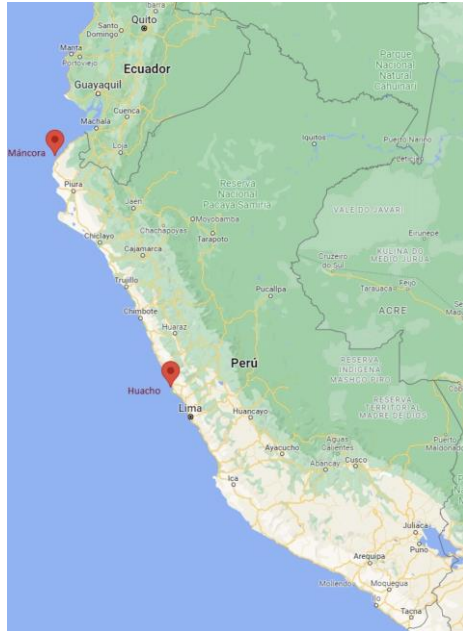
### *The selection of pilot areas<sup>2</sup>*

10. The Peruvian coast is impacted by two primary climatic and oceanographic systems. The northern coast is influenced by warm tropical waters and highland precipitation, while the

<sup>2</sup> This information was taken from the document "Application for Financing of the Adaptation Fund Project /Program".

rest experiences cold coastal upwelling waters and arid conditions. Current sea surface temperature trends reveal warming in the north and cooling from the central to the southern coast. This variation is associated with productivity trends and subsurface water oxygenation.

**Map 1: Geographical location of the pilot areas<sup>3</sup>**



Source: own elaboration based on Google Maps

11. The criteria for site selection involved a multidisciplinary analysis considering exposure to climate change, ecological features, artisanal fishing communities, and resource availability. Based on these criteria, Máncora and Huacho were selected. Máncora is in the warming northern region and Huacho represents the cooling Peruvian Coastal Upwelling Ecosystem.
12. Máncora, as part of the northern pilot area, faces the north-south migration season of the Equatorial Front. The area encompasses cities and fishing coves such as Máncora, Los Órganos, El Ñuro, and Cabo Blanco. As Máncora is the largest among the mentioned places, this area is going to be referred to as Máncora. These areas experience dynamic oceanographic conditions and are located at the boundary of the Eastern Tropical Pacific Coastal Ecosystem.
13. The second pilot area extends from Don Martín islet to Punta Salinas, covering cities like Végueta, Huacho, and Carquín. Huacho, being the main city, is characterized by coastal upwelling, making it crucial for marine life. The region includes Don Martín islet and Punta

<sup>3</sup> Pilot area in Máncora and Pilot area in Huacho

Salinas, forming part of the National Reserve System of Islands. It features nutrient-rich waters, important fishing zones, sandy beaches, and islands with diverse marine ecosystems.

## **II. METHODOLOGY OF THE PMM**

14. The PMM spanning from October 16 to 20, 2023, comprised high-level meetings in Lima with national authorities and four days of site visits, allowing the delegation to engage with local project beneficiaries.

15. The primary sources of information during the PMM encompassed:

i) Meetings with Peruvian authorities and specialists actively involved in or responsible for project-related matters.

ii) Fieldwork visits to Huacho and Máncora, the areas where the primary activities were underway, leveraging the project-provided infrastructure and knowledge.

iii) Meetings in the field with the main partners/beneficiaries and the local authorities, and IMARPE's scientific staff, which aimed at enhancing understanding, collecting key findings, and identifying best practices from each experience.

16. The PMM actively sought feedback from stakeholders, engaging in open conversations and observations to glean lessons, best practices, and recommendations. The information collected centered around specific adaptation practices in coastal areas impacted by climate change, details of the fund's intervention for marine ecosystem and fisheries improvement, and insights into Direct Access and inter-institutional capacity building and coordination.



### III. PMM ACTIVITIES

#### *Meetings*

17. The PMM's first day consisted of a series of meetings with Peruvian authorities who have been engaged in the project's five-year implementation. The high-level meeting brought together representatives from various institutions, including AF-PMM, Profonanpe, the former General Coordinator of the Coastal Marine Adaptation Project (in Spanish PAMC), the Ministry of Environment (MINAM), the Ministry of Production (PRODUCE), the National Service of Natural Protected Areas by the State (SERNANP), and the Institute of the Sea of Peru (IMARPE).

18. Following the initial high-level meeting, three subsequent bilateral meetings were conducted to facilitate the exchange of information. These meetings, centered on the functions and roles of the participating entities, focused on actions of interinstitutional coordination, key outcomes, lessons learned, and best practices within the PAMC. The PMM delegation, Profonanpe, and the former General Coordinator of the PAMC participated in these three meetings. The first meeting involved MINAM and SERNAMP, the second involved the board and staff of IMARPE, and the third involved PRODUCE and representatives of its National Program "Eat Fish."

#### *Fieldwork visits*

19. The visits spanned two days in each of the two pilot project areas, Huacho and Máncora. The tables below illustrate the characteristics of the visit, outlining the organizations involved, the areas of expertise where the project has intervened, and the participants in each visit.

**Table 1: activities program in Huacho**

Day	Organizations / Activity	Activity related to each project	Participants
2	Organization of Artisanal Fishermen San Pedro Caleta de Carquín  The MYPE Cristo Corazón de Carquín	Tourism  Fishery sustainable practices	Organization of Artisanal Fishermen - OSPA San Pedro Caleta de Carquín  MYPE Cristo Corazón de Carquín  District Municipality of Carquín
2	APROBIOSPECC: Association of Women Biofertilizer Producers "San Pedro - Carquín"	Biofertilizers	Members of APROBIOSPECC  Organization of Artisanal Fishermen - OSPA San Pedro Caleta de Carquín.  Municipality of Carquín
2	Isla Don Martín Tours  OSPA - Social Organizations of Artisanal Fishers	Tourism  Natural banks recovery	MYPE Isla Don Martín Tours  Vegueta District Municipality  Ministry of Culture - Vichama.
3	EPAPROMAR "Anchovy's route"	Tourism  Fishery sustainable practices	EPAPROMAR  IMARPE
3	Aquaponic Women's Association of Huacho  IMARPE office in Carquín	Aquaponics  Scientific support and research - IMARPE	Aquaponic Women's Association of Huacho  IMARPE
3	AMARTEMM: Association of Women Artisans of Medio Mundo.	Handicrafts - Tourism	Association of Women Artisans of Medio Mundo - AMARTEMM
3	Bandurria Artisan Enterprise	Handicrafts - Tourism	Bandurria Artisan Enterprise

Source: own elaboration based on fieldwork visits and Profonanpe's guidelines of the PMM visit

**Table 2: activities program in Máncora**

Day	Organizations	Activity related to each project	Participants
4	Pilot Cultivation Module for <i>Pteria sterna</i> (Pearl Oyster) and <i>Striostrea prismatica</i> (Native Oyster)  Organization of Artisanal Fishermen - OSPA in Los Órganos	Sustainable shell cultivation  Fishery sustainable practices	Organization of Artisanal Fishermen - OSPA  IMARPE  Municipality
4	Association of Women APROBION Los Órganos	Biofertilizers	President of the Organization of Artisanal Fishermen - OSPA  Municipality  IMARPE
4	Gastronomic initiative "Yura" in El Ñuro / MYPE Mar del Ñuro	Gastronomy  Tourism related to Fishery sustainable practices	Women's Gastronomic Initiative
4	Association of Women APROBION El Ñuro	Biofertilizers	Members of APROBION El Ñuro  President of the Organization of Artisanal Fishermen -OSPA  IMARPE  Governor
5	Entrepreneurship of "Hijos de Viento"	Tourism	Hijos del Viento Partners  IMARPE  Municipality
5	MYPE Pioneros del Pacifico SAC	Fishery sustainable practices	Association of Fishermen Members of MYPE Pioneros del Pacifico  IMARPE  Municipality of El Alto
5	Entrepreneurs of Cabo Blanco Pearls (jewelry)	Pearls and Jewelry Handicrafts	Women Partners  IMARPE

Source: own elaboration based on fieldwork visits and Profonanpe's guidelines of the PMM visit

20. For what it concerns gender equality, the visits highlighted that the projects directly associated with sea activities, such as natural bank recovery, sustainable shell cultivation, and sustainable fishery practices, predominantly engaged men. Men primarily participated also in activities tied to tourism, which required substantial knowledge of sea behavior and changes, with women contributing mainly to support roles.

21. In cases where projects were exclusively land-based, women assumed the primary beneficiary role, particularly in activities related to biofertilization, aquaponics, and the crafting of silver and natural fibers. These experiences were highly esteemed for establishing a dependable economic activity for the participants, fostering a transformative process within the household by reshaping traditional roles. Previously, the sole breadwinner was traditionally the man or husband, but now women not only contribute but also provide a significant income. However, the introduction of women into economic activities did not necessarily entail a redistribution of men's responsibilities within the domestic sphere of households.

22. The following table illustrates a comparison of activities based on their gender scope. This comparison was facilitated by considering sub-projects with similar resources, thematic areas of intervention, and characteristics of local partners.

**Table 3: activities classified by the gender of the main beneficiaries**

Men			Women		
Activity	Name of the association	Place	Activity	Name of the association	Place
<b>Fisheries</b>	Organization of Artisanal Fishermen San Pedro Caleta de Carquín and the MYPE Cristo Corazón de Carquín	Huacho	<b>Biofertilizers</b>	APROBIOSPECC: Women's Association for the Production of Biofertilizers	Huacho
	Artisan Fishermen Association of Végueta	Huacho		Association of Women APROBION El Ñuro	Piura - Ñuro
	Ñuro Fish, OSPA Ñuro Monitores	Piura		Association of Women APROBION Los Órganos	Piura - Órganos
	OSPA Los Órganos Pioneros del pacífico Monitores	Piura	<b>Aquaponics</b>	Aquaponic Women's Association of Huacho	Huacho
	MYPE Pioneros del Pacifico SAC.	Piura			
<b>Tourism</b>	Isla Don Martín Tours <a href="https://isladonmartin.com/">https://isladonmartin.com/</a>	Huacho	<b>Gastronomy</b>	Gastronomic initiative "Yura" in El Ñuro	Piura
	EPAPROMAR "Anchovy's Route"	Huacho	<b>Handicrafts</b>	Association of Women Artisans of Medio Mundo - AMARTEMM <a href="https://amartemm.com">https://amartemm.com</a>	Huacho
	MYPE Hijos del Viento	Piura		Bandurria Artisan Enterprise <a href="https://reactivartes.com">https://reactivartes.com</a>	Huacho
	MYPE Mar del Ñuro	Piura		Entrepreneurs of Cabo Blanco Pearls (jewelry) <a href="https://perlasdecaboblancocom">https://perlasdecaboblancocom</a>	Piura

Source: own elaboration based on fieldwork visits and Profonanpe's guidelines of the PMM visit

#### IV. MAIN FINDINGS FROM CONCRETE ADAPTATION PRACTICES

##### Main findings component 1

*Fisheries sustainable practices*



Photo: Cabo Blanco - Piura, Fisherman with the traceability camera - Profonanpe archives

23. Fishermen actively diversified their income sources facing diminishing fish stocks and the impact of climate change causing ocean warming. This warming notably influenced fish species' availability and migration patterns in the region. The project includes promoting sustainable tourism, improving traceability and fisheries commercialization, and implementing restocking and co-management for the Peruvian scallops' natural bank.

24. Other activities include the institutionalization of community groups for effective project management, establish committees for specific activities, and ensure fishing activities comply with legal standards, enhance accountability, and access support mechanisms and opportunities.

25. In addition, the project supported the introduction of cameras on fishing vessels which enables real-time information capture, generating QR codes that offer traceability to consumers. Technology for traceability allows fishermen to bypass intermediaries, thereby enhancing profitability. The current objective for fishermen is to catch fewer fish while earning more, underscoring the significance of resource sustainability.

26. The project intervenes across the entire fishing process, from catching and using nets to processing and marketing. The Chilean consultancy Shellcatcht installed 33 tracking devices and cameras, proving the investment's profitability. This success suggests potential expansion to more vessels, enhancing fishing sustainability and improving product quality.

#### *Sustainable shell cultivation*

27. Aquaculture has become a viable option, incorporating a process of technification and learning for the involved partners. The training provided encompasses various techniques related to larval capture, cultivation, harvest, and pearl inoculation.

28. The project contributes to formalizing the informal fishing guild by establishing a committee for aquaculture in the public registry. This step was mandatory for the administrative process required to obtain a marine concession for shell cultivation.

29. Fishing and marine authorities must grant each marine concession for aquaculture development, which takes time to complete. To commence shellfish cultivation in Los Órganos - Piura, the project was implemented in a marine area under the concession of the consultancy firm AgroMar del Pacífico S.A.

30. Obtaining a marine concession posed challenges due to lengthy administrative procedures, extending the regularization time beyond initial expectations. As a result, the project timelines were relatively short compared to the protracted permitting and concession process with the Peruvian Authorities.

#### *Scallops' natural banks recovery*

31. Rising sea temperatures, linked to the El Niño phenomenon, have disrupted scallop reproduction, and local harvesting practices, such as extracting young scallops and small octopuses, exacerbate the issue. Through the project, fishermen have received training to replenish the reproduction of scallops in natural banks and educate tourists about marine species protection.

32. It is crucial to ensure the protection of natural banks and the sustainability of this practice for biomass growth through restocking activities. Opportunities for funding through Profonape and other climate funds are being explored to scale up and implement additional strategies. In the short term, innovation projects are being assessed to continue progress in this direction.

33. IMARPE considers that the management plans and the expansion of natural banks ensure a process of decontaminating the sea; otherwise, the species will continue to be affected.

34. In the case of Huacho, the decontamination process requires increased coordination with the region and the Ministry of Housing to establish a treatment plant. Despite provincial interest, it has not been implemented. The regional government's infrastructure manager

stated that there should be an initiative from the municipality, which has not yet been undertaken.

*Sustainable tourism as a strategy to mitigate climate change impacts*

35. Due to ocean warming, fish are not appearing regularly; therefore, the fishery community must engage in tourism to diversify economic activities, ensuring a sustainable future for the local population. The project promotes alternative income sources to support fishermen during fishing bans, minimizing the impact on their livelihoods. However, understanding climate vulnerability in the tourism sector is essential.

36. Fishermen have received training as tour guides to educate tourists about sustainable fishing practices and to promote a conservation message, emphasizing how tourists can be active and responsible participants in raising awareness about the effects of climate change in the Peruvian ocean.

37. The tourism sector significantly supports economically vulnerable members of the artisanal fishing community nearing retirement, providing additional income in the absence of retirement benefits.

38. The community actively promotes and expands its tourism services through a website, social media, and collaboration with university students or tourism specialists.

39. In Huacho, the lack of an artisanal fishing dock for tourist activities has limited the ability to conduct tours when weather conditions are unfavorable.

**Activities with a focus on women's involvement**



Photo: Jewelry production - PMM visit

40. The project has boosted the economic autonomy of local women in the fishing industry, enhancing their livelihoods and creating opportunities for economic growth. This has spurred



women's active participation in both fishing and tourism-related activities, fostering a more inclusive and diversified community economy.

41. A highly positive aspect of the project is that women recognize the importance of integrating these activities into their family life. They have the option to bring their children with them, and there's also a more flexible work schedule.

#### *Biofertilizers*

42. The Biofertilizer project offers women an opportunity to contribute to family income and attain economic autonomy. Many project partners previously depended on their husbands' work as fishermen. However, they mentioned that the present economic circumstances, influenced by changing climate patterns and the COVID-19 pandemic, no longer permit sole reliance on one breadwinner.

43. Previously, 4 tons of fish waste were discarded in the local markets, but now they are utilized, reducing pollution. There is no waste because any unsuccessful output is directed to the biodigester instead of being discarded. They support the farmer's economy by offering a cost-effective alternative to synthetic fertilizers.

44. They have challenges in collecting fish waste during periods of fish scarcity. Using a motorcycle, they must seek fish in Vegeta or Huaora (other districts), where they typically find between 200 and 400 kg, needing to search for more afterward. This quantity varies and is closely tied to fishing conditions. They have achieved a production of up to 4 tons weekly among the 8 women, but when fishing is affected, the amount decreases, sometimes dropping to 1 ton.

45. The project has achieved certification and formalization, enabling accurate invoicing and direct product promotion. It has influenced gender equality and contributed to the development of technical and financial skills among the members. In addition, they hold the SERNANP seal, signifying their alliance with nature by working in state-protected areas, and have been awarded Latin American green awards as one of the top 500 projects.

46. Many of the project partners are single mothers who engage in other activities in the mornings until they establish a consistent customer base for their biofertilizer products.

47. The main barriers to selling more biofertilizers include the distance to potential markets, transportation challenges, and concerns about their temporary production location.

48. The installation sites of the biofertilizer projects pose a sustainability challenge due to the absence of a permanent agreement. Among the three biofertilizer projects, only one has secured local commitment, being part of the community. The others are situated on properties owned by the Peruvian State (at a national or regional level). Therefore, ensuring the continuity of these initiatives hinges on the commitment of the local government, which is politically unstable.

### *Aquaponics*

49. Aquaponic farming proves to be a resilient option to climate change, offering better control of fish consumption by considering the changing seasons in the sea and the impact of pollution.

50. Establishing a foothold in this market requires more time. There is no direct competition in hydroponic products, and the goal is to position the products in the market. Although the customer base is expanding, sales are currently focused on those who use organic products but not yet on hydroponic users.

51. Commercializing the product has been challenging in terms of distribution, as it competes with the traditional channel that offers lower prices. The traditional channel charges 30 cents per lettuce (0,081 USD), while the product is priced at 2.10 soles (0,56 USD).

52. Another significant challenge is related to infrastructure assurances. The initiative has not achieved the desired autonomy due to a lack of suitable physical space for activities. This situation compromises the sustainability of the initiative.

### *Gastronomy*

53. The "Yura" gastronomic initiative in El Ñuro is centered on sustainable, environmentally friendly, and artisanal fishing practices. A primary emphasis of the project is to ensure food safety and utilize proper preparation techniques.

54. Comprehensive training is offered to enhance the value of their products, with a specific focus on the use of hook and bait methods while adhering to fish size regulations.

55. The initiative actively engages tourists through innovative strategies, incorporating educational components. This involves teaching tourists how to prepare seafood to deepen their connection with the local culinary culture and promote interactive experiences.

56. The project plays a crucial role in supporting the livelihoods of local fishermen and serving as an income source for women, all while upholding environmental sustainability.

### *Handicrafts*

57. The "Perlas de Cabo Blanco" project in Piura actively involves women who previously worked sporadically in restaurants or service-related sectors. The project provides them with training, formalizes their association, establishes a website, and facilitates online sales.

58. The income from jewelry made from pearls not only strengthens household finances but also aids the educational pursuits of the women involved, especially younger women aspiring to advance their studies.

59. In the case of Association of the Women Artisans of Medio Mundo (AMARTEMM), revaluing crafted items and acknowledging the environment's importance is crucial, especially in the face of significant competition from plastic products.

60. The utilization of natural materials in crafting baskets not only enhances their value but also contributes to environmental conservation. The raw material comes from the plant fiber found in the wetlands (Albuferas de Nuevo Mundo). They collaborate with extractors, whether spouses or neighbors, who have permits from SERFOR (National Forestry and Wildlife Service). This wetland is a protected natural area under the supervision of the regional government, where they are authorized to extract a controlled amount of fiber.



Photo: Partner from AMARTEMM and the organic fiber collected - PMM visit

61. As individuals learn these weaving techniques, there is a growing initiative to pass on this knowledge. The training typically commences with basics like bracelets and keychains, and there is a proposal for more extensive workshops spanning six months to ensure proficiency.

62. To sustain the business, there's a need for a more secure space for dyeing processes, transitioning from wood to gas. Improved infrastructure and the active involvement of younger members in the association are deemed essential for the business to thrive.

63. Grandchildren have undergone training, and collaboration with an NGO has been established to ensure the continuity of these initiatives beyond the completion of the project.

64. Bandurria Artisan Enterprise encompasses three primary objectives. Firstly, on a social level, it strives to broaden the reach of women artisans into new markets. Secondly, it underscores conservation, leveraging the profits generated by the crafts. Thirdly, it prioritizes the tourism aspect, seeking to attract more people and customers.

65. For the involved artisans, the initiative has significantly enhanced their quality of life through the innovative nature of handmade products. They now earn higher profits at fair prices, marking a substantial improvement from when their products were sold at lower costs. The establishment of a brand has empowered them to command better prices for their creations.

66. Looking ahead, the initiative sees ample opportunities for business growth. It actively seeks and discovers new markets to involve more people in the process, emphasizing a commitment to transforming raw materials and consistently exploring avenues for business expansion and community involvement.

### **Main findings other components**

#### *Modern and efficient environmental monitoring and prediction system*

##### *The use of applications for the dissemination of information and Early Warning System*

67. The project contributed to the development of the MIMAR application, designed to sustain activities and maintain interest in the monitoring system. IMARPE has acquired the MIMAR app for the early warning system, addressing climate change phenomena such as red tides, sulfur plumes, and marine heatwaves.

68. The app functions as a comprehensive monitoring tool, gathering data on environmental, social, and economic aspects, including prices. The upcoming monitoring system needs increased involvement from beneficiary fishermen to systematically contribute data through the app.

69. Timely information feedback system from IMARPE is necessary, providing fishermen with systematized information. These conditions are crucial to ensuring the proper functionality of the app as a tool contributing to the early warning system.

70. The project has indirectly enriched IMARPE's functions in pilot areas. Collaboration with the NGO Prodestinos has streamlined the exchange of participatory monitoring experiences. The private sector has actively reinforced the participatory essence of the application.

71. Fishermen benefit from the utilization of technology and data sharing to monitor environmental conditions, including water temperatures and wind patterns. This approach helps them optimize daily decisions and efforts in their fishing activities.

72. The application is currently migrating from the Amazon host to the IMARPE host. This transition will facilitate monitoring various environmental and biological variables, including marine wildlife sightings, from an observational perspective. Individual observations and recorded information will play a vital role in data collection, contributing to the continuity and enhancement of long-term monitoring activities.

73. With support from the project, IMARPE has implemented the FAN Report (Harmful algal bloom technical report) in coordination with PRODUCE. They issue FAN and heat wave reports every 15 days, along with a seasonal report compiled every three months.

74. The reports focused on zones with increased fish concentrations, particularly “pejerrey” (silverside fish), and were distributed to fishermen to improve their understanding of fishing conditions. Nutrient samples, collected up to 100 meters depth, undergo analysis using a photometer, and the glider enables sampling at depths of 1000 meters.

75. The project facilitated exchanges with similar initiatives in organizations like FAO in Chile, fostering connections and experiences related to gender and fishing issues. Despite the pandemic limitations, virtual meetings have sustained these connections.

76. The project contributes to the acquisition of four gliders, improving oceanographic information availability and serving two important purposes: 1) developing and implementing a modern environmental monitoring system, and 2) enhancing the skills of specialized professionals from IMPARPE. Consequently, this initiative has facilitated a series of investigations and the development of local-scale prediction models, along with engaging the general public in monitoring experiences through a citizen science approach.

77. SERNAMP's climate impact and adaptation efforts concentrate on technical aspects, specifically authorizing tourist routes within protected natural areas. However, challenges arise due to the need for formalization, making obtaining authorization for tourist routes difficult without established structures. Nonetheless this experience has contributed to the formalization of associations.

78. Locally, the implementation of WhatsApp committees by MINAM stands out as a highly effective approach in managing natural resources and tourism. These committees, operating in an environment with infrequent in-person meetings involving large groups of fishermen and tourism industry individuals, have demonstrated dynamic coordination and collaboration. The utilization of WhatsApp has streamlined communication, offering alternative means for managing tourism and natural resources in these communities.

*Developing management policies, regulations, and measures that promote resilience to climate change.*

79. SERNANP collaborates with institutions such as IMARPE and the PRODUCE, focusing on social and environmental safeguards in protected areas to facilitate vessel registration and promote formalization in fishing.

80. MINAM aims to replicate successful local committee projects, emphasizing institutionalization at the municipal level for sustained achievements. Collaborative efforts with municipalities enhance the capacity of local communities.

81. Integrated coastal zone management is crucial for comprehensive conservation, both within and outside protected natural reserves. Inter-institutional collaboration and continued branding in marine areas ensure sustainability and effective conservation of protected natural areas.

82. The project achieved significant progress with the participation of different institutions. However, coordinating internal dynamics posed challenges. IMARPE played a primary

supervisory role, especially in the largest components (1 and 2) of the project, in technical and financial aspects, demanding the existing human resources for the project.

## V. BEST ADAPTATION PRACTICES RELATED TO IMPROVE MARINE ECOSYSTEM AND FISHERIES

### HUACHO

*Fishery sustainable practices*

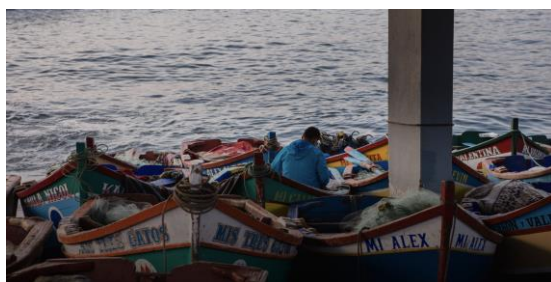


Photo: Carquín Fisherman - Profonanpe archives

83. The partners have boosted the family budget with a gillnet network featuring a QR tracing code, suitable for direct sales to higher-category restaurants in Callao and Lima. The virtual observer provides customers with visibility into the fish's origin and hygiene, particularly advantageous when certain species are scarce.

84. The organizational sustainability of the fishing network involves participating in workshops on marketing for small and medium-sized enterprises (MYPEs) in Carquín and Huacho. Formalization was necessary, given that fishing activities primarily occurred informally, and the new marketing method establishes formal chains between artisanal fishermen and end consumers.

85. Encouraging fishermen's formalization involves a committee ensuring compliance with regulations, like not extracting octopus less than 1 kg, snail less than 6 cm, and scallop. This, coupled with restocking activities, incentivizes biomass growth and supports sustainable practices. In addition, fishermen have embraced tourism, creating a website with Profonanpe's assistance, initially gaining recognition in their district and later expanding to the province.

86. Carquín and Huacho's success with gill nets in Peru prompts plans to patent and replicate the design nationwide, offering technical guidance from IMARPE. With a mesh size of 27-28mm, the shift from smaller nets has resulted in catching only larger fish. Determining mesh size factors in the first spawning of fish and selectivity, with ongoing studies to establish the regulatory net size.



Photo: Gill net innovation - Carquín - PMM visit

87. The scallops released into the sea as part of the project have successfully reproduced, showcasing positive ecological impacts. Notably, two resources showing increased abundance before and after El Niño are scallops and octopus.

*Tourism related activities*

88. Women play a significant role in promoting the association's products and services, utilizing social networks like Facebook. They engage in conservation education, focusing on topics such as scallop restocking, and actively participate in hook-and-line shore fishing.

89. Value addition with anchovy charquican (a dish) and dried anchovy is part of the anchovy's route, which includes a lunch featuring the product. Women actively participate in drying anchoveta in sacks as a cultural heritage.



Photo: Dried anchovy snack - PMM visit

90. Currently, the younger generation shows limited involvement in the association's activities. Nonetheless, among the partners are two university professors in Huacho, integral members of the technical team and 3 of 8 members are women.

91. The project elevates community awareness of climate change, nurturing an informed and resilient community. In response to declining fishing, it advocates for a healthy ecosystem through sustainable tourism. While fishermen embrace tourism, effective management is paramount to avoid issues, leading to collaboration with MINCETUR in identifying routes and challenges in informal coastal tourism.

92. MINCETUR's engagement aims to formalize and optimize coastal tourism, finding a balance between economic opportunities and environmental preservation. The pragmatic fishermen extend their commitment to this partnership, emphasizing sustainable livelihoods and the protection of natural resources.

93. Two associations in Piura are collaboratively linked, sharing information and supporting each other in the sale of biofertilizer products. When an order comes from Piura, information about a group of colleagues in Piura is shared to facilitate sales collaboration.

94. APROBIOSPECC holds an organic certificate from a laboratory, subjecting the product to biannual laboratory testing.



## MÁNCORA



Photo: women selecting fish to process, APROBION El Ñuro - PMM visit

95. The project has significantly supported women's economic empowerment by diversifying income sources, reducing dependency on traditional livelihoods like fishing. Beyond economic aspects, it facilitates a healthier work-life balance, allowing women to spend more time with their families.

96. The project has played a crucial role in the personal development of women, allowing them a space to express themselves even in challenging circumstances. It has provided an opportunity for women to develop soft and entrepreneurial skills in the pursuit of generating their own incomes.



Photo: fishermen explaining the use of an artisanal fishing raft, Cabo Blanco - PMM visit

97. The project maintains a commitment to adapting to climate change by implementing resilient practices. Consistent investment in ongoing training and development initiatives ensures the project's longevity and its positive impact on both the local community and the environment.

98. Embracing technology, such as utilizing QR codes for monitoring and implementing traceability systems, stands as a transformative measure to enhance the efficiency and transparency of fishing and tourism operations.

*Two years ago, we were hake fishermen, but due to climate change, everything changed. Now, we've adapted to a new project that we want to pursue, and we hope the investment we've received can continue to sustain us and our families. Fishing has decreased dramatically. We no longer want future generations to solely focus on fishing but also on beekeeping, something we believe is worth exploring. I am grateful for fishing; I am a fisherman. However, climate change has hit us hard, and this project has become a crucial source of employment.* Fisherman, Los Órganos - Piura.

99. The project benefits not only the family but also the community by creating employment and contributing to long-term economic well-being. Beekeeping is not just an economic activity; it is also essential for pollination and environmental preservation.

100. The narrative emphasizes a difference in climate change narratives within the fishing community, with men often being more vocal about these issues compared to women. This discrepancy extends beyond outward communication and may reflect deeper aspects of perception and engagement within the community.

101. Providing regular training and capacity-building opportunities, exemplified by commercialization workshops, becomes instrumental in ensuring that community members are continually updated on industry best practices, fostering skill development within the community.

102. In El Ñuro, the husband of one of the women involved works in the municipal government, facilitating the establishment of the biofertilizers site. Strengthening the role with the municipal government in conjunction with national institutions is necessary for sustained success.

103. Exploring opportunities for complementary financing, the regional government has funds for entrepreneurship within its budget. Profonanpe can assist in implementing the roadmap for projects, demonstrating their potential lifespan in the market. The challenge lies in proving that these enterprises have a lifespan exceeding two years, making them effective candidates for financing.

## VI. LESSONS LEARNED AND RECOMMENDATIONS

104. This section presents the lessons learned and recommendations emphasizing the significance of partnerships at both local and national levels, community engagement, and promoting gender inclusion through economic empowerment. Challenges such as coordination issues are recognized, providing valuable insights for future projects. The recommendations aim to improve project effectiveness and strive for long-term success.

### LESSONS LEARNED

#### *Government Engagement*

- **Local level**

105. **Operating at the regional and municipal level offered advantages**, facilitating improved community understanding and engagement with local authorities in smaller towns. Despite being a national-level project, local governments served as strategic allies due to their capacity to enhance the quality of life.

106. MINAM highlighted **the importance of replicating the success of local committees in disseminating projects** like biocompost in Huaral and Huacho. Institutionalizing these achievements at the municipal level and providing local resources were essential steps to ensure project sustainability. Collaboration with municipalities to implement packages locally and provide diverse equipment for farming and tourism activities strengthened the capacity of local communities.

- **National level**

107. Identifying government departments that were competent and required awareness of the results to advance activities related to fishing, tourism, or other sectors **aimed at reducing gaps associated with climate change was necessary at the national level**.

108. Entities **defining adaptation actions should maintain a coordinated dialogue, crucial for project effectiveness**. Profonanpe played a pivotal role in aligning the interests of IMARPE and artisanal fishing, proving beneficial. Also, support from MINAM facilitated the enhancement of public policy tools, aiding in strengthening project outcomes.

109. **Entities defining adaptation actions maintained a coordinated dialogue, crucial for project effectiveness**. Profonanpe played a pivotal role in aligning the interests of IMARPE and artisanal fishing, proving beneficial. Additionally, support from MINAM facilitated the enhancement of public policy tools, aiding in strengthening project outcomes.

110. The project included a **normative component, and the tools it generated played a crucial role in promoting sustainability**. The substantial regulatory impact emphasized the need for delivering a comprehensive normative package.

**Commented [MD2]:** Please clarify how you intended to group this section. The title refers to lessons learned and recommendations. Is the first part related only to lessons learned both at secretariat and project level and the second section refers to recommendations only?

**Commented [MOU3R2]:** I've reorganized and titled the subsections of lessons learned and recommendations. In some cases, I merged certain points to provide more specific insights and to highlight particular cases we encountered during the PMM.

111. During the project timeline, political instability in Peru escalated, leading to frequent changes at the national level. This significantly affected the project because, at the national level, **authorities in the involved ministries changed unpredictably, resulting in a loss of institutional knowledge** when key project individuals departed from the government. This disruption impacted operations and effectiveness, necessitating the restart of sensitization efforts by Profonampe and other institutions to engage the relevant offices with the project.

Commented [MOU4]: I think it's clearer now, but it's up to you to decide whether this factor is relevant here or not. It was mentioned at various points during the PMM, but primarily towards the end, in the last meeting in Cabo Blanco.

### *Stakeholder Collaboration*

112. **Involving non-political entities, such as local NGOs**, in supporting project objectives, scaling, and sustaining complex projects at the national level was crucial. The case of fishermen in Huacho proved beneficial, contributing to project stability and establishing alliances with strategic partners.

113. **Encouraging commitment of organizational leaders collaborating with NGOs, was important to ensure the sustainability of initiatives.** It wasn't just about providing material tools, like coolers and fishing gear for fisheries or pearls and silver for jewelry; it also involved creating an environment conducive to their use and expertise, particularly in providing valuable training within the tourism industry. The final transformation involved various actors working together.

114. Regarding early warning systems, **collaboration with communities has been sought through local radio stations and fisheries extension workers to disseminate information and train fishermen.** Despite clear procedures, working with communities presents additional challenges, such as the capacity for observation and response in contingency cases. It is necessary to work on the recognition of these alerts by scientific institutions such as IMARPE, Civil Defense, and other relevant actors.

115. The adaptation to the scarcity of fishing focused on leveraging a healthy ecosystem and promoting it as a valuable resource for tourism. Fishermen demonstrated receptiveness to this idea and adopted tourism as a viable alternative. However, addressing tourist growth sustainably was essential to avoid issues such as waste generation. **To identify routes and challenges in the numerous informal coastal tourism experiences, MINCETUR, a new actor in the project, was involved.**

116. IMARPE and SERNANP established an agreement to **provide special support in research** and promoted coordination of actions in protected marine areas through a framework condition. An example of this collaboration was the creation of a protected underwater marine area in the Nazca Ridge, where IMARPE played a fundamental role in the technical review.

117. The project successfully replenished natural scallop banks in Don Martin (a protected marine area), where the **collaboration between SERNAP and IMARPE was crucial. Administrative and technical issues related to the conservation objectives of the area needed to be addressed**, so coordinating these aspects was crucial for the success of the

project. It effectively facilitated workflow dynamics and avoided excessive administrative complications.

118. **Ensuring the sustainability of replenished natural scallop banks required involving other actors to complement specific responsibilities.** SERNAP considered the possibility of donating a boat for fishermen to monitor these protected areas, but this did not happen until the end of the project. Additionally, Profonanpe explored other financing opportunities and climate funds to scale up and implement additional strategies, while evaluating short-term innovation projects to continue progress in this direction.

119. Although IMARPE or PRODUCE did not originally have tourism as part of their competencies, **they established valuable partnerships with the community**, particularly in gastronomy and handicrafts, thereby diversifying the tourism offer beyond wildlife sightings.

120. The absence of a socioeconomic department within IMARPE created **challenges in monitoring economic information**, emphasizing the critical need for a socio-economic component to gather essential data. This highlighted the importance of clearly defining the project's scope.

121. The project underscored the significance of **gaining the trust of fishermen and recognizing their valuable knowledge as a contribution to scientific data collection.** Achieving this required time and a gradual approach between IMARPE and fishermen communities, which the project managed to some extent.

### *Capacity Building*

122. The **introduction of gliders as advanced equipment for contemporary environmental monitoring** provided Peruvian scientists from IMARPE with the opportunity to receive highly specialized training to use and interpret this equipment's data for comprehensive monitoring and assessment. Recognizing the pivotal role of scientific research in enhancing adaptation measures and efficiently managing climate change was crucial.

123. The **oceanographic platform has emerged as an invaluable resource for SERNANP in the management of Protected Natural Areas (ANP).** Its ability to monitor maritime activities essentially supports the management of these areas, especially in light of the ban on industrial fishing within the ANP. Additionally, it has proven useful for tourism operations and fishermen, providing relevant weather data. However, to maximize its utility, not only the availability of the platform is needed, but also the ability to capitalize on its use effectively.

124. Advocating for Early Warning Systems (EWS) involved monitoring, processing, and disseminating hazard information, **proving essential in alerting authorities and the public to enable timely responses**, thus mitigating or preventing loss of lives, property damage, and environmental harm.

125. **Establishing a social ecosystem for technology utilization became crucial for effective community monitoring.** Involving local actors in creating citizen awareness during the EWS implementation process fostered collaboration, addressing evolving needs and overcoming implementation obstacles.

*Social impacts of the project*

126. **Socioeconomic Considerations and Gender Inclusion:** Highlighting lessons learned regarding the socioeconomic dimensions of project activities, the importance of gender inclusion, and recognizing women's participation in traditionally male-dominated spaces.

127. **Engaging the community through the provision of non-monetary benefits,** such as certificates or training, aimed to empower community members by equipping them with valuable skills. These skills were intended to benefit them not only throughout the project but also in various aspects of their lives beyond it.

128. **The project's implementation involved various actors who gained important skills.** Emphasis was placed on the significance of adaptation, soft skills across different roles and functions, close collaboration with communities, flexibility, knowledge management, and considering social aspects in project implementation.

129. **Engaging local actors empowered them to contribute to research and benefit from project outcomes.** Their input informed decisions and actively shaped the project. Recognizing their role in effectively managing climate change emphasized the importance of their inclusion in project activities.

130. The project made **significant progress, highlighting the conversion of waste into biofertilizers, an initiative not initially considered.** Additionally, it actively involved women by promoting the creation of businesses with the support of Profonanpe.

131. **Partners viewed the project as a starting point and emphasized the importance of managing expectations as they progressed,** preparing for a phase where they would assume primary responsibility for sustaining the project, including managing resources, clients, equipment, and the team.

132. **The pandemic posed challenges to technical coordination, particularly in a project emphasizing the human dimension.** The addition of Field Facilitators in Huacho and Piura, incorporated before the pandemic, proved to be beneficial. Partners acknowledged and appreciated the dedication of local project professionals, aware of the context and specific needs. The project would not have continued during the COVID-19 pandemic period without these field personnel in 2020.

- **Women involvement on economic activities**

133. The partners utilized the "**empowered women**" narrative, reflecting a notable shift and evolution from previous generations. This messaging was likely influenced by various sources, including personal experiences and exposure to global narratives through the internet. This expression was used to denote their economic autonomy, independence in managing their work schedule, and the imperative to contribute to their family's economy as breadwinners.

134. Gender empowerment and sustainability were highlighted, **emphasizing the significance of women's participation in a predominantly male fishing space**. The project aimed to make visible the feminine components within the activity, recognizing women as economic actors and acknowledging the broader impact of their work beyond the individual level, extending to the family and community levels.

135. **The project marked a turning point in the lives of several female partners**. For some, it was their first experience with paid activities or in an organizational structure; contrasting with their usual solitary informal work. They emphasized the opportunity to contribute economically to their households during fish scarcity and the lessons learned from the collective experience of women's organization and network.

## RECOMMENDATIONS

### *Project Coordination and Governance Mechanisms*

136. **Disseminating regulatory tools among essential stakeholders** in the fishing industry is necessary to assist in regulating their activities, foster the establishment of sustainable fishing practices, and pursue economic autonomy among users and clients.
137. **Involving local authorities** in the project process will build alliances, educate about the impacts of climate change, and make the impact on local communities visible.
138. **Enhancing local governance means better coordination between municipalities and communities.** Providing tools like technical training and incentives for participation helps address local environmental issues effectively, starting at the grassroots level before seeking wider support and funding.
139. **Coordination with local authorities is important for the project's governance.** A clear delineation of implementation roles, project timelines, and responsibilities is essential for effective management and to consolidate the project's possible sustainability.
140. **Supporting local actors involving them in decision-making and building their capacity for long-term sustainability.** Governance mechanisms should actively engage them in the participation processes to gather contributions, moving beyond the role of mere recipients of resources to that of active participants.

### *Technical Expertise and Community Engagement*

141. The project should **yield more results concerning the maintenance and development** of technical expertise related to technological activities to continue improving fishing practices.
142. **Local solutions are essential for preparing for the future.** For example, fishermen dealing with challenges like El Niño can propose practical ideas, such as establishing a hatchery to protect breeding fish for six months and boost beach repopulation. These ideas should be carefully evaluated and could inspire other communities.
143. **Collaborations with academic institutions have proven to bolster the project's knowledge base and improve implementation,** as seen in cases such as Huacho and Don Martín tourism. This includes disciplines such as tourism, ocean scientific research, or the oyster industry. Strengthening these collaborations will not only enhance the project's implementation but also foster innovation, particularly through the engagement of doctoral and undergraduate students.
144. Using the **scientific equipment within the project** can engage engineering or other discipline students, **enhancing scalability and expanding the project's reach.** This collaboration offers an opportunity to involve youth and foster innovation. Further collaboration



with universities, can significantly contribute to the project's success and sustainability by expanding capacity building in the use of technology and data.

*Sustainability and Continuity Planning:*

145. The AFB Secretariat should consider undertaking a PMM when the project is at mid-term of implementation. This adjustment enables implemented institutions to gain insights, and address emerging considerations.

146. Projects need to **integrate spaces or mechanisms facilitating sustainability** beyond project completion. It's important to establish plans for autonomous continuation from the project's inception to ensure continuous and sustained activity. For example:

I. Advocacy for the adoption of biofertilizers as part of the agricultural input package. It's imperative to ensure these practices extend beyond Profonanpe's scope and receive continuous support for institutionalization. E.g., establishing agreements with MINAGRI (Ministry of Agriculture) to further the national promotion of biofertilizer products

II. Initiating partnerships with agriculture-related companies is suggested to develop projects that enhance the initiative's expansion. These collaborations could involve corporate social responsibility programs or other relevant areas.

III. Advocate for creating an alliance between the local government, companies, and product producers to enhance the effective supply of goods and devise marketing strategies to generate product demand and formulating competitive business plans. PRODUCE intervention is essential in this regard, focusing on plans that boost product demand and market competitiveness. Strategies should focus on disseminating project information to universities and local project overseers to establish effective collaboration networks.

147. Profonanpe faces the challenge of **aligning pilot projects with public policies**, integrating the experiences gained into various entities and programs. It's crucial to replicate the successful progress achieved at the pilot level in the long term. This replication involves engaging new stakeholders and expanding initiatives to encompass different regions, ensuring widespread impact and sustainability.

## Annex I – Agenda for the Portfolio Monitoring Mission

### Day 1 - Monday 16, October 2023

<b>Location: Lima – day 1</b>
<b>Opening of the mission</b>
High level meeting with authorities
Ministry of Environment – MINAM
Ministry of Production – PRODUCE
Peruvian Sea Institute/Instituto del Mar Peruano – IMARPE
Profonanpe
<b>Bilateral meeting</b>
Designated officials from MINAM – General director of Climate Change
<b>Bilateral meeting</b>
Ministry of Production – PRODUCE
<b>Bilateral meeting</b>
Peruvian Sea Institute/Instituto del Mar Peruano – IMARPE
<b>End of day 1</b>

### Day 2 - Tuesday 17, October, 2023

<b>Location: Piloting area of Huacho – day 2</b>
<b>Trip to Huacho ( 3 hours, road)</b>
<b>Start of activities</b>
Meeting with fishermen from Carquin: the use of fishing gillnets as a fishing sustainable art
<b>Visit to biofertilizers site</b>
Meeting with women’s association APROBIOSPECC: biofertilizers’ production: gender, improving means of subsistence and circular fishing economy
<b>Visit to the sea cove Vegueta</b>
Meeting with tourism entrepreneurs from Don Martin Tours: Tourism opportunities in the coastal communities
Demographic regrowth activities as strategies to recover natural banks
<b>End of day 2</b>

### Day 3 - Wednesday, October 18, de 2023

<b>Location: Piloting area of Huacho – day 3</b>
<b>First activity</b>
Meeting with fishermen entrepreneurs from EPAPROMAR: “the Anchovies circuit”.
<b>Visit to aquaponic site</b>
Meeting with Acuaponía, women’s association, about the aquaponic module (I7,MARPE)

<b>Visit to the entrepreneurship Women Artisans of Nuevo Mundo (Artisans)</b>
Meeting with tourism entrepreneurs and production process demonstration
<b>Visit to the entrepreneurship Bandurria Artesanas (Artisans)</b>
Meeting with tourism entrepreneurs
<b>End of day 3 – Return to Lima</b>

**Day 4 - Thursday 19, October 2023**

<b>Location: Máncora’s piloting area – day 4</b>
<b>Flight to Talara - transportation to Máncora</b>
<b>First activity</b>
Meeting with fishermen from Los Órganos: use of technology to improve the commercialization of products and traceability
<b>Visit to the Biofertilizers site</b>
Meeting with women’s association APROBION Los Órganos: Production of biofertilizers: gender, improvements of means of circular economy in the fishing sector.
Visit to the gastronomic entrepreneurship in Yura: El Ñuro
<b>Visit to the seashore: El Ñuro</b>
Meeting with women’s association APROBION Los Órganos: Production of biofertilizers: gender, improvements of means of circular economy in the fishing sector.
<b>End of day 4</b>

**Day 5 - Friday 20, October, 2023**

<b>Location: Máncora’s piloting area – day 5</b>
<b>First activity</b>
Meeting with fishermen from the “Hijos de Viento” entrepreneurship: “we are what the wind left for us”, boat building and sailboat trip
<b>Traceability experiences</b>
Meeting with fishermen about the use of technology to improve commercialization
<b>Visits to the Perlas de Cabo Blanco entrepreneurship</b>
Meeting with women’s association from Perlas de Cabo Blanco: “Artisanal Jewelry from and for the Peruvians”
<b>Final day activity – Return trip to Lima</b>
<b>FA and Profonanpe team members meeting: debriefing</b>
<b>Closure of day 5 – Return to Lima</b>