# Project Administration Manual

Project Number: 55020-001
November 2022

# Indonesia: Infrastructure Improvement for Shrimp Aquaculture Project

## ABBREVATIONS

| | | |
|---|---|---|
| ADB | – | Asian Development Bank |
| BAPPENAS | – | *Badan Perencanaan Pembangunan Nasional* (Ministry of National Development Planning) |
| CDF | – | community development framework |
| CPMU | – | central project management unit |
| DDR | – | due diligence report |
| DGA | – | Directorate General of Aquaculture |
| DIPA | – | *Daftar Isian Pelaksanaan Anggaran* (national budget) |
| DMF | – | design and monitoring framework |
| EARF | – | environmental assessment and review framework |
| EMP | – | environmental management plan |
| GRM | – | grievance redness mechanism |
| IEE | – | initial environmental examination |
| INDOGAP | – | Indonesian Good Aquaculture Practices |
| MMAF | – | Ministry of Marine Affairs and Fisheries |
| MOF | – | Ministry of Finance |
| OCB | – | open competitive bidding |
| PAM | – | project administration manual |
| PIU | – | project implementation unit |
| PMC | – | project management consultant |
| RRP | – | report and recommendation of the President to the Board |
| SADP | – | sustainable aquaculture development plan |
| SOE | – | statement of expenditures |
| SPS | – | ADB's Safeguard Policy Statement 2009 |
| STELINA | – | *sistem telusur dan logistik ikan nasional* (national fish traceability and logistic system) |

**CONTENTS**

**Project Administration Manual Purpose and Process**

The project administration manual (PAM) describes the essential administrative and management requirements to implement the project on time, within budget, and in accordance with the policies and procedures of the government and Asian Development Bank (ADB). The PAM should include references to all available templates and instructions either through linkages to relevant URLs or directly incorporated in the PAM.

The executing and implementing agencies are wholly responsible for the implementation of ADB-financed projects, as agreed jointly between the borrower and ADB, and in accordance with the policies and procedures of the government and ADB. ADB staff is responsible for supporting implementation including compliance by executing and implementing agencies of their obligations and responsibilities for project implementation in accordance with ADB's policies and procedures.

At loan negotiations, the borrower and ADB shall agree to the PAM and ensure consistency with the loan agreement. Such agreement shall be reflected in the minutes of the loan negotiations. In the event of any discrepancy or contradiction between the PAM and loan agreement, the provisions of the loan agreement shall prevail.

After ADB Board approval of the project's report and recommendations of the President (RRP), changes in implementation arrangements are subject to agreement and approval pursuant to relevant government and ADB administrative procedures (including the Project Administration Instructions) and upon such approval, they will be subsequently incorporated in the PAM.

# I. PROJECT DESCRIPTION

1. The project will help the Ministry of Marine Affairs and Fisheries (MMAF) to introduce sustainable shrimp aquaculture and to improve transparency and traceability processes in order to increase productivity, quality, profitability, and environment sustainability of shrimp farming by smallholders. The project will deliver an integrated investment that addresses inputs, production, and post-harvest processes through infrastructure, capacity support, and value chain strengthening in selected locations across Bali, Banten, Central Java, East Java, Lampung, Nangro Aceh Darusalam, and South Sulawesi provinces. The project will directly benefit 5,210 smallholder farmers and about 35,000 smallholder farmers will benefit from capacity building programs on sustainable aquaculture.

## A. Impact and Outcome

2. The project is aligned with the following impact: contribution of the fisheries sector to the national economy increased.[1] It will have the following outcome: productivity, profitability, and environmental sustainability of shrimp aquaculture increased.[2]

## B. Outputs

3. **Output 1: Quality and sustainability of inputs for shrimp production increased.** The project will construct a modern broodstock center and two multiplication centers to provide small-scale hatcheries with access to affordable and quality whiteleg shrimp broodstock. The project will also facilitate the transfer of knowledge for producing high-quality genetic shrimp fry from the Oceanic Institute of Hawaii to MMAF to reduce reliance on imported broodstock. To control the quality of broodstock and juveniles, and the water quality in production facilities, the project will finance the construction and equipment of climate- and disaster-resilient laboratories under MMAF. All facilities will incorporate gender-responsive and inclusive features.[3] The project will train MMAF staff in operating these facilities. This output will also help small and medium-sized seed suppliers to comply with broodstock breeding protocols, good hatchery practices, and biosecurity and environmental monitoring procedures to increase the quality of broodstock. It will strengthen farmers' capacity to produce their own feed in accordance with the national fish feed self-sufficiency program, *Gerakan Pakan Mandiri*, to reduce reliance on imported feed.[4]

4. **Output 2: Sustainable and climate adaptive aquaculture infrastructure and services developed.** The project will support the establishment and strengthening of farmers' groups, which will enable smallholders, including women farmers, to consolidate their production facilities using a cluster approach. Local facilitators will help them to prepare sustainable aquaculture development plans (SADPs), which will form the basis for investment in their respective clusters. The SADPs will also help farmers to access credits and explore partnerships with the private sector. The project will upgrade farmers' ponds and selected MMAF production facilities as demonstration sites using a sustainable and climate adaptive aquaculture model, which aims to increase production while minimizing its impact on the ecosystem.[5] For each cluster, the project will rehabilitate or upgrade associated infrastructure (canals, production roads, inlet reservoirs,

---

[1] Government of Indonesia, Ministry of National Development Planning (BAPPENAS). 2020. *Rencana Pembangunan Jangka Menengah Nasional, 2020–2024* (National Medium-Term Development Plan). Jakarta.

[2] The preliminary design and monitoring framework is in Appendix 1.

[3] These include lactation rooms, separate male and female toilets, and separate male and female prayer rooms.

[4] On 8 November 2021, the Global Environment Facility approved a project concept for a regional grant amounting to $4.4 million, of which around $3.2 million will be allocated to Indonesia to complement the project activities by engaging feed suppliers to diversify feed raw material and improving shrimp feed tracking.

[5] MMAF technical operating units will contract farmers groups using simple engineering design to upgrade their ponds.

and wastewater treatment facilities,) and purchase equipment to support semi-intensive aquaculture production for selected clusters.[6] Farmers will plant and maintain mangrove trees in inlet and outlet canals and along the shoreline to help improve water quality and reduce soil erosion. This output will also support MMAF with establishing O&M guidelines and developing an asset management information system for infrastructure lifecycle management. The project will strengthen the technical capacity of farmers, including women farmers, to adhere to the INDOGAP guidelines for environmentally and economically sustainable shrimp production.

5. **Output 3: Shrimp aquaculture supply chain strengthened.** The project will build the capacity of female and male farmers for food safety, handling and cold chain management, processing, and marketing of shrimps. To improve transparency, the project will facilitate the registration of broodstock and feed suppliers, farms, aggregators, and processors in the INDOGAP system and the tracing of transactions in MMAF's STELINA. In support of a harmonized regulatory framework, the project will assist MMAF in preparing quality standards, and in rationalizing regulations and incentive systems for sustainable aquaculture.

6. **Approach.** The project theory of change and approach is presented in Appendix 2. The relevant technical guidelines are presented in Appendix 3. The project will apply a sector approach in selecting subprojects that are outside MMAF land.[7] To be financed under the project, these subprojects need to comply with the applicable selection criteria described in Section III. D *Selection and Approval of Subprojects*. For each subproject, a SADP will be prepared following the template provided in Appendix 4.

[6] The project will promote fair water allocation among water users. Equipment includes wastewater equipment, water pumps, paddle wheels, growers and finishers for shrimp feed, spiral and plastic hose, diluted oxygen and pH meters, and refractor salinometers.

[7] Including canals, water treatment, and production facilities outside MMAF land. A subproject is defined as a cluster of farmers comprised within a hydraulic unit.

# II. IMPLEMENTATION PLANS

## A. Project Readiness Activities

**Table 1: Schedule of Project Readiness Activities**

| Indicative Activities | 2022 | | | | 2023 | | Responsible Party |
|---|---|---|---|---|---|---|---|
| | Aug | Sep | Oct | Nov | Dec | Jan | |
| Advance contracting actions | X | X | X | X | X | | MMAF, ADB |
| Government budget inclusion | X | X | X | | | | MMAF, MOF |
| Establish project implementation arrangements | | | X | | | | MMAF, BAPPENAS (steering committee) |
| Loan Negotiations | | | X | | | | ADB, MOF |
| ADB Board approval | | | | | X | | ADB |
| Loan signing | | | | | X | | ADB, MOF |
| Government legal opinion provided | | | | | | X | MOLHR |
| Loan effectiveness | | | | | | X | ADB, MOF |

ADB = Asian Development Bank, BAPPENAS = Badan Perencanaan Pembangunan Nasional (National Development Planning Ministry), MMAF= Ministry of Marine Affairs and Fisheries, MOF = Ministry of Finance, MOLHR = Ministry of Law and Human Rights.
Source: Asian Development Bank.

## B. Overall Project Implementation Plan

7. The project detailed implementation plan is in Appendix 1.

# III. PROJECT MANAGEMENT ARRANGEMENTS

## A. Project Implementation Organizations

**Table 2: Roles and Responsibilities of Implementation Organizations**

| Project Implementation Organizations | Management Roles and Responsibilities |
|---|---|
| **National Steering Committee** | Chaired by National Development Planning Agency (BAPPENAS) with members from the Ministry of Finance, Ministry of Marine Affairs and Fisheries, Ministry of Trade, Ministry of Village, Development of Disadvantaged Regions and Transmigration<br>Oversee progress and provide guidance on the project implementation<br>Monitor and evaluate the overall project performance and outcomes<br>Review and endorse annual work plans |
| **Executing Agency**<br>Ministry of Marine Affairs and Fisheries through the Directorate General of Aquaculture (DGA) as the Central Project Management Unit (CPMU) with representatives from<br>Secretariat of the Directorate General for Aquaculture<br>Directorate for Regional Development Aquaculture and Fish Health<br>Directorate for Seeds | Overall responsible for implementation of the project and the subprojects<br>Establish a CPMU to consolidate activities and reporting from project implementing units (PIUs)<br>Supported by a secretariat consisting of representatives from concerned Directorates. The CPMU secretariat will be headed by the Secretary of the DGA and staffed with financial management, monitoring and reporting, procurement, social and environmental safeguards, gender, and technical personnel<br>Ensure compliance with loan covenants<br>Recruit and supervise project management consultant |

| Project Implementation Organizations | Management Roles and Responsibilities |
|---|---|
| Directorate for Fish Feed and Medicine | Maintain project accounts, monitor financial and physical progress, and report such progress to the Asian Development Bank (ADB)<br>Prepare withdrawal applications (WAs) including retention of supporting documents and submit the WAs (through MOF) to ADB.<br>Lead and coordinate activities related to financial management, implement financial management action plan, accounting, financial reporting and annual audit<br>Consolidate and submit quarterly, semiannual and annual reports, including safeguards and acceptable audited annual project financial statements to ADB<br>Approve subprojects according to subproject selection criteria<br>Provide operational support for project activities<br>Coordinate with the government and partner agencies for successful implementation of the project<br>Prepare annual contract awards and disbursement projections, and request budgetary allocations for counterpart funds<br>Monitor implementation of gender equality and social inclusion action plan |
| **Implementing Agencies**<br>1. Directorate General of Aquaculture<br>2. Seven Technical Operating Units (Unit Pelaksana Teknis or UPT) in MMAF Technical Operating Units and Brackishwater Aquaculture Development Centers | Establish PIUs headed by a project director and staffed with social and environmental safeguards, gender, procurement, financial management and technical personnel<br>Responsible for implementation of all subprojects under each implementing agency's purview<br>Recruit consultant for all subprojects under its purview<br>Review detailed engineering designs for government and farmers infrastructure<br>Recruit and supervise regional technical consultants<br>Prepare safeguards planning documents, implement environmental and social safeguards plans, and monitor safeguards-related activities for ADB and government requirements.<br>Undertake day-to-day implementation activities<br>Manage the procurement process (prepare bidding documents, manage bidding process, prepare bid evaluation report, submit required documents to ADB for its review)<br>Do contract management of works and goods procured<br>Implement procurement, financial management, safeguards activities and gender action plan<br>Manage financial management including implement financial management action plan, preparing budget, annual projections, process invoices and withdrawal applications etc.<br>Provide timely inputs to the quarterly, semi-annual reports, including safeguards and financial information.<br>Maintain separate accounts and financial reporting for the project to timely support consolidation of project financial statements and annual audits of such statements. |
| **Ministry of Finance** | Establish and manage advance account on behalf of the executing agency –<br>Allocate and timely release counterpart funds<br>Timely endorse WAs submitted by the executing agency<br>Timely approve annual budget DIPA<br>Communicate with ADB for any amendments in the reallocation of the loan amount. |
| **Asian Development Bank** | Undertake regular project reviews and facilitate implementation of the project, including compliance by the executing and implementation agencies to obligations and responsibilities |

Source: Asian Development Bank.

## B. Key Persons Involved in Implementation

### Table 3: Key Persons Involved in Project Implementation

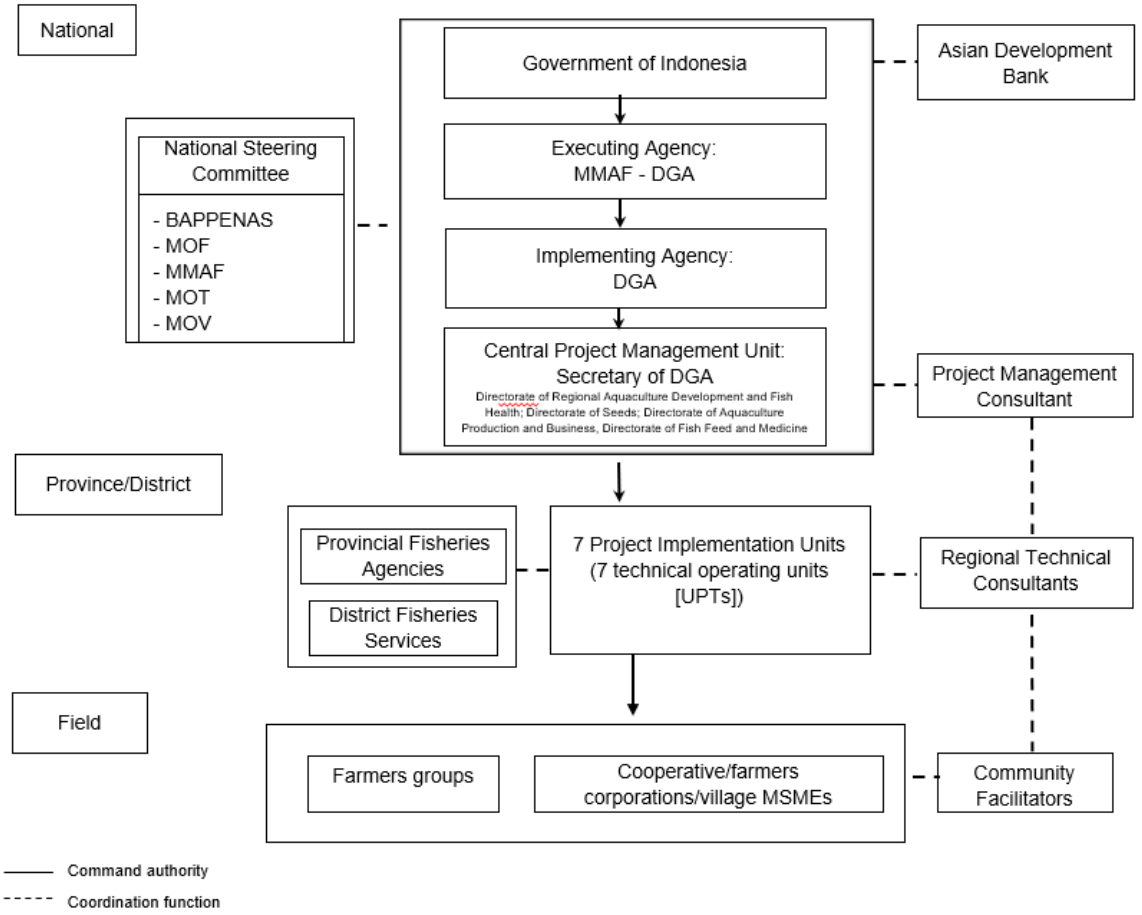
| | | | |
|---|---|---|---|
| **Executing Agency** | | | |
| Directorate General of Aquaculture (DGA) Ministry of Marine Affairs and Fisheries | Officer's Name | : | Mr. Tb. Haeru Rahayu |
| | Position | : | Director General for Aquaculture |
| | Office Address | : | Jl. Medan Merdeka Timur no.16.Gedung Mina Bahari IV, Lantai 5,6,7,8. Jakarta Pusat 10110 |
| | Email address | : | humas.djpb@kkp.go.id |
| | Telephone No. | : | +21 3519070 |
| Secretariat of the Directorate General for Aquaculture | Officer's Name | | Gemi Triastutik |
| | Position | : | Secretary of the Directorate General for Aquaculture |
| | Office Address | : | Jl. Medan Merdeka Timur no.16.Gedung Mina Bahari IV, Lantai 5,6,7,8. Jakarta Pusat 10110 |
| | Email address | : | humas.djpb@kkp.go.id |
| | Telephone No. | : | +21 3519070 |
| Directorate of Regional Aquaculture Development and Fish Health | Officer's Name | : | Mr. Tinggal Hermawan |
| | Position | : | Director forRegional Aquaculture Development and Fish Health |
| | Office Address | : | Jl. Medan Merdeka Timur no.16.Gedung Mina Bahari IV, Lantai 5,6,7,8. Jakarta Pusat 10110 |
| | Email address | : | |
| | Telephone No. | : | |
| Directorate for Fish Feed and Medicine | Officer's Name | : | Mr. Ujang Komaruddin Asdani Kartamiharja |
| | Position | : | Director Fish Feed and Medicine |
| | Office Address | : | Jl. Medan Merdeka Timur no. 16 Gedung Mina Bahari IV, Lantai 5,6,7,8. Jakarta Pusat 10110 |
| | Email address | : | |
| | Telephone No. | : | |
| Directorate for Seeds | Officer's Name | : | Mr. Nono Hartanto |
| | Position | : | Director for Seeds |
| | Office Address | : | Jl. Medan Merdeka Timur no.16.Gedung Mina Bahari IV, Lantai 5,6,7,8. Jakarta Pusat 10110 |
| | Email address | : | |
| | Telephone No. | | |
| **Implementing Agencies** | | | |
| Main Center for Brackishwater Aquaculture Jepara-Central Java | Officer's Name | : | Mr. Supito |
| | Position | | Head Office of Main Center for Brackishwater Aquaculture Jepara |
| | Office Address | : | Jl. Cik Lanang, RW. IV, Kelurahan Bulu, Kecamatan Jepara, Kabupaten Jepara 59418 |
| | Email address | : | bbpbapjpr@gmail.com |
| | Telephone No. | : | 0291-591125 |
| Brackishwater Aquaculture Development Center Ujung Batee – Aceh | Officer's Name | : | Mr. Manijo |
| | Position | : | Head Office of Brackishwater Aquaculture Development Center Ujung Batee |
| | Office Address | : | Jl. Laksamana Malahayati Km 16, Masjid Raya, Ujung Batee, Kabupaten Aceh Besar, Aceh 23381 |
| | Email address | : | |
| | Telephone No. | : | 0816-343300 |

| | | | |
|---|---|---|---|
| Brackishwater Aquaculture Development Center Situbondo – East Java | Officer's Name | : | Mr. Boyun Handoyo |
| | Position | : | Head Officeof Brackishwater Aquaculture Development Center Situbondo |
| | Office Address | : | Jl. Raya Pecaron, Kec. Panarukan, Klatakan, Kab. Situbondo, Jawa Timur 68351 |
| | Email address | : | |
| | Telephone No. | : | 0338-673328 |
| Brackishwater Aquaculture Development Center Takalar – South Sulawesi | Officer's Name | : | Mr. Nur Mucflich Junianto |
| | Position | : | Head Office of Brackishwater Aquaculture Development Center Takalar |
| | Office Address | : | Bodia, Galesong, Kabupaten Takalar, South Sulawesi 92255 |
| | Email address | : | bbaptakalar@yahoo.com |
| | Telephone No. | : | 0418-2312927 |
| Main Center for Mariculture Lampung | Officer's Name | : | Mr. Mulyanto |
| | Position | : | Head Office of Main Center for Mariculture |
| | Office Address | : | Jl. Yos Sudarso, Hanura, Kec. Teluk Pandan, Kabupaten Pesawaran – Lampung 35450 |
| | Email address | : | |
| | Telephone No. | : | (0721) 4001379 |
| National Broodstock Center for Shrmp and Mollusk Karangasem-Bali | Officer's Name | : | Mr. Wendy Tri Pabowo |
| | Position | : | Head Office of National Broodstock Center for Shrimp and Mollusk |
| | Office Address | : | Jl Raya Bugbug, Manggis Sengkidu, Kec. Gerogak, Kab. Karangasem, Prop Bali80811 |
| | Email address | : | bpiu2k@gmail.com |
| | Telephone No. | : | 0363-2787803 |
| Center for Fish Disease and Environment Serang – Banten | Officer's Name | : | Mr. Toha Tusihadi |
| | Position | : | Head Office of Center for Fish Disease and Environment Assessment |
| | Office Address | : | Jl. Raya Carita, Umbul Tanjung, Cinangka, Serang – Banten 42167 |
| | Email address | : | |
| | Telephone No. | : | (0254) 650431 |
| **Asian Development Bank** | Officer's Name | : | Mr. Jiro Tominaga |
| | Position | : | Country Director, Indonesia Resident Mission |
| | Office Address | : | The Plaza Office Tower, 11th Floor, Jl. MH Thamrin 28-30, Central Jakarta, Indonesia 10350 |
| | Email address | : | |
| | Telephone No. | : | +62 21 29927388 |
| | Officer's Name | : | Mr. Jiangfeng Zhang |
| | Position | : | Director, Environment, Natural Resources and Agriculture Division |
| | Office Address | : | 6 ADB Avenue, Mandaluyong City 1550 Metro Manila, Philippines |
| | Email address | : | jzhang@adb.org |
| | Telephone No. | : | +63 2 632 6379 |
| Implementation Leader | Officer's Name | : | Mr. Eric Quincieu |
| | Position | : | Principal Water Resources Specialist |
| | Office Address | : | 6 ADB Avenue, Mandaluyong City 1550 Metro Manila, Philippines |
| | Email address | : | equincieu@adb.org |
| | Telephone No. | : | +63 2 86324444 |

Source: Asian Development Bank.

## C. Project Organization Structure

**Figure 1: Project Organization Structure**




BAPPENAS = *Badan Perencanaan Pembangunan Nasional* (Ministry of National Development Planning); DGA =Directorate General of Aquaculture; MMAF = Ministry of Marine Affairs and Fisheries; MOF = Ministry of Finance, MOT = Ministry of Trade; MOV = Ministry of Village, Development of Disadvantaged Regions and Transmigration; MSME = micro, small and medium enterprise.
Source: Asian Development Bank.

## D. Selection and Approval of Subprojects

8. The central project management unit (CPMU) will identify, evaluate, and select upgrading of production facilities (ponds, canals, and water treatment facilities) subprojects in the farmers' land based on the following criteria:

### 1. Criteria 1: General

9. Consistent with DGA's regulation 31/PER/DJPB/2021 on assistance for shrimp aquaculture cluster development, famers are eligible to receive support to improve their production facilities if the following criteria are met:

(i) a Candidate subproject is not assessed as category A or B under SPS for resettlement, and not assessed as category A for environmental and indigenous people impact, and does not include activity described in ADB's Prohibited Investment Activities List (Appendix 5 of the SPS)
(ii) Farmers or farmers groups have expressed interest in participating in the project and are committed to various project activities, both physical and non-physical components (e.g., participating in various trainings).
(iii) Farmers are smallholders practicing traditional shrimp aquaculture and are willing to work in groups through a legal entity.
(iv) Farmers commit to mutually agreed terms and conditions through an open, fair, voluntary, and aspirational process.
(v) Farmers are part of a homogeneous water management unit (i.e., tertiary block) suitable for shrimp farming activities, preferably a minimum area of 10 hectares (ha).
(vi) Farmers agreed that their land or part of their land is used for project facilities (e.g., reservoirs, irrigation canals, wastewater treatment pond, electricity poles, and so on) without transfer of land ownerships.
(vii) The cluster is located in an area in accordance with the provincial spatial plans.
(viii) The cluster land plots have clear ownership and without the presence of informal settler/user.
(ix) The cluster has access to road, irrigation canals, water, and are free from floods.

10. Subprojects will conform with ADB's Safeguards Policy Statement (SPS) 2009 with respect to social and environmental considerations. Subprojects with significant environmental and involuntary resettlement impact (category A), or with significant impacts on indigenous peoples or customary communities (category A), will be excluded. Subprojects with activities described in ADB's Prohibited Investment Activities List (Appendix 5 of ADB's SPS 2009) will also be excluded.

### 2. Criteria 2: Environment

11. The following subprojects are not eligible for funding under the project:

(i) Subprojects classified as Category A per ADB's SPS 2009,
(ii) Subprojects located in or with foreseeable adverse impacts on any legally protected area or environmentally sensitive coastal wetlands,[8] or

[8] Protected Areas as defined in Annex III of Minister of Environment Regulation No. 5/2012 on Types of Business Plans and/or Activities Requiring *Analisa Mengenai Dampak Lingkungan* (AMDAL or environmental impact analysis).

(iii) Subprojects that fall in part or in whole within an area supporting high biodiversity value.[9]

12. Subprojects should be screened and assessed based on procedures defined in the project's environmental assessment and review framework (EARF).

### 3. Criteria 3: Social Safeguards, Involuntary Resettlement and Indigenous People or Customary Communities

13. Involuntary resettlement is considered when the affected persons have no right to refuse the land acquisition by the government that results in their displacement. This occurs when land is acquired through (i) expropriation by invoking the eminent domain power of the state, or (ii) land is acquired through negotiated settlement when the pricing is negotiated in a process where expropriation will be the consequence of a failure in the negotiation.

14. Subprojects with involuntary land acquisition and resettlement impacts classified as Category A or B for involuntary resettlement will not be financed under the project. Minor land provision as required for project activities on farmers' land will use participatory community development approach. Detailed procedures of the approach and subproject selection criteria are described in the community development framework (CDF) prepared for the project. CDF implementation will be embedded in the Sustainable Aquaculture Development Plan (SADP) to be prepared for each subproject site.

15. Subproject activities that will cause significant impacts (category A) to indigenous people (IP) living in the project areas will also not be financed under the project. The category A for IP impacts defined when subproject activities caused adverse impacts (directly or indirectly) on the dignity, human rights, livelihood systems, or culture of the IP, or affects the territories or natural or cultural resources that IP own, use, occupy, or claim as their ancestral domain. Only subproject activities that will have positive impacts to the IP communities, thus categorized as B for IP impacts, allow their activities to proceed. The positive impacts of project activities will be based on the social impact assessment results to be done in each subproject site. Screening and assessment procedures for IP issues of the project are described in the Indigenous People Planning Framework (IPPF) prepared for the project. Specific documents to ensure positive impacts to IP communities will also be developed.

16. All subprojects activities should be screened and assessed based on procedures defined in the community development framework (CDF) and indigenous people planning framework (IPPF). Social impact assessment (SIA) will also be conducted in each subproject site and its results will be included in the subproject development plan or SADP.

### 4. Criteria 4: Economic Viability and Financial Sustainability

17. The design of the subproject will ensure the adoption of the least-cost approach, both in respect of capital, as well as operation and maintenance (O&M) costs, keeping in view achievement of the project objective(s). Financial analysis to ensure subprojects viability and/or sustainability will be conducted.

18. The subproject needs to register an economic internal rate of return (EIRR) in excess of 9% with economic benefits quantified based on reliable data. The first subproject in each of the

[9] Key Biodiversity Areas as defined in the World Database of Key Biodiversity Areas.

locations will be subject to prior review and approval by ADB. Subsequent subprojects shall be sent to ADB for information only.

19. Subproject safeguards categorizations will be sent to ADB prior to subproject detailed engineering design. Subproject safeguard documents will need prior approval by ADB, including community development plan, indigenous people plan, resettlement due diligence report completed with corrective action plan (DDR – corrective action plan), and initial environmental examinations (IEE) with environmental management plans (EMP), as needed. Safeguards documents will need to be consistent with the EARF, the CDF and the IPPF, ADB's SPS 2009, and government laws and regulations.

**1. Procedures**

20. Each subproject will be prepared and processed in accordance with the following procedures:

(i) SADP for all farmers subprojects, will be prepared including cost estimate. The executing agency will also prepare and categorize for (a) involuntary resettlement, (b) indigenous peoples, and (c) environment, and send all categorization results to ADB.

(ii) The executing agency through the CPMU will appraise all subprojects following the selection criteria, together with the required attachments, i.e., safeguards documents and submit screening forms and safeguards documents to ADB for approval. Safeguards documents will be disclosed on ADB's website and the website of the executing agency.

(iii) ADB will review the first three SADPs under each of the seven UPTs with the required attachments. If ADB finds that a proposed subproject does not satisfy the selection criteria and/or agreed procedures, ADB will advise the executing agency either (a) to modify the subproject proposal in a manner that will make it eligible for approval; or (b) that the subproject be rejected. ADB will conduct post-facto review for remaining subprojects on a sample basis.

# IV. COSTS AND FINANCING

21. The project is estimated to cost ¥15,606,865,425.14, of which ¥13,940,700,000.00 will be financed by ADB's ordinary capital resources (Appendix 6). The government will contribute ¥1,666,165,425.14 as counterpart contribution to finance taxes and duties, financing charges during implementation, and in-kind contribution of staff and office.

## A. Cost Estimates Preparation and Revisions

22. The cost estimate was prepared jointly by ADB and the executing agency using 2022 prices. The cost estimate will be revised at the loan midterm review stage.

## B. Key Assumptions

23. The following key assumptions underpin the cost estimates and financing plan:

Exchange rate: ¥149.90 = $1.00 (as of 24 October 2022)
Price contingencies based on expected cumulative inflation over the implementation period are as follows:

**Table 4: Escalation Rates for Price Contingency Calculation**

| Item | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | Average |
|---|---|---|---|---|---|---|---|
| Foreign rate of price inflation (JPY) | 1.0% | 0.8% | 0.9% | 1.0% | 1.0% | 1.0% | 1.0% |
| Domestic rate of price inflation | 3.6% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.1% |

Source: Asian Development Bank estimates.

## A. Breakdown of Cost Estimates

**Table 5: Detailed Cost Estimates by Expenditure Category**

| Expenditure Category | JPY million Amount | % of Base Cost |
|---|---|---|
| **A. Base Costs [a,b]** | | |
| Civil Works | 7,355.08 | 54.3% |
| Consulting Services | 2,533.32 | 18.7% |
| Mechanical and Equipment | 2,067.24 | 15.3% |
| Project Management Cost | 595.88 | 4.4% |
| Study, Survey, Piloting | 514.16 | 3.8% |
| Trainings, Seminars and Workshops | 472.58 | 3.5% |
| **Subtotal (A)** | **13,538.26** | **100.0%** |
| **B. Contingencies [c]** | | |
| Physical | 637.57 | 4.7% |
| Price | 1,106.50 | 8.2% |
| **Subtotal (B)** | **1,744.07** | **12.9%** |
| **C. Financing Charges During Implementation (FCDI) [d]** | | |
| Interest During Construction | 214.10 | 66.0% |
| Commitment Charges | 110.44 | 34.0% |
| **Subtotal (C)** | **324.54** | **100.0%** |
| **Total (A+B+C+D)** | **15,606.87** | **100.0%** |

Note: Numbers may not sum up precisely due to rounding

[a] Includes taxes and duties of JPY1,341.63 million to be financed by Government of Indonesia through tax exemption.

[b] In mid-2022 prices as of 24 October 2022.

[c] Physical contingences computed at 10% for civil works and 2.5% for mechanical and equipment.

[d] Interest during construction computed at 0.52% per annum; commitment charges computed at 0.15% per annum.

Source: ADB estimates.

## B. Allocation and Withdrawal of Loan Proceeds

**Table 6: Allocation of ADB Loan Proceeds**

| Expenditure Category | Loan Proceeds* JPY (¥) | Percentage and basis for withdrawal from the loan account |
|---|---|---|
| Works and goods | 9,921,782,000.00 | 100 percent of total expenditure claimed** |
| Services, studies, trainings, and project management cost | 4,018,918,000.00 | 100 percent of total expenditure claimed** |
| **Total** | **13,940,700,000.00** | |

* Amount includes contingencies.

** Excludes taxes and duties imposed in the territory of the Borrower.

Source: ADB estimates.

## C. Detailed Cost Estimates by Financiers

**Table 7: Detailed Cost Estimates by Financier**
**(¥ million)**

| Expenditure Category | ADB Loan | | Gov. of Indonesia | | Total | |
|---|---|---|---|---|---|---|
| | Amount | % of Cost | Amount | % of Cost | Amount | Taxes and Duties |
| **A. Investment Costs [a,b]** | | | | | | |
| Civil Works | 6,626.20 | 0.90 | 728.88 | 0.10 | 7,355.08 | 728.88 |
| Consulting Services | 2,282.27 | 0.90 | 251.05 | 0.10 | 2,533.32 | 251.05 |
| Mechanical and Equipment | 1,862.38 | 0.90 | 204.86 | 0.10 | 2,067.24 | 204.86 |
| Project Management Cost | 536.83 | 0.90 | 59.05 | 0.10 | 595.88 | 59.05 |
| Study, Survey, Piloting | 463.21 | 0.90 | 50.95 | 0.10 | 514.16 | 50.95 |
| Trainings, Seminars and Workshops | 425.75 | 0.90 | 46.83 | 0.10 | 472.58 | 46.83 |
| **Subtotal (A)** | **12,196.63** | **0.90** | **1,341.63** | **0.10** | **13,538.26** | **1,341.63** |
| **B. Contingencies [c]** | | | | | | |
| Physical | 637.57 | 1.00 | 0.00 | 0.00 | 637.57 | 0.00 |
| Price | 1,106.50 | 1.00 | 0.00 | 0.00 | 1,106.50 | 0.00 |
| **Subtotal (B)** | **1,744.07** | **1.00** | **0.00** | **0.00** | **1,744.07** | **0.00** |
| **C. Financing Charges During Implementation [d]** | | | | | | |
| Interest during construction | 0.00 | 0.00 | 214.10 | 1.00 | 214.10 | 0.00 |
| Commitment charges | 0.00 | 0.00 | 110.44 | 1.00 | 110.44 | 0.00 |
| **Subtotal (C)** | **0.00** | **0.00** | **324.54** | **1.00** | **324.54** | **0.00** |
| **Total Project Costs (A+B+C)** | **13,940.70** | **0.89** | **1,666.17** | **0.11** | **15,606.87** | **1,341.63** |

Note: Numbers may not sum up precisely due to rounding.

[a] Includes taxes and duties of JPY1,341.63 million to be financed by Government of Indonesia through tax exemption.
[b] In mid-2022 prices as of 24 October 2022.
[c] Physical contingences computed at 10% for civil works and 2.5% for mechanical and equipment.
[d] Interest during construction computed at 0.52% per annum; commitment charges computed at 0.15% per annum.

Source: ADB estimates.

## D. Detailed Cost Estimates by Outputs

**Table 8: Detailed Cost Estimates by Outputs**
**(¥ million)**

| Expenditure Category | 1. Quality and sustainable inputs production increased | | 2. Sustainable aquaculture infrastructure and services developed | | 3. Shrimp aquaculture value chain strengthened | | Total cost | |
|---|---|---|---|---|---|---|---|---|
| | Amount | % of Cost | Amount | % of Cost | Amount | % of Cost | Amount | % of Cost |
| **A. Investment Costs [a,b]** | | | | | | | | |
| Civil Works | 3,026.74 | 41.2% | 4,328.34 | 58.8% | 0.00 | 0.0% | 7,355.08 | 100.0% |
| Consulting Services | 734.48 | 29.0% | 0.00 | 0.0% | 1,798.85 | 71.0% | 2,533.32 | 100.0% |
| Mechanical and Equipment | 1,715.22 | 83.0% | 352.03 | 17.0% | 0.00 | 0.0% | 2,067.24 | 100.0% |
| Project Management Cost | 0.00 | 0.0% | 0.00 | 0.0% | 595.88 | 100.0% | 595.88 | 100.0% |
| Study, Survey, Piloting | 0.00 | 0.0% | 493.90 | 96.1% | 20.26 | 3.9% | 514.16 | 100.0% |
| Trainings, Seminars and Workshops | 147.98 | 31.3% | 252.28 | 53.4% | 72.32 | 15.3% | 472.58 | 100.0% |
| **Subtotal (A)** | **5,624.41** | **41.5%** | **5,426.54** | **40.1%** | **2,487.31** | **18.4%** | **13,538.26** | **100.0%** |
| **B. Contingencies [c]** | | | | | | | | |
| Physical | 348.06 | 54.6% | 289.51 | 45.4% | 0.00 | 0.0% | 637.57 | 100.0% |
| Price | 426.77 | 38.6% | 483.57 | 43.7% | 196.17 | 17.7% | 1,106.50 | 100.0% |
| **Subtotal (B)** | **774.82** | **44.4%** | **773.08** | **44.3%** | **196.17** | **11.2%** | **1,744.07** | **100.0%** |
| **C. Financing Charges During Implementation [d]** | | | | | | | | |
| Interest during construction | 0.00 | 0.0% | 0.00 | 0.0% | 0.00 | 0.0% | 214.10 | 100.0% |
| Commitment charges | 0.00 | 0.0% | 0.00 | 0.0% | 0.00 | 0.0% | 110.44 | 100.0% |
| **Subtotal (C)** | **0.00** | **0.0%** | **0.00** | **0.0%** | **0.00** | **0.0%** | **324.54** | **100.0%** |
| **Total Project Costs (A+B+C)** | **6,399.23** | **41.0%** | **6,199.62** | **39.7%** | **2,683.48** | **17.2%** | **15,606.87** | **100.0%** |

Note: Numbers may not sum up precisely due to rounding.

[a] Includes taxes and duties of JPY1,341.63 million to be financed by Government of Indonesia through tax exemption.

[b] In mid-2022 prices as of 24 October 2022.

[c] Physical contingences computed at 10% for civil works and 2.5% for mechanical and equipment.

[d] Interest during construction computed at 0.52% per annum; commitment charges computed at 0.15% per annum.

Source: ADB estimates.

## E. Detailed Cost Estimates by Year

**Table 9: Detailed Cost Estimates by Year**
(¥ million)

| Expenditure Category | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | Total |
|---|---|---|---|---|---|---|---|
| **A. Investment Costs [a,b]** | | | | | | | |
| Civil Works | 0.00 | 663.44 | 4,409.16 | 1,545.34 | 737.13 | 0.00 | 7,355.08 |
| Consulting Services | 0.00 | 330.28 | 610.34 | 631.38 | 620.81 | 340.51 | 2,533.32 |
| Mechanical and Equipment | 0.00 | 36.39 | 1,080.75 | 597.06 | 353.04 | 0.00 | 2,067.24 |
| Project Management Cost | 0.00 | 124.11 | 121.50 | 119.05 | 116.74 | 114.48 | 595.88 |
| Study, Survey, Piloting | 0.00 | 34.24 | 167.54 | 106.31 | 104.14 | 101.92 | 514.16 |
| Trainings, Seminars and Workshops | 0.00 | 62.66 | 158.96 | 108.02 | 87.15 | 55.79 | 472.58 |
| **Subtotal (A)** | **0.00** | **1,251.12** | **6,548.26** | **3,107.18** | **2,019.02** | **612.69** | **13,538.26** |
| **B. Contingencies [c]** | | | | | | | |
| Physical | 0.00 | 51.53 | 406.36 | 125.49 | 52.96 | 1.23 | 637.57 |
| Price | 0.00 | 41.14 | 450.03 | 294.52 | 240.33 | 80.49 | 1,106.50 |
| **Subtotal (B)** | **0.00** | **92.67** | **856.40** | **420.00** | **293.28** | **81.71** | **1,744.07** |
| **C. Financing Charges During Implementation [d]** | | | | | | | |
| Interest during construction | 0.00 | 3.22 | 24.12 | 50.32 | 64.49 | 71.94 | 214.10 |
| Commitment charges | 20.91 | 41.82 | 38.16 | 6.53 | 2.53 | 0.48 | 110.44 |
| **Subtotal (C)** | **20.91** | **45.05** | **62.28** | **56.85** | **67.02** | **72.42** | **324.54** |
| **Total Project Costs (A+B+C)** | **20.91** | **1,388.84** | **7,466.94** | **3,584.04** | **2,379.32** | **766.82** | **15,606.87** |

Note: Numbers may not sum up precisely due to rounding.

[a] Includes taxes and duties of JPY1,341.63 million to be financed by Government of Indonesia through tax exemption.
[b] In mid-2022 prices as of 24 October 2022.
[c] Physical contingences computed at 10% for civil works and 2.5% for mechanical and equipment.
[d] Interest during construction computed at 0.52% per annum; commitment charges computed at 0.15% per annum.

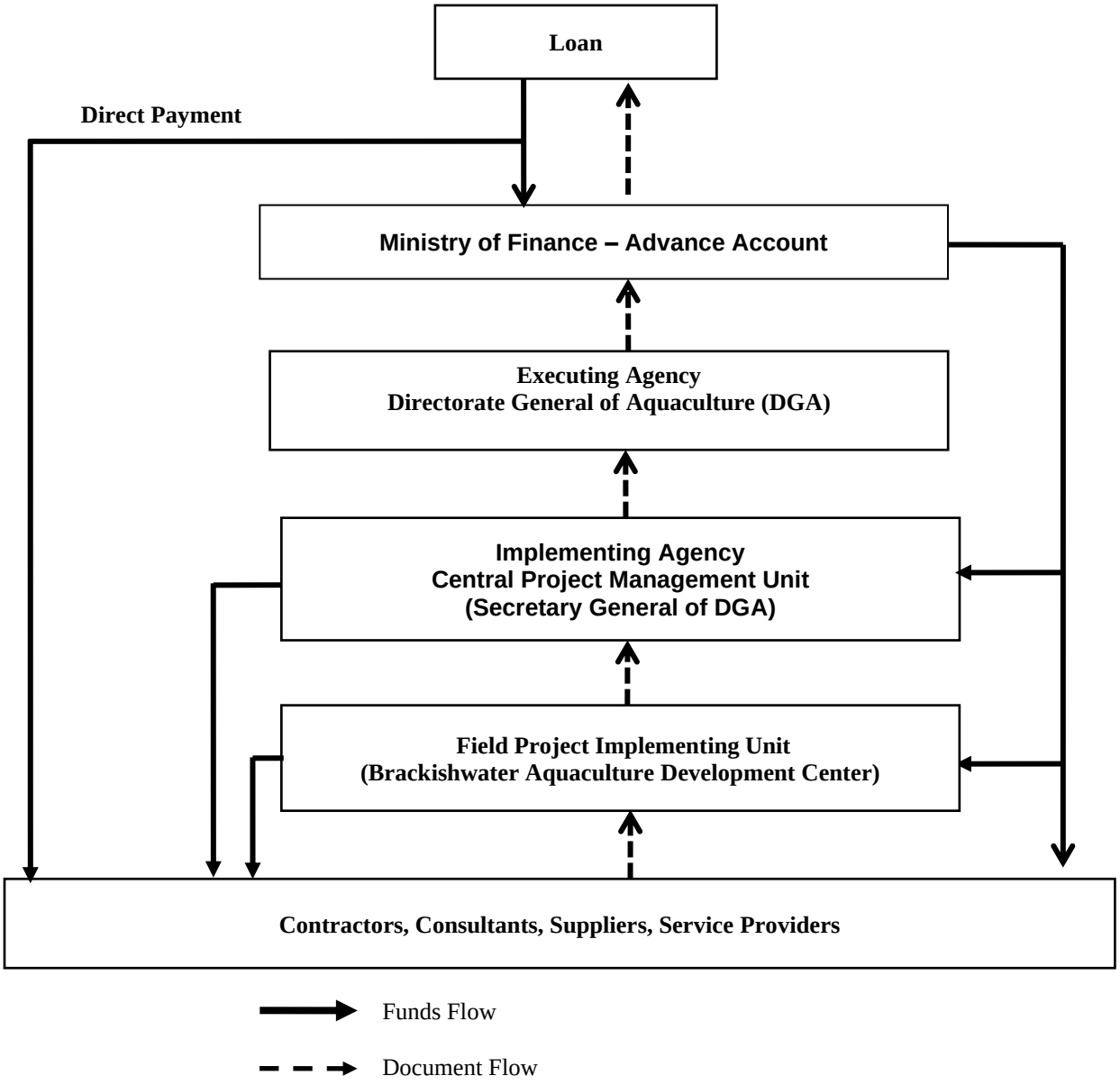
Source: ADB estimates.

## F. Contract and Disbursement S-Curve

24. The projection for contract awards and disbursements is in Appendix 7.

## G. Fund Flow Diagram

**Figure 2: Fund Flow Arrangement**




Source: Asian Development Bank.

25. The flow of funds for the project will follow the Regular National Budget (*anggaran pendapatan dan belanja negara [APBN])* mechanisms. All contractors and consultant invoices will be submitted to the Commitment Making Officer representing the Budget Holder (*Kuasa Pengguna Anggaran – KPA*) who will review and verify the invoices and relevant supporting documents and submit them to the Verification Officer. During this process, the invoices and

supporting documents will be reviewed and verified prior to issuing a payment request (*Surat Permintaan Membayar – SPM*) to the Treasury Office in the area. The Treasury Office will then issue a payment order (*Surat Perintah Pencairan Dana - SP2D*) to its operational bank, which will arrange for the remittance of funds from the designated account to respective contractors' or consultants' accounts.

## V. FINANCIAL MANAGEMENT

### A. Financial Management Assessment

26. The Financial Management Assessment (FMA) was conducted in May 2022 in accordance with ADB's guidelines on Financial Management Technical Guidance Note (2015)[10] and the Financial Due Diligence: A Methodology Note (2009).[11] The FMA considered the capacity of the executing and the implementing agencies, including funds-flow arrangements, staffing, accounting and financial reporting systems, financial information systems, and internal and external auditing arrangements.

27. The Public Financial Management assessment indicates that the government's prevailing financial, accounting, auditing rules, and systems meet generally accepted international accounting and auditing standards. The 2017 Public Expenditure and Financial Accountability Assessment for Indonesia showed that 17 of the 31 indicators scored A or B, which are both considered above the basic alignment with international good practice. Indicators with particularly positive assessment results included transparency of public finance, and accounting and reporting—all key for the successful implementation of the project.[12] The assessment also identified some areas for improvement, including the strategic allocation of resources and the efficiency of public spending by linking performance information more effectively to planning and budgeting. The established legal and regulatory framework for public financial management was strengthened in 2017 through the government regulations mandating coordination between the National Planning Agency and the Ministry of Finance (MOF) to improve the policy orientation of budgeting.

28. The pre-mitigated FM risk level for the project is **moderate** due to (i) inconsistent FM practices across UTPs/PIUs and lack of a comprehensive FM manual; (ii) DGA and UPTs' limited experience and capacity on ADB disbursement procedures and FM requirements; (iii) limited staff resources; and (iv) limited capacity of the financial information systems to produce financial reports meeting ADB's requirements (i.e. following MOF's cash-basis accounting regulations); and (v) potential delayed availability of funds during Project implementation due to budgeting issues. The MOF and DGA have adequate capacity to manage and administer the advance account and statement of expenditures (SOE) procedures. Overall, the project's FM risk could be mitigated through (i) development of a comprehensive FM manual to guide EA and IAs' consistent FM practices and controls; (ii) early engagement of qualified FM consultants to provide support, coordinate, and oversight; (iii) early and regular trainings for DGA and PIU staff on ADB's disbursement and FM requirements; and (iv) close coordination across EA and IAs to ensure smooth and timely implementation.

[10] ADB. 2015. Financial Management Technical Guidance Note. Manila.
[11] ADB. 2009. Financial Due Diligence: A Methodology Note. Manila.
[12] World Bank. 2018. Indonesia Public Expenditure and Financial Accountability (PEFA) Assessment Report 2017. Jakarta.

29. A timebound actions plan was prepared and agreed with the responsible parties to mitigate these risks during implementation. The actions will be monitored through periodic progress reports and review missions.

**Table 10: Financial Management Action Plan**

| Risk Description | Risk Rating | Mitigation Measures or Risk Management Plan | Responsibility | Timing |
|---|---|---|---|---|
| **Implementing Entity**<br>Potential inefficient coordination and slow information flow between the EAs, IAs and PIUs causing delays. | S | Formally establish CPMU to ensure regular coordination, communication, and resolution of issues<br>Formally establish PIU to coordinate implementation at regional level<br>Development clear project's tasks and responsibilities for key staffing positions in the CPMU/PIUs and reporting protocols | a. MMAF, DGA<br><br>b. MMAF, DGA, CPMU<br>c. DGA, CPMU, PIUs | Upon loan signing<br><br>Upon loan signing<br>Before loan effectiveness |
| **Planning and Budgeting**<br>Delayed availability of funds during Project implementation | M | Mobilize FM consultants to support the EA and IAs to coordination with local governments to commit to providing local budgets. | CPMU and PIUs | Within 2 months of loan effectiveness |
| **Staffing and Capacity**<br>Lack of adequate FM resources and staff with full understanding or experience with ADB requirements and procedures potentially affects project's performance and compliance. | S | Ensure CPMU and PIUs are staffed adequately with FM staff<br>Facilitate or deliver trainings to staff on ADB FM, ADB disbursement procedures and government regulations.<br>Recruit qualified FM consultants to support the project in budgeting, internal controls, monitoring, accounting and reporting. | a. DGA<br><br>b. DGA/CPMU, PIUs, FM consultants<br>c. CPMU and PIUs | Prior to loan effectiveness<br>Throughout implementation<br><br>Within 2 months of loan effectiveness |
| **Accounting and Financial Reporting**<br>Incomplete or late submission of financial reports meeting ADB's requirements and financial data for progress reports, which could delay financial audit and/or project monitoring. | S | a. Recruit FM consultants to train and support DGA, CPMU, PIUs' staff to prepare financial data and consolidate project's financial reports timely and accurately.<br><br>b. Develop a comprehensive FM manual to provide: (i) guidance to project finance staff on the FM requirements in accordance with government regulations and ADB's FM policies to ensure that the project will submit complete financial statements and comply with ADB FM requirements; and (ii) mapping of project's expenditure categories with the government's chart of account following cash-basis accounting meeting MOF's regulations. | a. CPMU and PIUs<br><br>b. DGA, CPMU, FM specialist consultant | a. Within 2 months of loan effectiveness<br><br>b. Within 5 months of loan effectiveness |
| **Internal Control**<br>The internal controls across PIUs are inconsistent or may not be complete for project's needs. | M | Develop a comprehensive FM manual to guide project finance staff on the standardized internal controls and FM requirements for the project to ensure compliance with government regulations and ADB's FM policies | DGA, CPMU, FM consultants | Within 5 months of loan effectiveness |
| **Internal Audit**<br>The Inspector General of DGA may not be familiar with ADB projects and requirements and thus cannot fully highlight project deficiencies relating to ADB requirements. | M | Include internal audit staff in training of ADB's policies and procedures for project implementation | DGA | Throughout project implementation |
| **External Audit**<br>Delayed submission of the annual audit reports to ADB following the loan agreement. | M | DGA to include financial reporting timeline, format, and requirements in the FM manual<br>DGA to monitor the reporting timeline to ensure timely delivery of | DGA, FM consultants | a. Within 5 months of loan effectiveness<br>b. Throughout implementation |

| Risk Description | Risk Rating | Mitigation Measures or Risk Management Plan | Responsibility | Timing |
|---|---|---|---|---|
| | | unaudited financial statements to BPK for annual audit. | | |

ADB = Asian Development Bank, CPMU = central project management unit, EA = executing agency, H = High, IA = implementing agency, L = Low or Negligible, M = Moderate, MOF = Ministry of Finance, MMAF = Ministry of Agriculture, PIU = project implementation unit, S = Substantive.
Source: Asian Development Bank.

## B. Disbursement

### 1. Disbursement Arrangements for ADB Funds

30. The loan proceeds will be disbursed in accordance with ADB's *Loan Disbursement Handbook* (2022, as amended from time to time),[13] and detailed arrangements agreed upon between the government and ADB.

31. **Advance account procedure.** The government (MOF) will establish an advance account for MMAF at the central bank (Bank Indonesia) to facilitate the timely release of loan funds. The currency of the advance account will be the Japanese Yen. The advance accounts will be established, managed, replenished, and liquidated in accordance with ADB's *Loan Disbursement Handbook* (2022, as amended from time to time). The advance account is to be used exclusively for ADB's share of eligible expenditures. The MOF, who administers the advance account, is accountable and responsible for its proper use. The EA will be responsible for providing documents for disbursement, liquidation, and replenishment.

32. The total outstanding advance to the advance account should not exceed the estimate of ADB's share of expenditures to be paid through the advance account for the forthcoming 6 months. MOF will request for initial and additional advances to the advance account based on an Estimate of Expenditure Sheet[14] setting out the estimated expenditures to be financed through the accounts for the forthcoming 6 months. Supporting documents should be submitted to ADB or retained by the Borrower (MOF, the executing agency, and the implementing agencies) in accordance with *ADB's Loan Disbursement Handbook* (2022, as amended from time to time) when liquidating or replenishing the advance account.

33. **Statement of expenditures (SOE) procedure.**[15] The SOE procedure may be used for reimbursement and liquidation of the advance account. Supporting documents and records for the expenditures claimed under the SOE should be maintained and made readily available for review by ADB's disbursement and review mission or upon ADB's request for submission of supporting documents on a sampling basis, and for independent audit.

34. Prior to submission of the first withdrawal application (WA), the borrower should submit to ADB, sufficient evidence of the authority of the persons who will sign the WAs on behalf of the government, together with the authenticated specimen signatures of each authorized person. The minimum value per WA is stipulated in the *Loan Disbursement Handbook* (2022, as amended from time to time). Individual payments below such amount should be paid (i) by the executing agency/implementing agencies and subsequently claimed to ADB through reimbursement, or (ii) through the advance fund procedure, unless otherwise accepted by ADB. The borrower should

[13] ADB. 2022. *Loan Disbursement Handbook*. Manila.
[14] Estimate of Expenditure sheet is available in Appendix 8A of ADB's *Loan Disbursement Handbook* (2022, as amended from time to time).
[15] SOE forms are available in Appendix 7B and 7D of ADB's *Loan Disbursement Handbook* (2022, as amended from time to time).

ensure sufficient category and contract balances before requesting disbursements. Use of ADB's Client Portal Disbursement (CPD)[16] System is mandatory for submission of WAs to ADB. Sample forms for withdrawal applications of loan proceeds can be downloaded from the ADB website.

35. Sufficient supporting documentation, as defined in ADB's *Loan Disbursement Handbook* (2022, as amended from time to time) will be kept at each level of the project implementation to substantiate all expenditures incurred from the loan proceeds. Relevant project staff will be trained in ADB's disbursement procedures.

36. **Disbursement arrangements for counterpart fund.** The executing and implementing agencies are responsible for preparing and requesting budgetary allocations for counterpart funds to be included in the DIPA. Disbursement procedures for the counterpart funds will follow the government regulations. The government will finance local taxes and duties under the project and budget them in the counterpart funds.

## C. Accounting

37. Each executing and implementing agency will maintain, or cause to maintain, separate books and records by funding source for all expenditures incurred by the project. The executing agency will prepare consolidated project financial statements in accordance with the government's accounting laws and regulations which are consistent with international accounting principles and practices.

## D. Auditing and Public Disclosure

38. The executing agency will cause the detailed consolidated project financial statements, inclusive of advance account and transactions from all funding sources, to be audited in accordance with the State Financial Audit Standards (SPKN) regulated by BPK RI Regulation Number 1 of 2017 which is aligned with International Standards on Auditing (ISA) issued by International *Federation of Accountants* (IFAC), by an independent auditor whose qualifications, experience, and terms of reference are acceptable to ADB. Such audited project financial statements will be submitted in the English language to ADB within 6 months of the end of the fiscal year by executing agency.

39. The annual audited project financial statements will include auditor's opinions, which cover (i) whether the project financial statements present an accurate and fair view or are presented fairly, in all material respects, in accordance with the applicable financial reporting standards; and (ii) whether the loan proceeds were used only for the purpose(s) intended as defined in the loan agreement. In addition, the audit report for the project financial statements must include a management letter.

40. Compliance with financial reporting and auditing requirements will be monitored by review missions and during normal program supervision, and followed up regularly with all concerned parties, including the external auditor.

41. The borrower, the executing agency and the implementing agencies have been made aware of ADB's approach to delayed submission, and the requirements for satisfactory and

[16] The CPD facilitates online submission of WA to ADB, resulting in faster disbursement. The forms to be completed by the Borrower are available online at https://www.adb.org/documents/client-portal-disbursements-guide.

acceptable quality of the audited project financial statements.[17] ADB reserves the right to require a change in the auditor (in a manner consistent with the constitution of the borrower), or for additional support to be provided to the auditor, if the required audits are not conducted in a manner satisfactory to ADB, or if the audits are substantially delayed. ADB reserves the right to verify the project's financial accounts to confirm that the share of ADB's financing is used in accordance with ADB's policies and procedures.

42. Public disclosure of the audited financial reports, including the auditor's opinion, will be guided by ADB's Access to Information 2018.[18] After the review, ADB will disclose the audited project financial statements and the opinion of the auditor on the project financial statements no later than 14 days of ADB's confirmation of their acceptability by posting them on ADB's website. The management letter and the additional auditor's opinion will not be disclosed.[19]

## VI. PROCUREMENT AND CONSULTING SERVICES

### A. Advance Contracting

43. All advance contracting will be undertaken in conformity with *ADB Procurement* Policy (2017, as amended from time to time) and the *Procurement Regulations for ADB Borrowers* (2017, as amended from time to time). The issuance of invitations to bid under advance contracting will be subject to ADB approval. The borrower, the executing agency, and the implementing agencies have been advised that approval of advance contracting does not commit ADB to finance the project.

44. **Advance Contracting.** Advance contracting under the project will be applicable for recruitment of engineering, technical, advisory, and project management consultants and procurement of civil works and goods including advertisement, receiving bids, and evaluation of bids, prior to loan effectiveness. Individual consultant selections to support the project facilitation may follow advance contracting actions.

### B. Procurement of Goods, Works, and Consulting Services

45. All procurement of goods and works and consulting services will be undertaken in accordance with *ADB Procurement Policy* (2017, as amended from time to time) and the *Procurement Regulations for ADB Borrowers* (2017, as amended from time to time) and related procurement staff instruction for Borrower administered recruitment and procurement.

---

[17] ADB's approach and procedures regarding delayed submission of audited project financial statements:
When audited project financial statements are not received by the due date, ADB will write to the EA advising that (a) the audit documents are overdue; and (b) if they are not received within the next 6 months, requests for new contract awards and disbursement such as new replenishment of advance accounts, processing of new reimbursement, and issuance of new commitment letters will not be processed.
When audited project financial statements are not received within 6 months after the due date, ADB will (a) withhold processing of requests for new contract awards and disbursement such as new replenishment of advance accounts, processing of new reimbursement, and issuance of new commitment letters; (b) withhold the extension of the loan closing date; and (c) defer negotiation or Board presentation of new loan proposals. ADB will inform the EA of ADB's actions and advise that the loan may be suspended if the audited project financial statements are not received within the next 6 months.
When audited project financial statements are not received within 12 months after the due date, ADB may suspend or cancel the loan.

[18] ADB. 2018. *Access to Information Policy.* Manila.

[19] This type of information would generally fall under public communications policy exceptions to disclosure. ADB. 2011. Public Communications Policy. Paragraph 97(iv) and/or 97(v).

46. Civil works and goods contracts will be procured through open competitive bidding (OCB), request for quotation (RFQ) both following national advertisement and community participation in procurement (CPP). The national electronic public procurement system (*sistem pengadaan secara elektronik* [SPSE]) may be used for OCB national advertisement, provided the system accommodates the agreed standard bidding document (SBD) and bidding method.

47. The procurement risk is assessed as **moderate**, reflecting the available procurement capacity, highlighting associated risks, and assistance in the design of risk mitigation measures. Although MMAF has no previous experience in implementing the procurement following the ADB procurement procedures, the procurement officers at both the ministry and the UPTs are familiar with the technical nature of the works and goods the project will procure. Based on the assessment, ADB's review type has been established. In case of works and goods contract, the first OCB and RFQ of similar nature for each implementing agency shall be prior reviewed by ADB and the remaining may be post reviewed by ADB. A sampling approach will be applied to the contract packages for the succeeding packages. All consulting packages will be subject to prior review. To achieve the value for money in procurement, the project will combine similar nature into one package, such as procurement of equipment for laboratories, farmer cluster and farmer ponds. Furthermore, the project will strategically assign the procurement task to the MMAF and UPTs Procurement committees to accurately reflect the technical advice from the academic institution for the government facilities procurement and the localized needs of the facilities for the farmers' cluster.

48. The project uses CPP for small civil works and planting activities to achieve sustainable aquaculture. Prior to loan approval a template for CPP will be developed following the national standard documents for CPP with adopting the ADB procurement requirements.

49. To support the project implementation, engineering and project management consultants will be recruited through OCB procedures using a quality- and cost- based selection. The Consultants will support the implementing agencies in undertaking procurement in line with procurement arrangements agreed for the project. The terms of reference for all consulting services are detailed in Appendix 9.

50. Direct contracting will be applied to the engagement of the Ocean Institute of Hawaii (OIH) to provide technical advisory and transfer of knowledge to MMAF. Direct contracting is justified because of the unique nature of the service, which cannot be delivered through a competitive selection and considering that limited entities have developed the required technology.[20] OIH is planned to transfer technology and knowledge to produce high quality broodstock, based on a partnership agreement with MMAF.

51. Before the start of any procurement, ADB and the government will review the public procurement laws of the government to ensure consistency with ADB's Procurement Policy and Procurement Regulations for ADB Borrowers (2017, both as amended from time to time).

### C. Procurement Plan

52. The procurement plan is in Appendix 8. The information in the procurement plan is indicative and will be further detailed during the project start up period through a discussion between ADB and MMAF.

[20] Only companies from Hawaii and Florida have developed technology to produce high quality genetic fry for Vanamei shrimp.

## D. Consultant's Terms of Reference

53. The terms of reference for consultants are in Appendix 9.

# VII. SAFEGUARDS

## A. Environmental Safeguards

54. The project is classified as environmental category B based on its characteristic according to ADB's Safeguard Policy Statement 2009 (SPS). The environmental impacts mainly come from its operation stage which in turn is partly determined by the design.

55. The executing agency through the implementing agency(s) shall ensure that:

(i) The project is implemented in accordance with the country's laws and regulations related to environment, health and safety (EHS), including requirement on COVID-19, as well as ADB's SPS, mostly reflected in the environmental management plan (EMP).
(ii) The EMPs shall be included in the bidding and contracts requiring contractors to comply with all applicable provisions and requirements.
(iii) Adequate budget and staff resources are allocated for the EMP implementation.

56. To ensure compliance with both ADB and domestic requirements on EHS in a cost-effective manner, the arrangement for supervision and monitoring of the EMP implementation will consist of the following:

(i) During construction:
  (a) The (supervision) engineer and its resident engineers will carry out routine on-site check and submit to the PIU at least monthly reports which should cover contractors' implementation of the EMP.
  (b) The CPMU/PIUs supported by their environmental staff and consultants will carry out on-site supervision and inspection on random basis and record the findings and corrective actions if any in writing.
  (c) Quantitative monitoring if any as specified in the EMP will be undertaken in the way described in the EMP, with external monitoring entity engaged by the CPMU/PIUs and financed by the project if needed. The monitor will submit to the testing results, explanation if they comply with applicable standards or not, and analyze the reason for any non-compliance.
  (d) Based on the work of (a) to (c), the CPMU supported by their consultants and PIUs can readily compile semi-annual environmental report to ADB and the government.
(ii) During operation phase:
  (a) The operators or host of facilities/subprojects are responsible to follow the operation phase measures of their respective EMP, including training and reporting.
  (b) Arrange and/or conduct quantitative monitoring as specified in the EMP. The monitors will submit to the testing results, explanation if they comply with applicable standards or not, and analyze the reason for any non-compliance.
  (c) The CPMU and PIUs are responsible for supervising the EMP implementation to ensure compliance with applicable EHS requirements, and reporting to the ADB.

57. **For subprojects that will be identified during the project implementation.** Only those that have minimal or moderate environmental impacts, equivalent to category C and B as defined by ADB and have all necessary domestic approval/permits will be eligible for project financing. The environmental assessment and review framework (EARF) sets out criteria and procedure for the environmental screening, assessment, and management of these future subprojects to ensure compliance with both domestic and ADB requirements.

58. All subproject proponents need to fill out the environmental worksheets annexed to the EARF as part of the application and provide other information and site access as needed by the CPMU/PIU. For those assessed to be category C on environment, no impact assessment is required. Such subprojects need to follow applicable Environmental Code of Practices annexed to the EARF during their construction and operation.

59. For environmental category B subprojects, the proponent needs to carry out initial environmental examination (IEE) in line with both ADB and domestic requirements as reflected in the model IEE of representative subprojects prepared during the project processing.[21] The EMP developed to mitigate the potential impacts will be part of the bidding and contracting documents to ensure their execution during construction and operation.

60. After passing various assessments including IEE and meeting all criteria, subprojects can be selected for financing. The sub-borrowers are responsible for implementing their subproject's EMP and applicable environmental code of practice (in the case of category C). The CPMU/PIU is responsible for supervision, monitoring and reporting according to the requirements set in the EARF.

61. During subproject contract period, any changes to the subprojects that may cause negative environmental impacts shall be screened by the environmental specialists of the CPMU/PIU and/or the ADB. If such impacts go beyond the original environmental category resulting in a rise from category C to B, impact assessment and EMP will be required according to the EARF. In case of a subproject originally categorized as category B, a change to category A will in effect disqualify it for the project support. Funds initially disbursed to the said subproject will be discontinued or follow non-compliance procedure described in the EARF.

62. The PIU supported by their consultants/experts will be the entry point and carry out screening of subproject proposals. The CPMU will review and quality control the screening, advise on their assessment according to the EARF procedure and arrangement. Based on the screening and assessment (for category B subprojects), the CPMU will decide if the subproject proposed will be supported by the project.

## B. Social Safeguards

63. **Involuntary Resettlement.** The project is classified as category C for involuntary resettlement in accordance with ADB's SPS 2009 based on the assessed sample core subprojects in Jepara and Takalar districts of Central Java and South Sulawesi provinces. The proposed infrastructures located on government lands do not require land acquisition nor resettlement. Due diligence report (DDR) had been prepared for the sample core subprojects including government facilities. For infrastructures at the community level, the project will refer the community development framework (CDF). Under this approach the project infrastructures will be

[21] The initial environment examination is accessible from the list of linked documents in Appendix 2 of the Report and Recommendation of the President to the Board of Directors.

located on the farmers' land/ponds without land ownership transfer. The participating farmers will provide their consent to have the project use their lands during the project implementation period. The project's shrimp farmers will be the direct beneficiaries of any project intervention on their lands/ponds. The CDF provides details of mechanisms and implementation of the approach. Shared land use and utilization of land will follow procedure in a transparent, consistent, and equitable manner and be confirmed through written record and verified by an independent third party financed by the project, ensuring that shared land use does not severely affect the living standards of the farmers. The CDF also provides the procedures, key principles and requirements for social impact assessment, consultations with local community, preparation, and implementation of community development plan (CDP). The sustainable aquaculture development plan (SADP) to be prepared for each subproject will incorporate the CDP.

64. Subproject triggering category A or B for involuntary resettlement impacts will be excluded. Implementing agencies will screen potential subprojects to identify past, present, and future land acquisition and resettlement impacts and will adopt measures to avoid or minimize these impacts. In the event that any involuntary land acquisition and resettlement will be required in any future subprojects, the project will report to ADB and project's recategorization might be required and the needed safeguards document following ADB SPS (2009) will be prepared.

65. Meaningful consultations will be conducted with affected persons and concerned parties to ensure their participation in planning, implementation, and monitoring throughout the subproject preparation and implementation. Special attention will be provided to the needs of vulnerable groups (especially those below the poverty line, the landless, the elderly, women and children, those without legal title to land, and indigenous peoples).

66. **Indigenous Peoples.** The maps on indigenous people issued by the Ministry of Social Affairs, the Indigenous Peoples' Alliance of the Archipelago (AMAN), and World Bank indicate that indigenous people groups (customary communities) live in several project locations. The project is classified as category B for indigenous people because the project is likely to have limited impact on indigenous people or customary communities (IP/CC). Any involvement on customary land will go through screening mechanism and impact assessment process as described in the indigenous people planning framework (IPPF), combined with the project selection criteria provided in the community development framework (CDF) approach. Meaningful consultation will be required, and clear agreement will need to be reached with the community members. Project site specific development plan will be prepared to ensure no adverse impacts will be experienced by the customary community's members in the project sites and no IR impacts will occur to them. The implementing agencies shall screen each subproject and ensure that subprojects triggering category A for IP as per ADB SPS 2009 will be excluded from project financing. The magnitude of impact is assessed against the following elements: (i) customary rights of use and access to land and natural resources; (ii) socioeconomic status; (iii) cultural and communal integrity; (iv) health, education, livelihood, and social security status; and (v) recognition of indigenous people.

67. Meaningful consultations with customary communities (including women and youth) at each stage of the project will be conducted to identify customary communities' perspectives, issues, and concerns. Meaningful consultation will be conducted on regular basis during project implementation period. Customary community members located in project areas will be part of the project beneficiaries as detailed in the prepared Masyarakat Hukum Adat/customary cultural community development plan (MHADP). Its implementation will be monitored and reported in the semiannual social safeguard monitoring report (SSMR).

68. **Social safeguards documents and plans.** Impact assessments and safeguard plans have been prepared during subproject preparation in conformity with (a) applicable Indonesian laws and regulations related to land acquisition and CC; (b) ADB SPS 2009 on IR and IP Safeguards. There are five safeguard documents prepared for the project (i) CDF, (ii) indigenous people planning framework (IPPF), (iii) SADPs in Jepara and Takalar districts; (iv) MHADP, and (v) DDR on land acquisition for the proposed infrastructure on government land. The SADPs, DDR and MHADP of two representative subprojects should be used as sample/reference documents for safeguard documents to be prepared during project implementation. These are documents to be prepared for each subproject during project implementation: (i) SADP, (ii) DDR for MMAF's infrastructure and DDR for Farmer's infrastructure, and, if required, (iii) MHADP. If involuntary land acquisition and resettlement policy is triggered, the implementing agencies shall report to ADB and prepare a safeguard planning document for the respective subproject in accordance with ADB SPS (2009). These documents will be disclosed to the affected persons and posted on the ADB and project websites.

69. **External monitor agency (EMA).** To ensure project compliance with ADB SPS (2009) on involuntary resettlement and indigenous people policies, the project will recruit external independent monitoring consultants for the entire project implementation period. The EMA will monitor and evaluate the implementation of the CDF, SADP(s), IPPF and MHADP(s) for each subproject. The CPMU will recruit the EMA. The EMA will prepare and submit semiannual reports to the CPMU and ADB for review and disclosure. Due to the large areas of the project activities, several EMAs will be recruited for effectivity and efficiencies. The EMA can be from local nongovernment organizations, university research centers, consultant company that have the appropriate experience and qualification in project monitoring and evaluation. The TOR of the EMA is in Appendix 9.

70. **Institutional arrangements for environment and social safeguards**. The executing agency will be responsible for overall project implementation including safeguards. The CPMU will have dedicated safeguard officers, and supported by environment and social safeguards specialists from the Project Management Consultant (PMC), will perform the following:

(i) Ensure the project's compliance to ADB SPS (2009) and the loan agreement provisions.
(ii) Ensure the implementation of safeguard documents.
(iii) Prepare and submit to ADB consolidated semiannual environment and social safeguards monitoring reports for review and disclosure on ADB website.
(iv) Provide guidance to regional safeguards consultants, and capacity building on safeguards across the project implementing agencies.
(v) Undertake screening and classification of subprojects for submission to ADB and relevant local agencies.[22]
(vi) Prepare the respective safeguards documents (IEE, SADP, DDR-corrective action plan, IPP) as needed for the proposed subprojects. Safeguards documents will be reviewed and approved by ADB.
(vii) Establish, implement, and manage project's grievance redress mechanism (GRM).
(viii) Recruit EMAs for monitoring and evaluating the CDF application in the project.

[22] Environment categorization of subprojects per Minister of Environment Regulation No. 5/2012 shall be confirmed by the relevant provincial or district environmental agency (*Dinas Lingkungan Hidup*, DLH).

71. The PIUs will appoint safeguards focal persons (SFP) to supervise and coordinate environment and social safeguards planning and implementation. Environment and social safeguards consultants in each PIU will assist the PIUs in the following:

(i) Preparing and updating safeguard documents (i.e., monitoring reports, DDRs, SADP, MHADP, corrective action plans, semiannual monitoring report, etc.), and ensuring the implementation of project's policy and plans.
(ii) Monitoring day-to-day implementation of safeguards requirements and plans.
(iii) Implementing and managing project's GRM
(iv) Supporting preparation of semiannual safeguard monitoring reports to be submitted to CPMU for consolidation for submission to ADB.
(v) Screening and selecting subproject activity and ensure application of CDF when appropriate.
(vi) Supporting/assisting/monitoring facilitators in implementing the CDF.
(vii) Supporting/assisting the EMA to monitor and evaluate the CDF and IPPF implementation.
(viii) Supporting/assisting the appointed EMA in monitoring and evaluation.
(ix) Obtaining all clearances and fulfilling government requirements and safeguard permits. PIUs will be responsible for collecting data for safeguards documents preparation and monitoring and progress reports, and coordination with relevant agencies including provincial or district environmental agency (*Dinas Lingkungan Hidup*, DLH), land office, regional development acceleration team to consult and/or obtain endorsement if necessary. Institutional roles and responsibilities are detailed in the EARF, CDF and IPPF.

72. **Grievance redress mechanism.** The CPMU will establish a GRM during implementation of the project to address unforeseen problems and issues that may arise due to construction and operational impacts. This mechanism will enable to receive and facilitate resolution of affected peoples' concerns, complaints, and grievances about the project's environment and social safeguards. This mechanism should be culturally appropriate and gender inclusive.

73. **Civil works contracts and contractors.** The project will ensure that bidding and contract documents include specific provisions requiring contractors to comply with all (i) applicable labor laws and core labor standards on (a) prohibition of child labor as defined in national legislation for construction and maintenance activities, (b) equal pay for equal work of equal value regardless of gender, ethnicity or caste, and (c) elimination of forced labor; (ii) the requirement to disseminate information on sexually transmitted diseases including HIV/AIDS to employees and local communities surrounding the project sites; and (iii) responsibility of the construction contractor for reinstatement of temporary impacts and compensation for construction related impacts during implementation of rural roads (output 2). Contractors will carry out all environmental and social mitigation and monitoring measures outlined in their contract, including paying attention and compensation, if needed, for any unanticipated impact occurred during construction activities (crops, trees, infrastructures) to the affected households, if any. PMC experts and PIU safeguard officers will assist the CPMU safeguard officer in monitoring contractor's compliance activities. The CPMU will also ensure that no contract award or civil works activity will start prior to the safeguard document clearance from ADB (i.e., DDR, SADP, MHADP, etc.) of the respective package.

74. **Capacity building.** The PMC's safeguard and capacity building experts will provide safeguard related capacity building to the CPMU, PIUs safeguard officers, and project facilitators on the implementation and preparation of safeguard documents for the project, including the GRM

management. The safeguard expert will also develop monitoring and reporting templates to be used by the project team and project facilitators. Regular briefings and capacity building on safeguard will also be held as needed. The PMC's capacity building expert will provide training and developing implementation module for project facilitators to implement the project activities including CDF, IPPF, and EARF implementation.

## VIII. GENDER AND SOCIAL DIMENSIONS

75. The Summary Poverty Reduction and Social Strategy provides key gender issues relevant to the project and identifies the Gender Equality and Social Inclusion Action Plan (GESIAP) as a measure to promote gender equality and social inclusion. [23]

76. **Gender Category at Entry.** The project's gender classification is "Effective Gender Mainstreaming" (EGM) which means that at least 50% of the outputs integrate gender targets and design features and contribute to addressing gender equality and/or women's empowerment by narrowing gender disparities. A key focus of the GESIAP is to support women's active participation, access to economic opportunities and benefits through various skills development activities.

77. **GESIAP Implementation Arrangements.** The executing agency will be responsible for ensuring the implementation of the GESIAP, more particularly the gender actions and targets.

(i) CPMU will engage a national gender consultant on an intermittent basis to support the executing and implementing agencies in implementing, monitoring, and reporting on the GESIAP and ensuring that GESIAP implementation is on-track. The gender consultant will also be responsible for delivering gender awareness training.

(ii) Implementing agencies will implement the GESIAP with the assistance of consultants and gender focal persons. Gender focal persons will be appointed/designated for the project to manage day-to-day GESIAP activities and monitoring in coordination with the executing agency and implementing agencies, confirm sex-disaggregated baseline data at project inception, maintain sex-disaggregated data during project implementation, and report on the GESIAP implementation progress.

(iii) Project monitoring and evaluation systems will track sex-disaggregated data and quantitative and qualitative information on GESIAP implementation. Status and monitoring reports will be included in the project's quarterly progress reports for ADB and steering committee review.

(iv) The gender staff/consultant based in ADB's Indonesia Resident Mission will participate in the project review missions. ADB will conduct in-depth GESIAP reviews as part of the project's mid-term and final evaluations.

[23] The Summary Poverty Reduction and Social Strategy and Gender Equality and Social Inclusion Action Plan are accessible from the list of linked documents in Appendix 2 of the Report and Recommendation of the President to the Board of Directors.

## Gender Equality and Social Inclusion Action Plan

| Gender Objective | Target Indicator/Action | Responsibilities | Timeframe |
|---|---|---|---|
| **Output 1: Quality and sustainability of inputs for shrimp production increased (by 2027)** | | | |
| 1.1. Integrate gender inclusive design[a] in a modern broodstock center, multiplication centers, and the newly constructed modern laboratories | 1.1.1. A modern broodstock center with a capacity of 500,000 brood stock/year with disaster resilience, gender responsive and inclusive design features established[b] (2022 baseline: 0 modern broodstock center and 0 multiplication center) (DMF 1a)<br>1.1.2. Two multiplication centers with disaster resilience, gender responsive and inclusive design features with a capacity of 2 billion shrimp nauplii/year established (2022 baseline: 0 modern broodstock center and 0 multiplication center) (DMF 1b)<br>1.1.3. Seven modern laboratories newly constructed with disaster resilience, gender responsive and inclusive design features (2022 baseline: 0) (DMF 1c) | Directorate General of Aquaculture (DGA), Technical operating units (UPT) | Year 1 onwards |
| 1.2. Contractors employ local people, including women | 1.2.1. Contractors will be required to employ local workers and at least 20% women in skilled and unskilled positions in civil works[c]<br><br>1.2.2 Contractors conduct outreach to prospective female employees in each of the areas covered by the project through communication channels that are used by women (community centers, women's groups) | UPTs | Year 1 onwards |
| 1.3. Improve knowledge for operating and maintaining government facilities | 1.3.1 At least 30 MMAF staff (at least 20% of whom are women)[d] report having advance competence for operating broodstock and multiplication centers; and laboratories (2022 baseline: 0) (DMF 1.d) | UPTs | Year 2 onwards |
| 1.4. Improve knowledge of small and medium hatcheries (HSRT) and seed farmers | 1.4 At least 140 small-scale hatcheries from the core group (at least 20% women), and 350 seed farmers (at least 20% women) report having improved competence for broodstock breeding protocols, seed production, and good hatchery practice | UPTs | Year 2 onwards |
| 1.5. Strengthen capacity of feed suppliers and farmers | 1.5 At least 35,000 farmers (at least 20% of whom are women) report having basic competence for Feed self-sufficiency Protocols and GERPARI (2022 baseline: 0) (DMF 1e) | UPTs | Year 3 onwards |
| | At least 3,500 female farmers receive separate training sessions on broodstock breeding protocols, seed production and good hatchery practices. | | |
| 1.6. Strengthen UPT staff on operating laboratories and disease surveillance | 1.6.1. At least 70 MMAF staff (at least 20 % of whom are women) report having advance competence for operating laboratories and disease surveillance and monitoring (2021 baseline: 0) | DGA/UPTs | Year 2 onwards |
| 1.7. Increase HSRTs and farmers/groups competence for biosecurity and biosafety | 1.7.1. At least 70 HSRTs (at least 20% whom are women), and 350 farmers from the expansion group (at least 20% of whom are women)[e] report having basic competence for biosecurity and biosafety, and monitoring water quality, disease, and residue | UPTs | Year 3 onwards |
| **Output 2: Sustainable and climate adaptive aquaculture infrastructure and services developed** | | | |
| 2.1. Strengthen extension workers/facilitators | 2.1.1. At least 23 extension workers and 69 facilitators (at least 20% of whom are women) report having advance competence for implementation (35% extension workers are female) | UPTs | Year 2 onwards |
| 2.2. Strengthen farmer-based enterprises | 2.2.1. At least 521 farmers groups established and/or strengthened of which at least 20% have women in their committees (2022 baseline: 0 farmers groups) (DMF 2a.) | UPTs | Year 2 onwards |
| 2.3. Improve farmers capacity in financial literacy, social and environment safeguards, sustainable aquaculture | 2.3.1. 30% of the traditional farmers population (equivalent to 35,000 farmers from the core and expansion groups), at least 20% of whom are women, report having basic competence for financial literacy, good aquaculture practices, social and environment safeguards, climate resilient and sustainable aquaculture, coastal and mangrove management | UPTs | Year 2 onwards |
| 2.4. Sustainable aquaculture development plans | 2.4.1. At least 521 sustainable aquaculture development plans developed with specific measures for female farmers (2022 baseline: 0) (DMF 2b) | DGA/UPTs | Year 2 onwards |
| 2.5. Increase water management groups capacity | 2.5.1. At least 5,210 farmers (at least 20% of whom are women) report increased knowledge in water management and canal management including vegetative management | UPTs | Year 2 onwards |

| | | | |
|---|---|---|---|
| 2.5. Increase farmers' knowledge | 2.5.1. At least 35,000 farmers (at least 20% of whom are women) report increased knowledge in financial literacy, climate resilient and sustainable aquaculture (2022 baseline: 0) (DMF 2e) | UPTs | |
| 2.6. Improve farmer capacity in adhering to Indonesia Good Aquaculture Practices | 2.6.1.30% of the traditional farmers population (equivalent to 35,000 farmers) (at least 20% of whom are women) report having basic competence for Indonesia Good Aquaculture Practices, pond water quality and wastewater technology, | UPTs | Year 2 onwards |
| **Output 3: Shrimp aquaculture supply chain strengthened** | | | |
| 3.1 Strengthen farmers capacity in traceability, certification, food safety | 3.1.1. At least 35,000 farmers (of whom at least 20% are women) report improved knowledge for handling practices, certification, and traceability (STELINA), quality assurance system and food safety of aquaculture products (2022 baseline: 0) (DMF 3a) | UPTs | Year 2 onwards |
| 3.2. Promote gender sensitive information communication and technology (ICT) | 3.2.1. Information and communication delivered to farmers are gender sensitive[f] | DGA/UPTs | Year 2 |
| | 3.2.2. 1 audio visual and 1 printed information package on women in shrimp aquaculture developed and delivered to 7,000 women famers. | DGA/UPTs | |
| | 3.2.3. At least 1 separate feedback and sharing sessions for women farmers conducted per project site each year to inform project implementation. | DGA/UPTs | |
| | 3.2.4. MMAF geospatial database upgraded, and sex-disaggregated data and checklist of information related to human welfare including gender integrated (2021 baseline: not applicable) (DMF 3d.) this seems like an incomplete sentence. | DGA | Year 2 onwards |
| **Project Management Activities** | | | |
| 4.1. Mobilize dedicated gender specialist | 4.1.1. National gender specialist is recruited within year 1 to support and coordinate GESIAP implementation, monitoring, and reporting | DGA/UPTs | Year 1 onwards |
| 4.2. Gender focal person | 4.2.1. PIUs appoint Gender focal person to implement, monitor, and report on the GESIAP | DGA/UPTs | Year 1 |
| 4.3. Capacity building on GESIAP | 4.3.1. At least 1 training/orientation on GESIAP implementation and monitoring provided to EA/IA and other key implementing partners | DGA | Year 1 onwards |
| 4.4. GESIAP reporting | 4.4.1 Project quarterly, mid-term, annual and completion reports include details on progress against GESIAP indicators and results (good practices, lessons learnt, etc.) | DGA | Year 1 onwards |
| 4.5. Integrate GESIAP in project's monitoring and evaluation system | 4.5.1. Sex-disaggregated and gender-related information relevant to the design and monitoring framework GESIAP are integrated in the overall project performance and monitoring system | DGA | |

Source: Asian Development Bank.

[a] Gender inclusive designs include work safety instructions and work standards established, including equal pay for equal work (features such as doors, toilets, lights in proper places, stairs, ramps, etc.) taking into account the needs of women, men, including persons with disabilities.

[b] This include lactation rooms, separate male and female toilets (number and ratio taking into account expected number of users), with doors and features, separate washing (wudhu) area for men and women in prayer rooms, and features that are friendly for people with disabilities.

[c] Reference point: male: 8,145,808 (98.2%), female 147,961 (1.8%) in urban and rural of the trend of population 15 years of age and over who worked during the previous week by main industry (construction) year 2021; BPS, Labor Force Situation in Indonesia, Augustus 2021.

[d] Reference Point: The number of employees of the Ministry of Maritime Affairs and Fisheries (Central and UPT) as of December 31, 2020 is 12,963 people, consisting of 8,726 men or 67.31% and 4,237 women or 32.69%. The number of employees of the Directorate General of Aquaculture is 1,356 (10.46%) Source: Ministry of Marine Affairs and Fisheries Performance Report 2020. https://kkp.go.id/an-component/media/upload-gambar-pendukung/LKJ%20KKP%202020%20Revisi%20(2)%20(1).pdf.

[e] Reference Point: Fish cultivators holding Marine and Fisheries Business Actor Business Cards- (KUSUKA), which is the sole identity card for marine and fisheries business actors, show that the types of individual actors, with micro and small scale businesses, women are 57,102 (13.9%) and men 352,737 (86.1%) or a total of 409,839 people. Source: One KKP Data on April 23, 2022, the achievement of data collection was 25.97% of a total of 1,498,108 KUSUKA holder and 5,768,888 potential people. https://29tatistic.kkp.go.id/kusuka-new/dashb

[f] The project will use gender sensitive material and avoid gender stereotypes for information dissemination and capacity building activities. Different media (pictures, graphics, audio-visual materials, meetings, messaging applications) will be used so that the information also reaches female farmers. It aims to transform attitudes and behaviour related to gender inequality and the exclusion of women. Presenting female voices in traditionally male environment and vice versa contributes to deconstructing stereotypes and gender norms. Such information and communication can have a positive impact on people's attitudes over time.

# IX. PERFORMANCE MONITORING, EVALUATION, REPORTING, AND COMMUNICATION

## A. Project Design and Monitoring Framework

### Table 11: Design and Monitoring Framework

**Impact the Project is Aligned with**:
Contribution of the fisheries industry to the national economy increased (National Medium-Term Development Plan, 2020-2024)[a]

| Results Chain | Performance Indicators | Data Sources and Reporting Mechanisms | Risks and Critical Assumptions |
|---|---|---|---|
| **Outcome**<br>Productivity, profitability, and environmental sustainability of shrimp aquaculture increased | **By 2028:**<br>a. Yield of shrimp farming increased to 3.0 tons/ha/year for farms upgraded by the project (2022 baseline: 0.6 tons/ha/year) (OP 5.3)<br>b. Farmer exchange rate[b] increased to 107 for farms upgraded by the project (2020 baseline: 100) (OP 1.3)<br>c. Environment sustainability improved for 5,260 ha of ponds[c] (2022 baseline: 0) (OP 3.3.1) | a–b. Project baseline and impact evaluation surveys, annual reports by MMAF and BAPPENAS | R: Extreme climate-linked disasters, hazards, and/or the COVID-19 pandemic will affect shrimp aquaculture development |
| **Outputs**<br>1. Quality and sustainability of inputs for shrimp production increased | **By 2027:**<br>1a. A modern broodstock center with a capacity of 500,000 broodstock/year constructed, with disaster–resilient, gender-responsive, and gender-inclusive design features[d] (2022 baseline: 0) (OP 2.5.2, OP 5.3.2)<br>1b. Two multiplication centers with a capacity of 2 billion shrimp nauplii/year constructed, with disaster–resilient, gender-responsive and gender-inclusive design features[c] (2022 baseline: 0) (OP 2.5.2, OP 5.3.2)<br>1c. Seven modern laboratories constructed with disaster resilient, gender-responsive, and gender-inclusive design features[c] (2022 baseline: 0) (OP 2.5.2, OP 3.2.5)<br>1d. At least 30 MMAF staff (at least 20% of whom are women) report having advanced competence in operating broodstock and multiplication centers and laboratories (2022 baseline: 0) (OP 2.1.1) | 1a.–1e. Project progress reports and surveys<br>. | R: Inadequate financing of O&M leads to premature deterioration of infrastructure |

| Results Chain | Performance Indicators | Data Sources and Reporting Mechanisms | Risks and Critical Assumptions |
|---|---|---|---|
| | 1e. At least 35,000 farmers (at least 20% of whom are women) report having basic competence for GERPARI (2022 baseline: 0) (OP 2.1.1, OP5.3.2) | | |
| 2. Sustainable and climate adaptive aquaculture infrastructure and services developed[e] | 2a. At least 521 farmers' groups established and strengthened, of which at least 20% have women on their committees (2022 baseline: 0) (OP 2.3, OP 5.2)<br><br>2b. At least 521 sustainable aquaculture development plans prepared with specific measures for women farmers (2022 baseline: 0) (OP 5.2)[f]<br><br>2c. 5,260 ha of ponds equipped with wastewater treatment facilities (2022 baseline: 0) (OP 1.3.1)<br><br>2d. 50,000 mangrove saplings replanted (2022 baseline: 0) (OP 3.3.4)<br><br>2e. At least 35,000 farmers (at least 20% of whom are women) report increased financial literacy and greater knowledge of climate resilient and sustainable aquaculture (2022 baseline: 0) (OP 2.1.1, OP3.2)<br><br>2f. MMAF's aquaculture asset management information system operationalized (2022 baseline: system piloted) (OP 1.3.1) | 2a.–2f. Project progress reports and surveys | |
| 3. Shrimp aquaculture supply chain strengthened | 3a. At least 35,000 farmers (at least 20% of whom are women) report improved knowledge on handling practices, certification and traceability (STELINA), quality assurance systems, and food safety of aquaculture products (2022 baseline: 0) (OP 2.1.1)<br><br>3b. National regulations to support sustainable aquaculture issued by the Directorate General of Aquaculture (2022 baseline: 0) (OP 3.3.2)<br><br>3c. STELINA traceability system implemented in project area (2022 baseline: none) (OP 5.2.4)<br><br>3d. MMAF's geospatial database upgraded with sex-disaggregated data | 3a.–3d. Project progress reports; post-training assessments | |

| Results Chain | Performance Indicators | Data Sources and Reporting Mechanisms | Risks and Critical Assumptions |
|---|---|---|---|
| | and a checklist of information related to human welfare, including gender-integrated information<br>(2022 baseline: not applicable)<br>(OP 2.3.2) | | |

**Key Activities with Milestones**

**1. Quality and sustainability of inputs for shrimp production increased**

1.1 Review basic designs for the broodstock and multiplication centers[g] (Q2 2023)
1.2 Prepare detailed engineering designs for the broodstock and multiplication centers (Q4 2023)
1.3 Procure equipment and civil works, and supervise construction works (Q1 2025)
1.4 Conduct training programs for laboratory staff (Q2 2025)
1.5 Conduct training on GERPARI for farmers (Q2 2025)
1.6 Disseminate regulations and guidelines related to broodstock and feed production (Q4 2023)
1.7 Prepare O&M plans for the facilities built under the project and train MMAF staff and farmers (Q2 2025)

**2. Sustainable and climate adaptive aquaculture infrastructure and services developed**

2.1 Support smallholders in establishing farmers' groups (Q1 2026)
2.2 Prepare sustainable aquaculture development plans based on ecosystem; infrastructure, socio-economic, and institutional needs; and market demand (Q4 2025)
2.3 Prepare detailed engineering design and social and environmental safeguard documents for sustainable production ponds and associated infrastructure and mangrove replanting (Q4 2024)
2.4 Procure equipment and civil works packages (Q3 2025)
2.5 Supervise construction works (Q1 2026)
2.6 Conduct training programs on climate adaptive and sustainable aquaculture (Q1 2027)
2.7 Develop the asset management information system and prepare O&M plans for the facilities built under the project (Q2 2025)

**3. Shrimp aquaculture supply chain strengthened**

3.1 Conduct training programs for broodstock management, disease management, and food safety (Q4 2024)
3.2 Review and prepare recommendations for rationalizing and improving regulations for sustainable aquaculture (Q2 2024)
3.3 Operationalize STELINA traceability system (Q1 2023)
3.4 Conduct a campaign to inventory and register broodstock and feed producers, farmers, aggregators, and processors in the MMAF system (INDOGAP) (Q4 2025)
3.5 Upgrade MMAF geospatial database, including gender data, and analyze information to inform future investments in the industry (Q3 2023)

**Project Management Activities**

Complete baseline study (Q2 2023)
Design and roll out project monitoring and evaluation, and grievance redress system (Q2 2023)
Conduct project completion survey (Q4 2027)

**Inputs**

Asian Development Bank: ¥13,940,700,000 (loan) ($93.0 million equivalent)
Government of Indonesia: ¥1,666,165,425.14 ($11.1 million equivalent)

BAPPENAS = Ministry of National Development Planning, GERPARI = Gerakan Pakan Ikan Mandiri (national fish feed self-sufficiency program), ha = hectare, INDOGAP = Indonesian Good Aquaculture Practices, MMAF = Ministry of Marine Affairs and Fisheries, O&M = operation and maintenance, OP = operational priority, Q = quarter, R = risk, STELINA = *sistem telusur dan logistik ikan nasional* (national fish traceability and logistical system)..

[a] Government of Indonesia. 2019. *National Medium-Term Development Plan (RPJMN) 2020–2024*. Jakarta..
[b] The farmer exchange rate (NTP) is a proxy indicator for farmers' welfare and measures the ability of farmers to exchange products they sell with those they need for production and household consumption. An NTP of 100 means that the farmer's income is the same as their expenses. An NTP higher than 100 means that the farmer has a surplus income, while an NTP below 100 means that the farmer's expenses are greater than their income.
[c] Environmental sustainability will be measured by a matrix combining level of key effluents and ecosystem conditions aligned with MMAF standards..
[d] Gender-responsive and gender-inclusive features include, but are not limited to, lactation rooms, separate toilets for men and women, and separate prayer rooms for men and women.
[e] Output 2 is aligned with the climate-smart aquaculture approaches of the Food and Agriculture Organization of the United Nations: "sustainably increasing output productivity and efficiency within the sector; reducing the sector's vulnerability and increasing its resilience to change; and reducing and removing greenhouse gases from within the sector." *Climate-Smart Agriculture Source Book. Module 10: Climate Smart Fisheries and Aquaculture*.
[f] Specific measures for women farmers will be identified during project implementation. Women may need specialized training, equal access to land, financing and collateral, childcare and customized support to ease their workload as farmers and caregivers. Proper resources could help rural women to maximize economic opportunities; increase productivity; and improve food security, education, and healthcare, since women tend to reinvest in their households.
[g] The Oceanic Institute of Hawaii will conduct the review.

**Contribution to Strategy 2030 Operational Priorities**

Expected values and methodological details for all OP indicators to which this operation will contribute results are detailed in "Contribution to Strategy 2030 Operational Priorities" (accessible from the list of linked documents in Appendix 2). In addition to the OP indicators tagged in the design and monitoring framework, this operation will contribute results for

OP 3.3: People benefiting from strengthened environmental sustainability (5,210).

Source: Asian Development Bank.

## B. Monitoring

78. **Project performance monitoring.** The CPMU in coordination with PIUs will be responsible for all aspects of monitoring and evaluation, including (i) performance evaluation against project milestones, (ii) safeguards monitoring, (iii) financial commitments, (iv) discussion of financial management performance and financial management action plan, and (v) implementation of risk mitigating action plans. Reports on project achievements will be provided quarterly and summarized annually. Quarterly reports will contain updated contract awards and disbursements projections based on project performance review requirements. In addition, the consultants will develop, and the CPMU will approve, a project performance monitoring system (PPMS) based on existing PPMS and will include spatial visualization interface (GIS based).[24] The PIUs will conduct regular monitoring, using the same indicators and submit reports to CPMU and ADB.

79. **Compliance monitoring.** The status of compliance with loan covenants will be reviewed during each ADB review mission. Any non-compliance issues will be specified in the quarterly progress reports together with remedial actions.

80. **Safeguards monitoring.** The executing and implementing agencies will assign the PIU Safeguards Focal Persons on monitoring requirements for IEE/EMP, CDF, and IPPF implementation. The PIUs will submit semiannual safeguards monitoring reports to the CPMU. The CPMU supported by their consultants will prepare consolidated semiannual monitoring reports—one for environment and one for social safeguards (involuntary resettlement and indigenous people)—that describe progress of safeguards implementation, compliance issues, and corrective actions. Reports will be translated and posted on the project website, and the implementing agencies (through the PIUs) will make hard copies accessible to the public. Independent monitoring reports from the External Monitoring Agency for the CDF implementation will be prepared and submitted semiannually to EA and ADB for disclosure. Safeguards monitoring requirements including suggested monitoring report formats are in Appendix 10.

81. **Gender and social dimensions monitoring.** Regular monitoring of gender indicators/targets included in the DMF and the GESIAP will be done during project implementation. The PPMS will ensure that data disaggregated by sex is collected, analyzed, and reported on wherever relevant and will allow to monitor women's participation in all planning, construction and capacity building activities supported by the project. Progress reports on the implementation of the GESIAP will be submitted to ADB at least on a semiannual basis. Participatory monitoring of project impacts will be implemented at the midterm of the project including focus group discussions and interviews with women and adolescent girls who are direct beneficiaries of activities supported by the project to obtain both quantitative and qualitative data.

## C. Evaluation

82. An inception mission will be scheduled shortly after loan effectiveness. Implementation review missions will be held annually or more as needed and a midterm review mission towards its 3rd year of project implementation will be conducted. Within 6 months of physical completion of the project, the executing agency will submit a project completion report to ADB.

[24] ADB's project performance reporting system is available at http://www.adb.org/Documents/Slideshows/PPMS/default.asp?p=evaltool.

## D. Reporting

83. The executing agency will provide ADB with (i) quarterly progress reports in a format consistent with ADB's project performance reporting system; (ii) consolidated annual reports including (a) progress achieved by output as measured through the indicator's performance targets, (b) key implementation issues and solutions, (c) updated procurement plan, (d) updated progress of FM action plan, and (e) updated implementation plan for the next 12 months; (iii) semiannual safeguards monitoring reports (one for environment and one for involuntary resettlement); and (iv) a project completion report within 6 months of physical completion of the project. To ensure that the Project will continue to be both viable and sustainable, project accounts and the executing agency's audited financial statement together with the associated auditor's report, should be adequately reviewed. An outline of quarterly report progress format is documented in Appendix 11.

## E. Stakeholder Communication Strategy

84. The project will comply with the policy of transparency and accountability of the ADB Public Communications Policy (PCP) 2011 and the Access to Information Policy (AIP). To do so, it will establish a communications strategy that will ensure an efficient and continuous two-way communication with stakeholders with a focus on managing stakeholders' expectations during all phases of the project implementation. The strategy will follow the following approaches:

(i) **Stakeholders.** Critical stakeholders for the project include project-affected persons in general, and women and vulnerable groups. Other key stakeholders include but are not limited to executing and implementing agencies, government officials at national and sub-national levels, community-based organizations, civil society organizations, private sector entities, and development partners especially those working on similar program in the project areas.

(ii) **Disclosure.** CPMU and PIU will disclose on their respective websites all key project-related information, including the scope, cost, and financial and institutional arrangements of the project, project safeguard reports, project progress such as procurement and contract award, and the audited financial project financial statements. The project will also provide contact details of CPMU and PIUs focal persons.

(iii) **Communication focal persons**. CPMU and PIUs will be responsible for implementation and monitoring of information dissemination and disclosure of the project's components. CPMU and PIU shall also designate a focal person to identify, strategize, and coordinate such implementation and monitoring as well as being the custodian of all project information.

(iv) **Awareness-raising materials.** The project will at the minimum prepare: (a) a project fact sheet or project information booklet which contains details such as project's objectives, components, activities, timeline, the focal person's name and contact details, and grievance redress mechanism; (b) a project brief which summarizes all the project's details in a simple language and utilizing stories and infographics targeting a wider group of audience, including the poor and women. Both documents will be made in Indonesian and English languages and will be available for public in print at the project information desk, distributed during all stakeholders' consultations and outreach activities, and posted online on the ADB website. Other information materials may be developed for distinct stakeholder groups.

(v) **Channels.** For an effective dissemination and efficient use of resources, collaboration with other readily available channels should be highly prioritized, including but not limited to government websites both at national and subnational levels, government social media accounts, and ADB website and its other online platforms. All online platforms will be optimally utilized to ensure unrestricted public access to information and documents repository. Meanwhile, conventional methods will be used as appropriate to ensure that all interested stakeholders have access to information, including but not limited to: face-to-face communications during stakeholders' consultations and outreach; setting up project signage at the areas of civil works; displaying posters and banners at the relevant government offices; making project fact sheets and brief available at these offices; and re-using project information as interview materials, articles, and advertorials in media. The project will explore partnership with national and local print, electronic and digital media organizations to disseminate project's information. The project will also proactively seek opportunities to participate in local community activities and provide information about the project.

(vi) **Coordination.** The project through the focal persons will coordinate with relevant government agencies and development partners involved in the sector to ensure effective communication effort by avoiding overlaps and identity potential collaboration as relevant.

85. This strategy is presented in appendix 12. The matrix outlines project's communications context and outcomes, objectives, key messages, specific channels and activities, timeline of delivery, work responsibility and resource allocation.

## X. ANTICORRUPTION POLICY

86. ADB reserves the right to investigate, directly or through its agents, any violations of the Anticorruption Policy relating to the project.[25] All contracts financed by ADB shall include provisions specifying the right of ADB to audit and examine the records and accounts of the executing agency and all project contractors, suppliers, consultants, and other service providers. Individuals and/or entities on ADB's anticorruption debarment list are ineligible to participate in ADB-financed activity and may not be awarded any contracts under the project.[26]

87. To support these efforts, relevant provisions are included in the loan agreement and the bidding documents for the project.

## XI. ACCOUNTABILITY MECHANISM

88. People who are, or may in the future be, adversely affected by the project may submit complaints to ADB's Accountability Mechanism. The Accountability Mechanism provides an independent forum and process whereby people adversely affected by ADB-assisted projects can voice, and seek a resolution of their problems, as well as report alleged violations of ADB's operational policies and procedures. Before submitting a complaint to the Accountability Mechanism, affected people should try in good faith to solve their problems by working with the concerned ADB operations department. Only after doing that, and if they are still dissatisfied, should they approach the Accountability Mechanism.[27]

[25] ADB. Anticorruption Policy.
[26] ADB's Integrity Office web site: https://www.adb.org/integrity.
[27] ADB. 2012. Accountability Mechanism Policy. Manila.

## XII. RECORD OF CHANGES TO THE PROJECT ADMINISTRATION MANUAL

89. All revisions and/or updates during implementation should be retained in this section to provide a chronological history of changes to implemented arrangements recorded in the project administration manual, including revision to contract awards and disbursement s-curves.

## Project Implementation Plan

| Outputs and Activities | Remarks | Years | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2022 | | | | 2023 | | | | 2024 | | | | 2025 | | | | 2026 | | | | 2027 | | | | | |
| | | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | | |
| **Advance Actions** | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Institutional** | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Draft decree for establishment of central project management unit (CPMU) and project implementation unit (PIU) | | | X | | | | | | | | | | | | | | | | | | | | | | | | |
| Sign decree for establishment of CPMU and PIU | | | | X | | | | | | | | | | | | | | | | | | | | | | | |
| Train CPMU and PIU staff on ADB procedures (procurement, financial management [FM], and safeguards) | | | | X | X | | | | | | | | | | | | | | | | | | | | | | |
| **Recruitment** | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Prepare terms of reference and request for proposal for project management and technical consultant packages[a] | | | X | | | | | | | | | | | | | | | | | | | | | | | | |
| Conduct advance recruitment of project management and technical consultant packages | | | | X | X | X | | | | | | | | | | | | | | | | | | | | | |
| **Financial** | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Allocate budget in 2023 Budget Implementation List (DIPA) | | | | X | X | | | | | | | | | | | | | | | | | | | | | | |
| **Output 1: Quality and Sustainability of Inputs for shrimp production increased** | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **1.1 Broodstock and Multiplication Centers Capacity Increased** | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| Outputs and Activities | Remarks | Years | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2022 | | | | 2023 | | | | 2024 | | | | 2025 | | | | 2026 | | | | 2027 | | | | | |
| | | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | | |
| Review basic designs, covering climate and disaster proofing, and gender responsive and inclusive features, equipment, technology, training, operation and maintenance (O&M) | By Oceanic Institute of Hawaii | | | | | X | | | | | | | | | | | | | | | | | | | | | |
| Prepare detailed engineering designs (DED) | RTCs | | | | | | X | X | | | | | | | | | | | | | | | | | | | |
| Prepare involuntary resettlement, indigenous people, and environment safeguards screening | TRTA | X | X | | | | | | | | | | | | | | | | | | | | | | | | |
| Prepare Due Diligence Report (DDR) for land | TRTA | X | X | | | | | | | | | | | | | | | | | | | | | | | | |
| Prepare Initial Environment Examination (IEE) | TRTA<br>One IEE for all defined infrastructure subprojects | X | X | | | | | | | | | | | | | | | | | | | | | | | | |
| Prepare and obtain permits for environment (AMDAL, UPL/UKL or SPPL) | | | | | | | X | | | | | | | | | | | | | | | | | | | | |
| Administer Pertek (Technical Approval) for wastewater treatment plant (WWTP), as applicable | | | | | | | | X | | | | | | | | | | | | | | | | | | | |
| Prepare technical specification and bidding documents | | | | | | | | X | | | | | | | | | | | | | | | | | | | |
| Procure civil works | | | | | | | | X | X | | | | | | | | | | | | | | | | | | |

| Outputs and Activities | Remarks | Years | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2022 | | | | 2023 | | | | 2024 | | | | 2025 | | | | 2026 | | | | 2027 | | | |
| | | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 |
| Construct and supervise civil works | | | | | | | | | X | X | X | | | | | | | | | | | | | | |
| Prepare technical specifications and bidding documents for equipment | | | | | | | | | X | X | | | | | | | | | | | | | | | |
| Procure and install equipment | | | | | | | | | | X | X | X | X | | | | | | | | | | | | |
| Develop training modules for operation and maintenance of broodstock and multiplication centers (including equipment) and seed production to small scale hatcheries (HSRT) | Resource persons | | | | | | | X | X | | | | | | | | | | | | | | | | |
| Roll out the training programs to MMAF staff | | | | | | | | | X | X | X | | | | | | | | | | | | | | |
| Provide training to HSRTs on broodstock breeding protocols and Good Hatchery Practice (CPIB) | Through MMAF technical operating units (UPTs) | | | | | | | | X | X | X | | | | | | | | | | | | | | |
| Develop and roll out a marketing strategy to promote the centers to farmers | | | | | | | | | | X | X | X | | | | | | | | | | | | | |
| **Sustainable Feed Capacity Increased** | Combined with Global Environment Facility (GEF) activities | | | | | | | | | | | | | | | | | | | | | | | | |

| Outputs and Activities | Remarks | Years | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2022 | | | | 2023 | | | | 2024 | | | | 2025 | | | | 2026 | | | | 2027 | | | | | |
| | | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | | |
| Prepare modules and disseminate the feed self-sufficiency protocols and Self-sufficient Feed Systems (GERPARI) to small and medium feed suppliers and farmers | | | | | | | | X | X | | | | | | | | | | | | | | | | | | |
| Explore alternative shrimp feed sources to reduce reliance on fish catch and imported raw material | Proposed for GEF funding | | | | | | | | X | X | X | X | | | | | | | | | | | | | | | |
| Conduct training on market access for shrimp feed based on Seafood Task Force (STF) requirements and mass balance inspection protocols | Proposed for GEF funding | | | | | | X | X | X | | | | | | | | | | | | | | | | | | |
| Co-create system requirements for feed to shrimp tracking by Government and Industry (supported by roadmap and execution timeline – with links to National Strategy for Shrimp Aquaculture) | Proposed for GEF funding | | | | | | X | X | X | | | | | | | | | | | | | | | | | | |
| Support five supply chain pilot validation exercises to refine and improve feed to shrimp tracking system | Proposed for GEF funding | | | | | | | | | X | X | X | X | X | X | X | X | X | | | | | | | | | |
| Conduct pre- and post-project inspection by STF to understand STF requirements and confirm requirements have been met | Proposed for GEF funding | | | | | | | | | X | X | | | | | X | X | | X | X | | | | | | | |

| Outputs and Activities | Remarks | Years | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2022 | | | | 2023 | | | | 2024 | | | | 2025 | | | | 2026 | | | | 2027 | | | |
| | | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 |
| Conduct demonstrations on supply chain renovations of shrimp traceability, brood stock and hatchery facilities, controlled intensification of farms and product quality and safety controls in 5 buyer visits to renovated sites will inform business and marketing plans for greater market access | Proposed for GEF funding | | | | | | | | | | | X | X | | | X | X | | | X | X | | | | |
| **1.3 Disease and Environment Control Enhanced** | | | | | | | | | | | | | | | | | | | | | | | | | |
| Review the basic design of laboratories including climate and disaster proofing, gender responsive inclusive features, equipment, technology, training, O&M (following World Health Organization standards) | TRTA | | | X | | | | | | | | | | | | | | | | | | | | | |
| Prepare DED | State Budget (APBN) | | X | X | | | | | | | | | | | | | | | | | | | | | |
| Prepare involuntary resettlement, indigenous people, and environment safeguards screening | TRTA | X | | | | | | | | | | | | | | | | | | | | | | | |
| Prepare DDR | TRTA | X | X | | | | | | | | | | | | | | | | | | | | | | |
| Prepare IEE | TRTA<br>One IEE for all defined infrastructure subprojects | X | X | | | | | | | | | | | | | | | | | | | | | | |

| Outputs and Activities | Remarks | Years | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2022 | | | | 2023 | | | | 2024 | | | | 2025 | | | | 2026 | | | | 2027 | | | | | |
| | | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | | |
| Prepare and obtain permits for environment (AMDAL, UPL/UKL or SPPL) and monitor implementation | APBN | | | | X | | | | | | | | | | | | | | | | | | | | | | |
| Administer Technical Approval (Pertek) for WWTP, as applicable | | | | | X | | | | | | | | | | | | | | | | | | | | | | |
| Prepare technical specification and bidding documents | | | | X | | | | | | | | | | | | | | | | | | | | | | | |
| Procure civil works | | | | | X | X | | | | | | | | | | | | | | | | | | | | | |
| Construct and supervise civil works | | | | | | | X | X | X | | | | | | | | | | | | | | | | | | |
| Prepare technical specifications and bidding documents for equipment | | | | X | X | | | | | | | | | | | | | | | | | | | | | | |
| Procure mobile laboratories | | | | | X | X | | | | | | | | | | | | | | | | | | | | | |
| Procure and install equipment | | | | | | | X | X | X | | | | | | | | | | | | | | | | | | |
| Develop training modules to operate and maintain the modern laboratories including equipment | | | | | | | | X | X | | | | | | | | | | | | | | | | | | |

| Outputs and Activities | Remarks | Years | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2022 | | | | 2023 | | | | 2024 | | | | 2025 | | | | 2026 | | | | 2027 | | | |
| | | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 |
| Roll out training programs to (i) MMAF staff -Training of trainers (ToT); (ii) UPT and UPTD - laboratory management and operations, and disease surveillance and monitoring; (iii) farmers including HSRT - disease sampling, biosecurity and biosafety, and monitoring water quality, disease, and residue | | | | | | | | | X | X | X | | | | | | | | | | | | | | |
| Prepare modules and conduct workshops on (i) harmonization of testing methodology for UPT and UPTD; (ii) validation/ verification of test methods for UPT and UPTD; (iii) AMR control for UPT and UPTD; (iv) Shrimp breeding bioinformatics for UPT | | | | | | | | | | X | X | X | X | | | | | | | | | | | | |
| **Output 2: Sustainable and climate adaptive aquaculture infrastructure and services developed** | | | | | | | | | | | | | | | | | | | | | | | | | |
| **2.1 Farmer-Based Enterprise Developed and Strengthened** | | | | | | | | | | | | | | | | | | | | | | | | | |
| Select core farmers/groups who will receive infrastructure support and expansion farmers/groups who will get training only | | | | X | X | | | | | | | | | | | | | | | | | | | | |

| Outputs and Activities | Remarks | Years | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2022 | | | | 2023 | | | | 2024 | | | | 2025 | | | | 2026 | | | | 2027 | | | | | |
| | | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | | |
| Prepare modules on socialization and improvement of capacity of farmers for facilitators and ToT for extension workers/ facilitators | Rely on available extension workers with additional facilitators to be recruited as needed<br><br>In coordination with the MMAF center for training and extension | | | | | X | X | | | | | | | | | | | | | | | | | | | | |
| Conduct socialization for the establishment and strengthening of farmer-based enterprises (cooperatives, micro small and medium enterprises, etc. depending on the situation) | | | | | | | | X | X | X | | | | | | | | | | | | | | | | | |
| Prepare and roll out a training program for farmers covering financial literacy, good aquaculture practices, social and environment safeguards, sustainable aquaculture, coastal and mangrove management, strengthening and farmer institutional empowerment | | | | | | | | | | X | X | X | X | X | X | X | X | X | X | X | | | | | | | |
| Support farmer-based enterprises in getting legally established | | | | | | | | | | X | X | X | X | X | X | X | X | | | | | | | | | | |

| Outputs and Activities | Remarks | Years | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2022 | | | | 2023 | | | | 2024 | | | | 2025 | | | | 2026 | | | | 2027 | | | |
| | | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 |
| Support farmer-based enterprises and farmers groups in preparing Sustainable Aquaculture Development Plan | | | | | | | X | X | X | X | X | X | X | X | X | X | X | | | | | | | | |
| Facilitate preparation of proposals for farmer-based enterprises to access credits (micro credit or KUR, rural banks) | | | | | | | | | | | | | | X | X | X | X | X | X | X | X | X | | | |
| **2.2 Sustainable Aquaculture Production Facilities Developed** | | | | | | | | | | | | | | | | | | | | | | | | | |
| Develop detailed guidelines for sustainable aquaculture cluster | Based on PITAP and other guidelines | | | | X | X | | | | | | | | | | | | | | | | | | | |
| Upgrade basic design (prepared for UPT) and prepare DED for farmers ponds for sustainable aquaculture (cluster/individual ponds) including climate and disaster proofing, gender responsive and inclusive features and irrigation canals and drains rehabilitation; farm roads; and communal WWTP[b] | Supported by regional technical consultants<br><br>A tertiary canal block comprise 10 to 20 ponds. Each cluster to be provided with water treatment and other facilities | | | | | X | X | X | X | | | | | | | | | | | | | | | | |
| Prepare involuntary resettlement, indigenous people, and environment safeguards screening | Under TRTA for UPT ponds, under the project for farmers ponds | X | | | | X | X | X | | | | | | | | | | | | | | | | | |
| Prepare land acquisition and resettlement plan, IEE, IPP (depending on screening) | Under TRTA for UPT ponds, under the project for farmers ponds | X | | | | X | X | X | | | | | | | | | | | | | | | | | |

| Outputs and Activities | Remarks | Years | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2022 | | | | 2023 | | | | 2024 | | | | 2025 | | | | 2026 | | | | 2027 | | | | | |
| | | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | | |
| Prepare and obtain permits for environment (AMDAL, UPL/UKL or SPPL) and monitor implementation Technical Approval (Administer Pertek) for WWTP, as applicable | | | | | | X | X | X | X | | | | | | | | | | | | | | | | | | |
| Procure civil works for sustainable aquaculture ponds | | | | | | | | X | X | X | | | | | | | | | | | | | | | | | |
| Construct and supervise civil works | | | | | | | | | | X | X | X | X | | | | | | | | | | | | | | |
| Review and develop guidelines for O&M for sustainable aquaculture ponds and irrigation canals, drains, and roads (including pond equipment) | | | | | | | | | X | X | | | | | | | | | | | | | | | | | |
| Develop training modules for sustainable aquaculture ponds and irrigation canals, drains, and roads (including pond equipment) | | | | | | | X | X | | | | | | | | | | | | | | | | | | | |
| Strengthen farmers groups capacity in water management groups | | | | | | | | | | | | X | X | X | X | | | | | | | | | | | | |
| Prepare technical specifications and bidding documents for pond equipment | | | | | | | | X | X | X | X | X | | | | | | | | | | | | | | | |
| Procure and install equipment to modernize production facilities[c] | | | | | | | | | | X | X | X | X | X | X | X | | | | | | | | | | | |

| Outputs and Activities | Remarks | Years | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2022 | | | | 2023 | | | | 2024 | | | | 2025 | | | | 2026 | | | | 2027 | | | |
| | | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 |
| Conduct trainings for farmers for sustainable aquaculture ponds and irrigation canals, drains, and roads (including pond equipment) | | | | | | | | | | | | | | X | X | X | X | X | | | | | | | |
| Plant mangroves or other species at inlet/outlet or other locations | | | | | | | | | | | | X | X | X | X | X | X | X | X | | | | | | |
| Develop the asset management information system including an Android application for field surveys | Supported by the asset management consultant | | | | | | X | X | | | | | | | | | | | | | | | | | |

| Outputs and Activities | Remarks | Years | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2022 | | | | 2023 | | | | 2024 | | | | 2025 | | | | 2026 | | | | 2027 | | | | | |
| | | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | | |
| Register UPT assets and project financed assets into the asset management information system by: (i) extracting location of assets from existing areal imagery (LIDAR, satellite images etc.), (ii) training extension workers and field facilitators on the use of the android field survey application, (iii) training UPT and MMAF staff in operating the asset management information system, (iv) conducting field validation including asset conditions by field facilitators for UPT and core farmers/groups assets supported by the project, and (v) conducting annual survey to assess asset conditions and generate O&M budget requirements | | | | | | | | X | X | X | X | X | X | X | X | | | | | | | | | | | | |
| **2.3 Sustainable Aquaculture Production Practices Introduced** | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Support development of a national shrimp aquaculture strategy and marketing/ business plan | Funded by GEF through BAPPENAS | | | | | | | X | X | X | | | | | | | | | | | | | | | | | |

| Outputs and Activities | Remarks | Years | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2022 | | | | 2023 | | | | 2024 | | | | 2025 | | | | 2026 | | | | 2027 | | | | | |
| | | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | | |
| Socialize INDOGAP implementation including Good Aquaculture Practice (CBIB) to farmers and TOT to district agencies | | | | | | | | X | X | X | | | | | | | | | | | | | | | | | |
| Prepare training manual on sustainable shrimp farming with involvement of women | | | | | | | X | | | | | | | | | | | | | | | | | | | | |
| Train famers on (i) pond water quality, wastewater management, and cleaning technology; (ii) feed management; (iii) disease and biosecurity; and (iv) mangrove management and replanting | | | | | | | | | X | X | X | X | X | | | | | | | | | | | | | | |
| Conduct knowledge sharing and joint events to share good practices on conversion-free feed to shrimp supply chains | | | | | | | | | | | | | | | | | X | X | X | | | X | X | X | | | |
| **Output 3: Shrimp aquaculture supply chain strengthened** | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **3.1 Shrimp Handling and Traceability Improved** | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Prepare modules and disseminate good practices for certification and traceability (STELINA) | Coordinate with DG competitiveness for STELINA and fish quarantine for handling and PUSDATIN for ICT | | | | | | | X | X | X | X | X | X | X | X | X | | | | | | | | | | | |

| Outputs and Activities | Remarks | Years | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2022 | | | | 2023 | | | | 2024 | | | | 2025 | | | | 2026 | | | | 2027 | | | | | |
| | | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | | |
| Prepare and roll out training programs to farmers and extension workers on (i) food safety; (ii) shrimp handling, (iii) certification processes; (iv) quality assurance system and food safety of aquaculture products; and (v) CBIB, CPIB, CPPIB | | | | | | | | X | X | X | X | | | | | | | | | | | | | | | | |
| Facilitate registration of broodstock and feed suppliers, farmers, aggregators, and processors into the INDOGAP system and transactions in STELINA | | | | | | | | | | X | X | X | X | X | X | X | X | | | | | | | | | | |
| Monitor and provide continuous technical support to farmers (large and small-scale) to ensure they comply with STELINA registration requirements | | | | | | | | | | | | X | X | X | X | X | X | X | X | X | X | X | | | | | |
| Facilitate memorandum of understanding (MOU) between farmers-based enterprises with private sector (contract farming, technology provider, etc.) | | | | | | | | | | | | | X | X | X | X | X | X | X | | | | | | | | |
| Monitor performance of MOUs between private sector and farmers-based enterprises | | | | | | | | | | | | | X | X | X | X | X | X | X | | | | | | | | |

| Outputs and Activities | Remarks | Years | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2022 | | | | 2023 | | | | 2024 | | | | 2025 | | | | 2026 | | | | 2027 | | | |
| | | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 |
| Prepare technical specifications, procure equipment, and build facilities for post-harvest, processing, packaging, and logistics oriented at domestic and export markets | | | | | | | | | | | | | | X | X | X | X | X | | | | | | | |
| Upgrade server for INDOGAP and STELINA database for traceability data in value chain | | | | | | X | | | | | | | | | | | | | | | | | | | |
| Integrate information from STELINA and INDOGAP into “SATU DATA” MMAF platform | MMAF | | | | X | | | | | | | | | | | | | | | | | | | | |
| **Regulatory Framework and Systems for Shrimp Aquaculture Improved** | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3.2.1. Prepare quality standards for value chains | PMC to support | | | | | | X | X | | | | | | | | | | | | | | | | | |
| Review and rationalize regulations and incentive system (i.e., Hatchery with CPIB for seed; INDOGAP consist of CBIB (farmer), CPIB (hatchery) and CPPIB (Feed) only); and hatchery zonation area | PMC to support | | | | | | | X | X | X | | | | | | | | | | | | | | | |
| 3.2.3. Prepare regulations for the use of domestic superior shrimp broodstock and application of CPPIB in all feed mills | PMC to support | | | | | | | | X | X | | | | | | | | | | | | | | | |
| **Project Management and Capacity Building** | | | | | | | | | | | | | | | | | | | | | | | | | |

| Outputs and Activities | Remarks | Years | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2022 | | | | 2023 | | | | 2024 | | | | 2025 | | | | 2026 | | | | 2027 | | | | | |
| | | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | | |
| 3.3.1. Upgrade skills and knowledge of MMAF staff through training on sustainable aquaculture and technology, disease monitoring and control | | | | | | | | | X | X | X | X | X | X | X | X | X | X | | | | | | | | | |
| Undertake project supervision, coordination with Balai, UPT/UPTD, local governments, and reporting | PMC to support | | | | | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | | |
| Conduct independent gender-responsive monitoring, and strategic coordination to institutionalize sustainable aquaculture development nationwide | Continuous | | | | | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | | |
| Undertake project monitoring and evaluation (baseline, midterm and completion) for GEF co-financing and ADB | Through service providers | | | | | | | | | | | | | X | | | | | | | | | | | | | |
| Develop and maintain an integrated geospatial information system for shrimp aquaculture including gender disaggregated data | PMC to support | | | | | | X | X | | | | | | | | | | | | | | | | | | | |

[a] Includes project management consultant (PMC), 2 regional technical consulting packages, Ocean Institute of Hawaii package, 4 packages for external monitoring agency, and field facilitators.

[b] Model 1: Refer to JUKNIS 187/2020 for cluster + PITAP for canals/drain rehabilitation. Model 2: irrigation tertiary block management approach + PITAP for canals/drain rehabilitation with provision of communal WTP at the head of the tertiary or secondary canal (simple design) which could be built in (i) UPT land to supply tertiary blocks adjacent to UPT land, or (ii) other available government land (MMAF, Dinas, or village).

[c] Includes wastewater, power generation, water pumping, paddle wheel, generator, high-density polyethylene liner, paddle wheel, shrimp feed (grower and finisher), water pump, spiral hose, plastic hose, DO meter, pH meter, refractor salinometer, etc.

Source: Asian Development Bank.

## Theory of Change and Approach

1. **Objectives.** The Infrastructure Improvement for Shrimp Aquaculture Project (the project) will deliver an integrated assistance by addressing inputs, production, and post-harvest processes through infrastructure, capacity support, and value chain strengthening in selected provinces.[1] The project will be aligned with the following impacts: contribution of the fisheries sector to the national economy increased. The outcome is productivity, profitability, and environment sustainability of shrimp aquaculture increased.

2. The Project will help smallholders shrimp farmers improve productivity, sustainability, and profitability of shrimp aquaculture through three outputs: (i) quality and sustainability of inputs for shrimp production increased, (ii) sustainable aquaculture infrastructure and services developed, and (iii) shrimp aquaculture supply chain strengthened.

3. The Ministry of Marine Affairs and Fisheries (MMAF) through the Directorate General of Aquaculture will be the executing agency, which in its daily implementation will be carried out by the Central Project Management Unit (CPMU). Implementing agencies at the regional level will be the MMAF technical operating units (UPTs), which form the Project Implementing Units (PIUs) responsible for the implementation of field activities.

4. **Policy context and project rationale.** Indonesia's shrimp production in 2021 reached 707,951 tons, valued at Rp43.016 trillion.[2] The total area of shrimp pond in Indonesia is 679,448 hectares (ha), of which the traditional ponds have the most extensive land with 93% of the total area of 592,778 ha, but have the lowest contribution of only 17.4% of the total national shrimp pond production in 2021.[3] The area of semi-intensive ponds and intensive ponds is 7% of the total area of ponds, i.e 52,698 ha. The highest contribution to the national production is from semi-intensive ponds at 50.9%, and the second was from intensive ponds, which provided 31.7%. Productivity is 30 tons/ha/year for intensive systems, 10 tons/ha/year for semi-intensive systems, and only 0.6 tons/ha/year for traditional production.

5. There are constraints in all the aspects of the Indonesian shrimp aquaculture industry from inputs to marketing. Production of shrimp requires major inputs from seeds to feeds to water to equipment to technical know-how. Seed itself requires quality broodstock that can help ensure high health of seeds and therefore higher production. The use of feeds for shrimp entails a high level of quality, consistency of supply, and efficient distribution. The maintenance of health and growth among the cultured animals require high water quality, farm management skills, and in many cases, the help of diagnostic laboratories. Harvesting needs strict procedures to ensure the quality of the harvested shrimp. One of the most pressing problems is product quality. Indonesia, while being in the top five world producers of shrimp, is still at the bottom of the international product quality ranking. This quality problem can be traced back to lack of transparency of all sources of inputs, and farmers' reluctance to avail of certification from internationally accepted accreditation systems due to economic and social reasons.

6. **Problems and causes in shrimp farming.** Below are factors that constrain the shrimp value chain in Indonesia**:**

---

[1] Provinces include Bali, Banten, Central Java, East Java, Lampung, Nangro Aceh Drusalam and South Sulawesi.
[2] Direktorat Jenderal Penguatan Daya Saing KKP. 2022. Baseline Data Ekspor Udang.
[3] https://katadata.co.id/amp/maesaroh/berita/61af151e26b18/produksi-udang-indonesia-ditargetkan-tembus-2-juta-ton-di-2024.

(i) Shrimp disease caused by the natural vulnerability of vannamei shrimp to diseases. This is further aggravated by farmers' lack of skills and knowledge in disease avoidance and control.
(ii) Inadequate pond infrastructure resulting in lack of control over pond operations and low-quality pond water (which is amplified by untreated effluent from ponds).
(iii) Overly expensive and limited sources of high quality (Specific Pathogen Free - SPF) seeds.
(iv) Unavailability of adequate local quality feed ingredients.
(v) Lack of knowledge on pond management and product handling resulting to low productivity and poor product quality.
(vi) Sizable capital and operational cost requirements in shrimp farming. These pose serious obstacles for small farmers to shift to higher stocking densities so they would rather remain within the traditional farming category.
(vii) Many small farmers borrow their working capital (seeds, feeds, fertilizer, etc.) from intermediaries or aggregators. This can result to the price of the products at harvest being dictated by the intermediaries/aggregators, pushing down further the farmers' profit, if any.
(viii) Reluctance of most shrimp farmers to seek third party certification of their farming process and traceability of their products (which they still perceive as unnecessary and a burden). As a result, the quality of Indonesian shrimp exports remains at the cellar level.

7. **Proposed solutions.**

(i) Intensification of stocking density by upgrading the culture system from traditional to semi-intensive. This can be done by (a) providing necessary infrastructure and equipment, coupled with training to improve skills of farmers, and inculcating good aquaculture practices; (b) organizing adjacent farmers clusters into legal and functional entities and training them on preparation of business plans and how to avail of low-interest loans for capital and operating needs; (c) making low-interest loans from government and private financing institutions available to enable small farmers to shift to a higher level of farming intensity.
(ii) Revitalization of the shrimp value chain by (a) providing necessary support systems such as pathological laboratories; (b) upgrading MMAF's broodstock and multiplication centers to allow them to produce enough SPF seeds affordable to farmers; (c) supporting farmers to shift to sustainable production systems with functioning inlet and outlet canals and water effluent treatment facilities; (d) helping farmers form micro small and medium enterprises to increase economy of scale and access to finance.
(iii) Strengthening the shrimp value chain by (a) incentivizing farmers to use traceability systems such as the government's STELINA; (b) providing training on all aspects of shrimp aquaculture to upgrade farming skills of project beneficiaries; (c) socializing the concept of Good Agricultural Practices (INDOGAP), including Good Hatchery Practice (CPIB), Good Aquaculture Practice (CBIB), and Good Feed Manufacturing (CPPIB) to farmers with the view of eventually acquiring international quality certificates leading better acceptance of Indonesian shrimp products in the export markets. Standards need to be clearly established throughout the whole production process (from hatchery to feed to farming to post-harvest) as these are closely interrelated and failure in one will adversely affect the rest. Since each step along the production process is under the control of different individuals/entities, a logical step-by-step protocol must be followed.

8. **Theory of Change.** Refer to Annex A.

9. **Project Approach.** The following are the project outputs and the corresponding activities to achieve them.

**Output 1: Quality and sustainability of inputs for shrimp production increased**

**1.1 Broodstock and Multiplication Centers Capacity Increased**

10. One of the most pressing problems of the Indonesian shrimp industry is the severe shortage of SPF and Specific Pathogen Resistant seeds. Good quality seeds are also too expensive for small-scale shrimp farmers. Thus, these poor farmers turn to non-SPF (F2 or F3) seeds which are cheaper but are prone to disease and poor size at harvest.

11. To produce SPF shrimp fry, the change must start at the beginning of the production process. Only genetically pure, clean, and healthy *L. vannamei* broodstock should be used. These original breeders will be kept sterile and free from any kind of contamination for as long as necessary while they provide the eggs that will later grow into SPF shrimp fry. It is essential that facilities and equipment for such a purpose are appropriately designed, built, and operated by qualified and well-trained technicians hence, foremost experts at the Oceanic Institute will be tasked to review the design and determine the process of operation of the facility. From the broodstock center, eggs or nauplii will be moved to multiplication centers where they will be grown into shrimp fry that are ready for stocking into ponds. The designed production capacity for the broodstock center will be 500,000 breeders (250,000 pairs) per year. Particular attention will be given to environmental monitoring and possible effects, especially from effluent making the setting up of a wastewater treatment facility for both the broodstock center and all multiplication centers essential.

12. Intensive trainings will be conducted for those who will operate the centers. Once these structures have been completed, productive and pure SPF broodstock can be provided to qualified (with proper broodstock facilities) small-scale hatcheries (HSRT). SPF fry will also be distributed as part of the package of material aid to the project-formed clusters. In all cases, information regarding the availability of SPF fry at lower prices will be spread all over the archipelago. Nauplii can also be supplied to small basic hatchery operators to help spread the SPF fry to a larger market. The project will support both basic and more advanced HSRT hatcheries in improving their knowledge on production of SPF fry.[4] Prior to receiving project assistance, HSRT farmers who are prospective direct beneficiaries (core farmers) are trained in various types of implementation of CPIB. These HSRT farmers become lead farmers who will be required to transfer their knowledge to their group members and the surrounding HSRT (expansion farmers). The HSRT will serve as a knowledge transfer demonstration facility (field school). Each core beneficiary is required to transfer a minimum of 10 HSRT farmers. Activities proposed are the following:

(i) Review of basic designs, by Oceanic Institute, covering climate and disaster proofing, and gender responsive and inclusive features, equipment, technology, training, operation and maintenance (O&M).
(ii) Prepare detailed engineering designs.

[4] Nauplii produced from qualified broodstock in broodstock center (BC) or mulitplication center (MC) distributed by the nearest BC and MC to the location of the beneficiary HSRT Core Farmers. The selected core group must implement the provisions contained in the Technical Guidelines for HSRT beneficaries of Infrastructure Improvement for Shrimp Aquaculture Project.

(iii) Prepare involuntary resettlement, indigenous people, and environment safeguards screening.
(iv) Prepare Due Diligence Report for land.
(v) Prepare Initial Environment Examination (IEE).
(vi) Prepare and obtain permits for environment (AMDAL, UPL/UKL or SPPL).
(vii) Administer Pertek (Technical Approval) for wastewater treatment plant (WWTP), as applicable.
(viii) Prepare technical specification and bidding documents.
(ix) Procure civil works.
(x) Construct and supervise civil works.
(xi) Prepare technical specifications and bidding documents for equipment
(xii) Procure and install equipment .
(xiii) Develop training modules for operation and maintenance of broodstock and multiplication centers (including equipment) and seed production to HSRTs.
(xiv) Roll out the training programs to MMAF staff.
(xv) Provide training to HSRTs on broodstock breeding protocols and Good Hatchery Practice (CPIB).
(xvi) Develop and roll out a marketing strategy to promote the centers to farmers.

13. Sustainable Feed Capacity Increased. Feed to shrimp traceability enhanced with support from Global Environment Facility (GEF).

14. The feed supply chains in Southeast Asia are opaque and more reasonably could be referred to as a “black box.” Each ingredient carries with it liabilities of environmental harm, food safety, and labour and human rights abuse. Feed ingredients used by feed mills are not disclosed because the manufacturers claim intellectual property of the feed formula. The reality is that very little, or no oversight, is present for the feed supply chain. They are not only masked by the secretive nature of their ingredient formulations, but they also have no direct engagement with retail and/or food service companies that buy their products that their feed was used to grow. One of the major forms of protein included in feed formulations for shrimp is that of marine ingredients (fishmeal and oil). However, it is unclear what marine ingredients are used–claims of imported fish meal are not validated and the conventional means of procuring marine ingredients is through purchasing the non-marketable or non-edible marine organisms collected as bycatch in indiscriminate trawl fishing. In essence, the shrimp aquaculture sector has created a market for greater indiscriminate catch of marine organisms.

15. While the shrimp industry has seen some professionalization in terms of increased intensity and larger investments, most shrimp farmers are still small-scale and disconnected from major components of the supply chain. The barriers to greater feed accountability rest in government policy and oversight as well as supply chain organization and transparency and market pressures. The proposed GEF co-financing would fill a specific gap that could transform the sector in Indonesia.

16. Barriers to accountability in feed and scaling of seaweed aquaculture, and achieving corresponding environmental benefits, include the following:

(i) Limited traceability of farmed shrimp from processing plant to farm. Processing of farmed shrimp requires sorting of sizes and sorting of product quality for different markets. Because the shrimp industry is so fragmented, shrimp aggregator will combine many harvests from multiple farms to gain enough volume for sale to the processing plant. Because of this, traceability is absent from the processing plant to

the farm. To gain greater insight and create interventions to improve the environmental impact of feed ingredient supply chains, it is necessary to have a traceability system that provides clear tracking back to the farm. Once the farmer is identified, a feed tracking system can be developed and implemented.

(ii) Unmasking the shrimp and shrimp feed supply chains. As with the lack of traceability of shrimp products to shrimp farms, there is a need to engage the international market buyers to teach them that the systems and certifications they have demanded are not delivering and a renewed focus on the reality in supply chains is required. In many respects, certifications have moved from an intervention to promote greater stewardship to a scapegoat that can be blamed when supply chain problems emerge. The starkest example of this is the Best Aquaculture Practices certification in Thailand which is still being requested by buyers who fully recognize its failures to deliver on supply chain oversight. Unmasking the true conditions of the supply chain is necessary to effectively intervene for environmental gains. The unmasking, however, will go against the norms and many actors in the supply chain will be averse to this engagement unless stringent policy is developed and enforced and the right international market actors who want to know the truth are engaged.

(iii) Supply chain organization and oversight. Farmers are generally not aware of market demands. The intermediaries tend to shield farmers from knowledge about markets and pricing. The current system works best for the intermediaries and 'aggregators' and they are the key to unlocking the supply chain, but they are disincentivized to do so because they control the product flow and cash flow to and from the farmers. The intermediaries must be leveraged by processors, feed companies, international market actors, and the Indonesian national and local governments. The effort to organize the supply chain requires knowledge sharing and those that block this knowledge will need to change or be removed for the success of the project.

<u>Mitigation of Illegal, Unreported and Unregulated Fishing and Over-fishing in Indonesian Shrimp Feed Supply Chains</u>

17. The global and local challenge to the aquaculture sector is to create greater accountability in feed ingredient procurement. This is hampered by the (i) lower magnitude of shrimp aquaculture feed (and aquaculture feed more broadly) compared to poultry, swine and beef feeds; (ii) inability to create market incentives for better feeds produced with better feed ingredients, (iii) feed ingredient production is a "black box" with little to no accountability and no true verification of claims being made; and (iv) little to no traceability of shrimp products from processor back to farm.

18. The proposed GEF-supported output will benefit from multiple concurrent global targets to remove the opaqueness in feed supply chains and create a more accountable sector that is required to take responsibility for the environmental (conversion and overfishing) and social (forced and bonded labour, child labour and modern slavery) impacts of feed ingredient procurement.

19. Activities proposed (tentative) are the following:

(i) Prepare modules and disseminate the feed self-sufficiency protocols and Self-sufficient Feed Systems (GERPARI) to small and medium feed suppliers and farmers.

(ii) National Action Plan for Shrimp Aquaculture to adopt Aquaculture Management Area approach, including climate change mitigations and resiliency. Among others, this would also include advancing a research and development agenda in the national action plans. Transforming the shrimp aquaculture industry towards

sustainable pathways will require considerable research into new areas. This would include such areas as the development of quality seed, quality control, monitoring and testing facilities, alternative sources of protein for fishmeal, etc. A "R&D Agenda" could also explore private sector engagement to undertake "pre-competitive research.

(iii) Prepare marketing and business plan for renovated shrimp sector for greater magnitude of market reach.

(iv) Create a credible and functioning feed management system to connect shrimp feeds to shrimp products to satisfy growing international market demand, through: (a) capacity development related to market access through Seafood Task Force, (b) mass balance inspection protocol to validate feed to shrimp tracking, (c) shrimp feed action plan development (system requirements for feed to shrimp tracking co-created by Government and Industry, and supported by roadmap and execution timeline with links to National Action Plans for Shrimp Aquaculture), and (d) five supply chain pilot validation exercises to refine and improve feed to shrimp tracking system.

(v) Engage Indonesian shrimp industry leadership/associations with the Seafood Task Force by: (a) conducting pre-and post-project inspection by the Seafood Task Force, (b) ensuring feed/shrimp tracking program action plan is communicated/socialized and implemented at project sites, and (c) conducting buyer visits to renovated sites which will inform business and marketing plans for greater market access.

(vi) Develop and share knowledge products.

### 1.2 Disease and Environment Control Enhanced

20. For a long time, disease infestation in cultured shrimp has been the worst challenge faced by shrimp farmers both large and small-scale operators. At the early sign of disease, farmers should be able to bring the diseased samples to a nearby shrimp pathology laboratory to determine the type of disease and to receive advice on how to deal with it. However, the present number and locations of laboratories are few and distance is far. Even the analytical capacity of the present laboratories also varies. To help ease this severe problem, early disease detection followed by mitigation must be improved. More laboratories with higher analytical capacities need to be established and positioned at strategic points to make them easily accessible.

21. An increasingly intense level of shrimp farming (from traditional to semi-intensive) will produce more noxious effluent. Farmers must be taught how to manage their pond water and the effluent from these to avoid the occurrence of disease and reduce pollutive effects of farming in general. Those who will operate the laboratories must also go through intensive training to operate, as well as maintain, laboratory equipment to ensure accreditation status for the laboratories last long and consistently produce accurate results. To make sure that wastewater treatment ponds to be built will comply with the environment standard, Pertek or the technical approval needs to be obtained.

22. Biosecurity training will be conducted for farmers groups including HSRT who receive direct assistance from the project (core farmers). The training that will be given to key person farmers is in the form of training of trainers (ToT), demonstration plots, field school or on-the-job training. These key farmers will become lead farmers who will be given the task of transferring their knowledge to surrounding farmers (expansion farmers). One beneficiary is required to be able to transfer his knowledge to a minimum of 10 non-core farmers during the project period.

23. Activities proposed are the following:

(i) Review of the basic design of laboratories including climate and disaster proofing, gender responsive inclusive features, equipment, technology, training, O&M (following World Health Organization standards).
(ii) Prepare detailed engineering design.
(iii) Prepare involuntary resettlement, indigenous people, and environment safeguards screening.
(iv) Prepare due diligence report.
(v) Prepare IEE.
(vi) Prepare and obtain permits for environment (AMDAL, UPL/UKL or SPPL) and monitor implementation.
(vii) Administer Technical Approval (Pertek) for wastewater treatment plant, as applicable.
(viii) Prepare technical specification and bidding documents.
(ix) Procure civil works.
(x) Construct and supervise works.
(xi) Prepare technical specifications and bidding documents for equipment.
(xii) Procure mobile laboratory.
(xiii) Procure and install equipment .
(xiv) Develop training modules to operate and maintain the modern laboratories including equipment.
(xv) Roll out training programs to (a) MMAF staff (ToT); (b) UPT and UPTD on laboratory management and operations, and disease surveillance and monitoring; (c) farmers including HSRT on disease sampling, biosecurity and biosafety, and monitoring water quality, disease, and residue.
(xvi) Prepare modules and conduct workshops on (a) harmonization of testing methodology for UPT and UPTD; (b) validation/verification of test methods for UPT and UPTD; (c) antimicrobial resistance control for UPT and UPTD; and (d) shrimp breeding bioinformatics for UPT.

**Output 2: Sustainable Aquaculture Infrastructure and Services Developed**

### 2.1. Farmer-Based Enterprise Developed and Strengthened

24. To empower farmers who will be organized into clusters, they must be trained on how to be participative members of a group that will operate as a legal enterprise, having legal capacity and personality to get into contracts with other parties such as banks, private companies, suppliers, and the like. As such, they need to be trained in financial literacy, group dynamics, and work ethics. They also need to have a working knowledge in business plan preparation and project management to deal with financial capital providers.

25. The project will support establishment and strengthening of the core farmers groups. For each cluster, the project will develop a Sustainable Aquaculture Development Plan (SADP). The SADP will cover technical, social and environment aspects, financial and economic viability, and type of activities and procurement package for each group. The SADP will also serve as basis for the groups to access finance and explore partnership potential with the private sector.

26. The selected small-scale shrimp core farmer groups will be strengthened through a series of training/socialization activities and workshops on various aspects related to sustainable aquaculture, including the preparation of proposals for access to capital, market access, and facilitation of the formation of cooperatives/BUMD by involving women. Transfer of knowledge will

be provided to up to 30% of the total traditional shrimp farmers group (expansion farmer groups) in the same district.

27. Activities proposed are the following:

(i) Select core farmers/groups who will receive infrastructure support and expansion farmers/groups who will get training only.
(ii) Prepare modules on socialization and improvement of capacity of farmers for facilitators and ToT for extension workers/facilitators.
(iii) Conduct socialization for the establishment and strengthening of farmer-based enterprises (cooperatives, micro small and medium enterprises, etc. depending on the situation).
(iv) Prepare and roll out a training program for farmers covering financial literacy, good aquaculture practices, social and environment safeguards, sustainable aquaculture, coastal and mangrove management, and strengthening and farmer institutional empowerment.
(v) Support farmer-based enterprises in getting legally established.
(vi) Support farmer-based enterprises and farmers groups in preparing SADP.
(vii) Facilitate preparation of proposals for farmer-based enterprises to access credits (micro credit or KUR, rural banks).

### 2.2. Sustainable Aquaculture Production Facilities Developed

28. One of the serious issues in the Indonesian aquaculture shrimp industry is the lack of awareness on how to make the industry sustainable. The long-term view of sustainability is not yet deeply ingrained within the mindset of most industry players.

29. Sustainability involves many aspects of shrimp farming: from water source and pond design to selection of farm inputs and equipment to disposal of waste in any form to taking good care of the environment. The project will upgrade production facilities from traditional to semi-intensive production systems (including pond and cultivation equipment), equip ponds with communal water treatment facilities, connect production facilities to the electricity grid, and rehabilitate canals.

30. The project will assist small-scale shrimp farmers groups that are in one area/spread of ponds or one tertiary hydraulic system pond. Direct assistance to small-scale shrimp farmers group (core farmer group) will be in the form of renovation/upgrade of ponds, construction of communal WWTP, installation of group-based PLN electricity network, and rehabilitation of pond irrigation waterways (including mangrove replanting in those canals). Selected groups will be eligible for the full cluster package including equipment, while pond upgrading will be provided to selected farmers in other groups.

31. The design and layout of the reservoir and communal WWTP is adjusted to the local pond land conditions and will minimize change from the existing ponds alignment. Likewise, the installation of the PLN electricity network is adjusted to the needs of the local pond area.

32. Trainings designed to achieve sustainability will include subjects on operating sustainable ponds collectively and cooperatively, managing a water treatment facility, managing feeding programs, monitoring shrimp growth and health, cleaning lined ponds, and operating and maintaining paddlewheels and pumps. Training will be given to core farmers group. The key would be to encourage smooth cooperation among group members of a hydraulic group (cluster) through strengthening of their water management knowledge.

33. A special part in sustainability training will be the emphasis on maintenance and enhancement of mangroves. Mangrove ecosystems have been proven to be effective in cleansing effluent from ponds and protecting earthen infrastructure from erosion. To be eligible for infrastructure assistance, farmers will plant mangroves (*Avicennia spp.*) and other brackishwater vegetation such as *Nipah spp.* along waterways, shoreline, and embankments to help make their ponds sustainable. These plants can also prevent erosion which is expected to worsen due to rising tide levels as one of the effects of climate change.

34. To assist MMAF in better managing shrimp aquaculture assets, the project will develp an asset management information system. The project will develop an Android application to ease field surveys and regular updating of asset conditions. The project will help UPTs register all its assets, and those financed by the project, into the asset management information system. The introduction of the asset management information system will help better plan O&M and generate corresponding budgets. The asset management information system will also be linked to the farmers groups registry database to centralize all information into a single geospatial web-based information system.

35. Activities proposed are the following:

(i) Develop detailed guideline for sustainable aquaculture cluster.
(ii) Upgrade basic design (prepared for UPT) and prepare detailed engineering designs for farmers ponds for sustainable aquaculture (cluster/individual ponds), including climate and disaster proofing, gender responsive and inclusive features; irrigation canals and drains rehabilitation; farm roads; and communal WWTPs.
(iii) Prepare involuntary resettlement, indigenous people, and environment safeguards screening.
(iv) Prepare land acquisition and resettlement plan, IEE, indigenous peoples plan (depending on screening).
(v) Prepare and obtain permits for environment (AMDAL, UPL/UKL or SPPL), and monitor implementation Technical Approval (Administer Pertek) for WWTPs, as applicable.
(vi) Procure civil works for sustainable aquaculture ponds.
(vii) Construct and supervise civil works.
(viii) Review and develop guidelines for operation and maintenance for sustainable aquaculture ponds and irrigation canals, drains, and roads (including pond equipment).
(ix) Develop training modules for sustainable aquaculture ponds and irrigation canals, drains, and roads (including pond equipment).
(x) Strengthen farmers groups capacity in water management.
(xi) Prepare technical specifications and bidding documents for pond equipment
(xii) Procure and install equipment (wastewater, power generation, water pumping, paddle wheel, generator, high-density polyethylene liner, paddle wheel, shrimp feed (grower and finisher), water Pump, spiral hose, plastic hose, DO meter, pH meter, refractor salinometer, etc.) to modernize production facilities.
(xiii) Conduct trainings for farmers for sustainable aquaculture ponds and irrigation canals, drains, and road (including pond equipment).
(xiv) Plant mangrove or other species at inlet/outlet or other locations.
(xv) Develop asset management information system including an Android application for field surveys.
(xvi) Register UPT assets and project financed assets into the asset management information system by: (a) extracting location of assets from existing areal imagery

(LIDAR, satellite images, etc.), (b) training extension workers and field facilitators on the use of the Android field survey application, (c) training UPT and MMAF staff in operating the asset management information system, (d) conductomg field validation including asset conditions by field facilitators for UPT and core farmers/groups assets supported by the project, and (e) conducting annual survey to assess asset conditions and generate O&M budget requirements.

### 2.3. Sustainable Aquaculture Production Practices Introduced

36. After providing facilities designed for sustainability, the farmers would next need to acquire knowledge on how the practice of sustainable aquaculture is applied. Through training, they will understand how essential good aquaculture practices are to ensure efficiency and tenure of their livelihood. They will be schooled not only in all aspects of shrimp culture but also on how to improve their environment by planting more mangroves in strategic places of their neighborhood.

37. Several types of training/workshop/socialization are not only intended for core farmer groups but also for expansion farmer groups. Training methods or knowledge transfer for core farmers include demonstrations, field schools supported by UPTs.. For expansion farmers, several practical and efficient training methods will be used such as field schools, demonstrations, etc. By implementing several training methods (workshops and outreach programs), the target of 30% of the number of small-scale shrimp farmers is expected to be reached. Meanwhile, to achieve the target of 100% small-scale shrimp farmers with knowledge on INDOGAP, the project will disseminate information through digital technology.

38. Facilitators, assisted by lead farmers from the core groups, have an important role in informing, explaining, and facilitating shrimp farmers to adhere to INDOGAP. They will be encouraged to involve women in their enterprise and form groups that will concern itself with taking care and enhancing mangroves.

39. Activities proposed are the following:

(i) Socialize INDOGAP implementation including Good Aquaculture Practice (CBIB) to farmers and TOT to district agencies.
(ii) Prepare training manual on sustainable shrimp farming with involvement of women.
(iii) Train small-scale famers on (a) pond water quality, wastewater management, and cleaning technology; (b) feed management; (c) disease and biosecurity; and (d) mangrove management and replanting.

## Output 3: Shrimp Aquaculture Supply Chain Strengthened

### 3.1. Shrimp Handling and Traceability Improved

40. The following set of activities are vital to the long-term viability of the whole Indonesian shrimp industry as they aim to uplift the overall quality of Indonesian shrimp exports. As the awareness of food safety rise among consumers worldwide, the present requirements governing exports of seafood demand heavily towards transparency regarding food raw material and its sources, hygiene in processing and packaging, and the like. This can only be attained by tracing back the chain from what, where, and when the raw materials were sourced; to harvest handling process; then shrimp processing; and finally packing for export. This high level of food safety can be achieved only through transparency on raw materials and all through the whole gamut of the shrimp growing and processing business. To impart knowledge and rouse interest in farmers to

espouse traceability, intensive trainings will be conducted for farmers as well as extension workers on actual shrimp handling and food safety certification processes to assure the best possible quality of shrimp products.

41. To support these activities, improvements will have to be made on computer hardware and software that will serve the processing and data banking needs of STELINA and INDOGAP. Both these platforms will be merged into a synergistic unit (SATU DATA) to streamline information management. The project will also finance construction of post-harvest facilities for pond clusters.

42. Cluster farmers who receive direct assistance (core farmers) will be trained in various types of training related to sustainable and environmentally friendly aquaculture. These core farmers will become lead farmers who will be required to transfer their knowledge to expansion farmers. The pond cluster will become a demonstration pond for knowledge transfer (field school). Each core farmer is required to transfer a minimum of 10 expansion farmers. It is hoped that by multiplying this model, the target of 30% of traditional shrimp cultivators will be achieved.

43. Building up of joint undertakings with the private sector will also be encouraged. Help will be provided to farmer groups in getting into memorandums of understanding (MOUs) especially in terms of technology, input provision, and product marketing. The SADP will be the reference document for exploring potential partnership with third parties. In order to increase knowledge about sustainable and environmentally friendly shrimp farming technology, the project will facilitate an MOU with a feed company, while in terms of increasing capital and marketing for harvest shrimp, farmers are facilitated by aggregators.

44. Activities proposed are the following:

(i) Prepare modules and disseminate good practices for certification and traceability (STELINA).

(ii) Roll out training programs to farmers and extension workers on (a) food safety; (b) shrimp handling, (c) certification processes; (d) quality assurance system and food safety of aquaculture products; and (e) CBIB, CPIB, CPPIB.

(iii) Facilitate registration of broodstock and feed suppliers, farmers, aggregators, and processors into the INDOGAP system and transactions in STELINA.

(iv) Monitor and provide continuous technical support to farmers (large and small-scale) to ensure they comply with STELINA registration requirements.

(v) Facilitate MOU between farmers-based enterprises with private sector (contract farming, technology provider etc.).

(vi) Monitor performance of MOUs between private sector and farmers-based enterprises.

(vii) Prepare technical specifications, procure equipment, and build facilities for post-harvest, processing, packaging, and logistics oriented at domestic and export markets.

(viii) Upgrade server for INDOGAP and STELINA database for traceability data in value chain.

(ix) Integrate information from STELINA and INDOGAP into “SATU DATA” MMAF platform.

### 3.2. Regulatory Framework and Systems for Shrimp Aquaculture Improved

45. Policies will need to be streamlined to adopt to the attendant changes to improve the shrimp industry. There are several problems voiced out by farmers during the project socio-economic surveys that need to be addressed. Among these are regulations that must be improved

to help push the industry towards sustainable aquaculture.[5] There is a need to set the quality norms to make sure the value chain will not get disrupted at any one of the aspects of shrimp farming and marketing. Value chains should be consistent throughout the whole train of production activities from fry selection to packaging. Any break in the chain will reduce value or defeat the whole effort.

46. Activities proposed are the following:

(i) Prepare quality standards for value chains.
(ii) Review and rationalize regulations and incentive system (i.e., Hatchery with CPIB for seed; INDOGAP consist of CBIB (farmer), CPIB (hatchery) and CPPIB (Feed) only; and hatchery zonation area.
(iii) Prepare regulations for the use of domestic superior shrimp broodstock and application of CPPIB in all feed mills.

### 3.3. Project Management and Capacity Building

47. The Directorate General of Aquaculture will establish a Central Project Management Unit (CPMU). This CPMU will supervise the implementation of the project and coordinate with consultants, construction companies, concerned government offices, and local government units. It will also regularly monitor and report on the progress of the project in detail including GIS data that would include data on gender involvement.

48. Activities proposed are the following:

(i) Upgrade skills and knowledge of MMAF staff on sustainable aquaculture and technology, and disease monitoring and control.
(ii) Undertake project supervision, coordination (with Balai, UPT/UPTD, local governments), and reporting.
(iii) Conduct independent gender-responsive monitoring, and strategic coordination to institutionalize sustainable aquaculture development nationwide.
(iv) Undertake project monitoring and evaluation (baseline, midterm, and completion).
(v) Develop and maintain an integrated geospatial information system for shrimp aquaculture including gender disaggregated data.

[5] i) Peraturan Direktur Jenderal Perikanan Budidaya Nomor 14 Tahun 2022 tentang Petunjuk Teknis Pengelolaan Irigasi Tambak Partisipatif Tahun 2022.
ii) Direktur Jenderal Perikanan Budidaya Nomor 31/PER-DJPB/2021 tentang Petunjuk Teknis Penyaluran Bantuan Klaster Budidaya Udang Tahun 2021.
iii) Peraturan Direktur Jenderal Perikanan Budidaya Nomor 247/PER-DJPB/2021 tentang Petunjuk Teknis Bantuan Calon Induk Ikan Pada Direktorat Jenderal Perikanan Budidaya Tahun Anggaran 2022.
iv) Regulation of the Director General of Aquaculture Number 154/PER-DJPB/2019 concerning Technical Instructions for Management of Aquaculture Areas with an Ecosystem Approach.
v) Menteri Kelautan dan Perikanan Republik Indonesia Nomor 75/PERMEN-KP/2016 tentang Pedoman Umum Pembesaran Udang Windu (Penaeus Monodon) dan Udang Vaname (Litopenaeus Vannamei).
vi) Menteri Kelautan dan Perikanan Republik Indonesia Nomor 52/PERMEN-KP/2018 tentang Persyaratan dan Tata Cara Penerbitan Sertifikat Cara Penanganan Ikan yang Baik di Supplier.
vii) Menteri Kelautan dan Perikanan Republik Indonesia Nomor 57/PERMEN-KP/2018 tentang Laboratorium Kesehatan Ikan dan Lingkungan.
viii) Menteri Kelautan dan Perikanan Republik Indonesia Nomoer 43/PERMEN-KP/2019 tentang Organisasi dan Tata Kerja Balai Produksi Induk Udang Unggul dan Kekerangan.

Annex A

# THEORY OF CHANGE

THE INFRASTRUCTURE IMPROVEMENT FOR SHRIMP AQUACULTURE DEVELOPMENT PROJECT (IISAP)


Source: Asian Development Bank.

# List of Government of Indonesia Guidance Documents

## Guidelines and Regulations per Echelon at Ministry of Marine Affairs and Fisheries

| No | Topic | References[a] | | Name | Issuance Date | Weblink |
|---|---|---|---|---|---|---|
| | | Output | Sub-Output | | | |
| **I.** | **Directorate General of Aquaculture (DGA)** | | | | | |
| 1 | Technical guidelines to support aquaculture infrastructure by providing excavator | 2 | 2.2 | Peraturan Direktur Perikanan Budidaya Nomor 8 Tahun 2022 Tentang Petunjuk Teknis Penyaluran Bantuan Excavator | 2022 | https://kkp.go.id/an-component/media/upload-gambar-pendukung/DJPB/Juknis%202022/Juknis%20excavator%20tahun%202022_otentifikasi.pdf |
| 2 | Guidance on the coaching system for good fish raising practices/good fish cultivation methods | 2 | 2.2 | Peraturan Direktur Perikanan Budidaya Nomor 87 Tahun 2022 Tentang Pedoman Sistim Pembinaan Cara Pembesaran Ikan yang Baik/ Cara Budidaya Ikan yang Baik | 2022 | http://mfcepusluh.bpsdmkp.kkp.go.id/peraturan-direktur-jenderal-perikanan-budidaya-nomor-87-tahun-2022 |
| 3 | Guidance on information system on good fish raising practices/good fish cultivation methods | 2 | 2.2 | Peraturan Direktur Perikanan Budidaya Nomor 88 Tahun 2022 Tentang Sistim Informasi Cara Pembesaran Ikan yang Baik/ Cara Budidaya Ikan yang Baik | 2022 | http://mfcepusluh.bpsdmkp.kkp.go.id/keputusan-direktur-jenderal-perikanan-budidaya-nomor-88-tahun-2022 |
| 4 | Technical guidelines on insurance premiums for small farmers | 3 | 3.3 | Peraturan Direktur Perikanan Budidaya Nomor 277 Tahun 2021 Tentang Petunjuk Teknis Bantuan Pembayaran Premi Asuransi Perikanan BAgi Pembudidaya Ikan Kecil Tahung Anggaran 2022 (Pembudi Daya Ikan Kecil adalah Pembudi Daya Ikan Kecil yang melakukan usaha pembesaran udang, bandeng, nila, patin, dan lele dengan metode monokultur dan/atau polikultur dan menggunakan teknologi sederhana) | 2021 | https://kkp.go.id/an-component/media/upload-gambar-pendukung/DJPB/Juknis%202022/Perdirjen%20No%20277%20ttg%20Juknis%20APPIK%20TA%202022_otentifikasi.pdf |
| 5 | Technical guidelines for self-sufficient feed aid/ support | 1 | 1.3 | Peraturan Direktur Perikanan Budidaya Nomor 289 Tahun 2021 /PER-DJPB/ Tentang Petunjuk Teknis Penyaluran Bantuan Pemerintah Pakan Mandiri Oleh Unit Pelaksana Teknis Lingkup Direktorat Jenderal Perikanan Budidaya Tahun Anggaran 2022 | 2021 | https://kkp.go.id/an-component/media/upload-gambar-pendukung/DJPB/Juknis%202022/Juknis%20Bantuan%20Pakan%20Mandiri%20UPT%202022%20OTENTIFIKASI.pdf |
| 6 | Guidelines for good hatchery practices | 1,3 | 1.1<br>3.1 | Peraturan Direktur Perikanan Budidaya Nomor 13/PER-DJPB/ Tahun 2018 Tentang Petunjuk Pelaksanaan Cara Pembesaran Ikan Yang Baik | 2018 | https://kkp.go.id/an-component/media/upload-gambar-pendukung/DJPB/Data%20Lain%202020/no%2013%20th%202018%20Dit%20Produs%20Petunjuk%20Pelaksanaan%20Sertifikasi%20Cara%20Pembesaran%20Ikan%20yang%20Baik.pdf |
| 7 | Technical guidelines for fish and shrimp seed support/aid | 1 | 1.1 | Peraturan Direktur Jenderal Perikanan Budidaya Nomor 23/PER-DJPB/2021 tentang Petunjuk Teknis Bantuan Benih Ikan Tahun 2021 | 2021 | https://kkp.go.id/an-component/media/upload-gambar-pendukung/DJPB/Juknis%202021/PERDIRJEN%20 |

| No | Topic | References[a] | | Name | Issuance Date | Weblink |
|---|---|---|---|---|---|---|
| | | Output | Sub-Output | | | |
| | | | | | | No%2023%20ttg%20JUKNIS%20Bantuan%20Benih%20Tahun%202021.pdf |
| 8 | Technical guidelines for broodstock support/aid | 1 | 1.1 | Peraturan Direktur Jenderal Perikanan Budidaya Nomor 247/PER-DJPB/2021 tentang Petunjuk Teknis Bantuan Calon Induk Ikan pada Direktorat Jenderal Perikanan Budidaya Tahun Anggaran 2022 | 2021 | https://kkp.go.id/an-component/media/upload-gambar-pendukung/DJPB/Juknis%202022/Juknis%20Bantuan%20Calin%20TA%202022%20(3)%20OTEN.pdf |
| 9 | Technical guidelines for small scale hatchery facility support/aid | 1 | 1.1 | Peraturan Direktur Jenderal Budidaya Nomor 246/PER-DJPB/2021 tentang Petunjuk Teknis Bantuan Sarana dan Prasarana Unit Pembenihan Tahun Anggaran 2022 | 2021 | https://kkp.go.id/an-component/media/upload-gambar-pendukung/DJPB/Juknis%202022/Juknis%20No%20246%20ttg%20Bansarpras%20Unit%20Pembenihan%20TA%202022%20oten.pdf |
| 10 | Technical guidelines for pond revitalization support/aid | 2 | 2.1<br>2.2 | Peratuarn Direktur Jenderal Perikanan Budidaya Nomor 15 Tahun 2022 tentang Petunjuk Teknis Penyaluran Bantuan Sarana Revitalisasi Tambak Tahun 2022 (Kincir) | 2022 | https://kkp.go.id/an-component/media/upload-gambar-pendukung/DJPB/Juknis%202022/juknis%20bantuan%20sarana%20revit%20tambak%202022_otentifikasi.pdf |
| 11 | Technical guidelines for participatory pond irrigation management | 2 | 2.2 | Peraturan Direktur Jenderal Perikanan Budidaya Nomor 14 Tahun 2022 tentang Petunjuk Teknis Pengelolaan Irigasi Tambak Partisipatif Tahun 2022 | 2022 | https://kkp.go.id/an-component/media/upload-gambar-pendukung/DJPB/Juknis%202022/juknis%20pitap%20tahun%202022_otentifikasi.pdf |
| 12 | Technical guidelines for aquaculture facilities | 2 | 2.2 | Peraturan Direktur Jenderal Perikanan Budidaya Nomor 201/PER-DJPB/2021 tentang Petunjuk Teknis Penyaluran Bantuan Pemerintah Sarana Prasarana Budidaya Perikanan Tahun Anggaran 2021 (Seed, feed,pump, pipe, plastic lining, DO meter, Ph meter, refraktosalinometer) | 2021 | https://kkp.go.id/an-component/media/upload-gambar-pendukung/DJPB/Juknis%202021/Perdirjen%20No%20201%20Th%202021%20ttg%20Juknis%20Bansarpras%20Budidaya_otentifikasi.pdf |
| 13 | Guidelines for technical distribution of self-sufficient feed as government assistance by Technical Implementation Unit (UPT) in DGA for fiscal year 2021 | 1 | 1.2 | Direktur Jenderal Perikanan Budidaya Nomor 35/PER-DJPB/2021 tentang Petunjuk Teknis Penyaluran Bantuan Pemerintah Pakan Mandiri Oleh Unit Pelaksana Teknis Lingkup Direktorat Jenderal Perikanan Budidaya Tahun Anggaran 2021 | 2021 | https://kkp.go.id/an-component/media/upload-gambar-pendukung/DJPB/Juknis%202021/8.%20Draft%20Juknis%20Bantuan%20Pakan%20Mandiri%20UPT%202021%20bersih%20OTENTIFIKASI.pdf |
| 14 | Guidelines for technical distribution of feed machine and feed ingredients to produce self-sufficient fish feed for fiscal year 2021 | 1 | 1.2 | Peraturan Direktur Jenderal Perikanan Budidaya Nomor 39/PER-DJPB/2021 tentang Petunjuk Teknis Penyaluran Bantuan Mesin Pembuat Pakan dan Bahan Baku Pakan Mandiri Tahun Anggaran 2021 | 2021 | https://kkp.go.id/an-component/media/upload-gambar-pendukung/DJPB/Juknis%202021/11.%20Draft%20Juknis%20Bantuan%20Mesin%20dan%20Bahan%20Baku%20Tahun%202021%20bersih.pdf |

| No | Topic | References[a] | | Name | Issuance Date | Weblink |
|---|---|---|---|---|---|---|
| | | Output | Sub-Output | | | |
| 15 | Technical guidelines in distributing government BSF (Black Soldier Flies) pilot demonstration assistance for fiscal year 2021 | 1 | 1.2 | Direktur Jenderal Perikanan Budidaya Nomor 40/PER-DJPB/2021 tentang Petunjuk Teknis Penyaluran Bantuan Pemerintah Percontohan Budidaya Magot di Masyarakat Tahun Anggaran 2021 | 2021 | https://kkp.go.id/an-component/media/upload-gambar-pendukung/DJPB/Juknis%202021/Draft%20Juknis%20%20MAGOT%202021%20Edit%20Hukum%20Otentifikasi.pdf |
| 16 | Technical guidelines for distribution of shrimp cluster government assistance | 2 | 2.2 | Direktur Jenderal Perikanan Budidaya Nomor 187/PER-DJPB/2021 tentang Petunjuk Teknis Penyaluran Bantuan Klaster Budidaya Udang Tahun 2020 | 2020 | https://kkp.go.id/an-component/media/upload-gambar-pendukung/DJPB/Juknis%20BP%202020/JUKNIS%20KLASTER%202020%20No.187.pdf |
| 17 | Technical guidelines for distribution of shrimp cluster government assistance | 2 | 2.2 | Direktur Jenderal Perikanan Budidaya Nomor 31/PER-DJPB/2021 tentang Petunjuk Teknis Penyaluran Bantuan Klaster Budidaya Udang Tahun 2021 | 2021 | https://kkp.go.id/an-component/media/upload-gambar-pendukung/DJPB/Juknis%202021/Juknis%20klaster%20tahun%202021_otentifikasi.pdf |
| 18 | Technical guidelines for parent fish as government assistance | 1 | 1.1 | Peraturan Direktur Jenderal Perikanan Budidaya Nomor 247/PER-DJPB/2021 tentang Petunjuk Teknis Bantuan Calon Induk Ikan Pada Direktorat Jenderal Perikanan Budidaya Tahun Anggaran 2022 | 2022 | https://kkp.go.id/an-component/media/upload-gambar-pendukung/DJPB/Juknis%202022/Juknis%20Bantuan%20Calin%20TA%202022%20(3)%20OTEN.pdf |
| 19 | Technical guidelines for fish seed as government assistance for 2022 | 1 | 1.1 | Direktur Jenderal Perikanan Budidaya Nomor 248/PER-DJPB/2021 tentang Petunjuk Teknis Bantuan Benih Ikan Tahun Anggaran 2022 | 2021 | https://kkp.go.id/an-component/media/upload-gambar-pendukung/DJPB/Juknis%202022/PerDirjen%20No%20248%20ttg%20JUKNIS%20Bantuan%20Benih%20TA%202022.pdf |
| 20 | Technical guidelines for issuance of fish medicine registration certificate | 3 | 3.1 | Direktur Jenderal Perikanan Budidaya Nomor 283/PER-DJPB/2021 tentang Petunjuk Teknis Pedoman Pengujian Lapangan Dalam Rangka Penerbitan Sertifikat Pendaftaran Obat Ikan | 2021 | http://www.sibatik.kkp.go.id/web/wp-content/uploads/2016/10/Pedoman-Pengujian-Obat-Lapang.pdf |
| 21 | Technical guidelines for aquaculture facilities (peddle wheel and water pump) | 2 | 2.2 | Direktur Jenderal Perikanan Budidaya Nomor 33/PER-DJPB/2021 tentang Petunjuk Teknis Penyaluran Bantuan Sarana dan Prasarana Revitalisasi Tambak Tahun 2021 | 2021 | https://kkp.go.id/an-component/media/upload-gambar-pendukung/DJPB/Juknis%202021/juknis%20sarana%20tambak%20tahun%202021_otentifikasi.pdf |
| 22 | Technical instructions for revitalization of small-scale hatchery units | 1 | 1.1 | Direktur Jenderal Perikanan Budidaya Nomor 60/PER-DJPB/2020 tentang Petunjuk Teknis Bantuan Revitalisasi Unit Pembenihan Hatchery Skala Rumah Tangga Tahun 2020 | 2020 | https://kkp.go.id/an-component/media/upload-gambar-pendukung/DJPB/Juknis%20BP%202020/PerDirjen%20No.%2060%20ttg%20Juknis%20Revitalisasi%20Unit%20Pembenihan%20Hatchery%20Skala%20Rumah%20Tangga%20PDF.pdf |
| 23 | Technical instructions for management of | 2 | 2.3 | Regulation of the Director General of Aquaculture Number 154/PER-DJPB/2019 | 2019 | https://kkp.go.id/an-component/media/upload-gambar-pendukung/DitJaskel/publikasi%20materi/optimalisa |

| No | Topic | References[a] | | Name | Issuance Date | Weblink |
|---|---|---|---|---|---|---|
| | | Output | Sub-Output | | | |
| | aquaculture areas with an ecosystem approach | | | | | si-perikanan-budidaya/Nana%20Sarip%20Sumarna%20Udi%20Putra%20-%20Kebijakan%20KKP%20Terkait%20Pengelolaan%20Perikanan%20Budi%20Daya.pdf |
| 24 | Ban on the use of broodstock from ponds (must source from breeding program or imported broodstock to prevent disease spread) | 1 | 1.1 | Surat Edaran nomor 4575/DJPB/2019 tentang Larangan Penggunaan Induk Udang Asal dari Tambak | 2019 | https://kkp.go.id/an-component/media/upload-gambar-pendukung/BPIU2K%20Karangasem/Peraturan/SE%20DirjenPB%204575.pdf |
| 25 | Standard Operating Procedure - Shrimp Cultivation in Millennial pond. | 2 | 2.2<br>2.3 | Standar Operasional Prosedur Pembesaran Udang Vaname di Tambak Milenial (MSF) | 2020 | https://kkp.go.id/an-component/media/upload-gambar-pendukung/DJPB/SOP/sop%20msf.pdf |
| **II.** | **Ministry of Marine Affairs and Fisheries (MMAF)** | | | | | |
| 1 | Regulation on quality assurance system and safety of fishery products | 3 | 3.1<br>3.2 | MMAF Regulation No.19 of 2010 | 2010 | https://jdih.kkp.go.id/peraturan/per-19-men-2010.pdf |
| 2 | Regulation on fish cultivation business | 3 | 3.2 | Regulation of the MAFF of the Republic of Indonesia Number 49/Permen-KP/2014 | 2014 | https://www.regulasip.id/electronic-book/3620 |
| 3 | Regulation on fish feed | 1, 3 | | Menteri Kelautan dan Perikanan Republik Indonesia Nomor 55/PERMEN-KP/2018 tentang Pakan Ikan | 2018 | https://oss.kkp.go.id/download/bda9b-55-permen-kp-2018.pdf |
| 4 | Requirements and procedures for issuance of fish medicine business permits | 1 | | Peraturan Menteri Kelautan dan Perikanan Republik Indonesia Nomor Per 15/Men/20097 tentang Persyaratan dan tata cara Penerbitan Izin Usaha Obat Ikan | 2007 | https://jdih.kkp.go.id/peraturan/per-15-men-2007.pdf |
| 5 | Quarantine measures on importing fish medicine type of biological preparation into Indonesia | 1 | | Menteri Kelautan dan Perikanan Republik Indonesia Nomor 34/PERMEN-KP/2017 tentang Tindakan Karantina Terhadap Pemasukan Obat Ikan Jenis Sediaan Biologik Ke Dalam Wilayah Negara Republik Indonesia | 2017 | http://bkipm.kkp.go.id/bkipmnew/public/files/regulasi/34-permen-kp-2017-ttg-tindakan-karantina-ikan.pdf |
| 6 | Regulation, standards, and technical instructions on good fish medicine manufacturing practices, registration of fish medicine, import recommendation letter of fish medicine, letter for | 1 | 1.1<br>2.1<br>3.1 | Menteri Kelauran dan Perikanan Republik Indonesia Nomor 1/PERMEN-KP/2019 tentang Obat Ikan | 2019 | https://oss.kkp.go.id/download/e71b8-1-permen-kp-2019.pdf |

| No | Topic | References[a] | | Name | Issuance Date | Weblink |
|---|---|---|---|---|---|---|
| | | Output | Sub-Output | | | |
| | exporting fish medicine.<br>Reporting and monitoring process<br>CPOIB standard, forms, samples of certificates. | | | | | |
| 7 | Prohibition on importation of shrimp and natural feed from countries and/or transit countries affected by EMS and AHDN outbreaks | 1,2 | 1.1<br>1.3<br>2.1<br>2.3 | Peraturan Menteri Kelauran dan Perikanan Republik Indonesia Nomor 32/PERMEN-KP/2013 tentang Larangan Pemasukan Udang dan Pakan Alami dari Negara dan/Atau Negara Transit yang Terkena Wabah Early Mortality Syndrome Atau Acute Hepatopancreatic Necrosis Disease | 2013 | https://jdih.kkp.go.id/peraturan/32-permen-kp-2013.pdf?msclkid=02f49997b28b11ecb69c80a0823ad366 |
| 8 | Requirements for importing parent broodstock, broodstock, fish seed, and/or pearl core | 1 | 1.1 | Menteri Kelautan dan Perikanan Republik Indonesia Nomor 56/PERMEN-KP/2018 tentang Rekomendasi Pemasukan Calon Induk, Induk, Benih Ikan dan/atau Inti Mutiara | 2018 | https://kkp.go.id/an-component/media/upload-gambar-pendukung/BKIPM/REGULASI/Peraturan%20Menteri/56-permen-kp-2018%20Rekomendasi%20Pemasukan%20Calon%20Induk%2C%20Induk%2C%20Benih.pdf |
| 9 | Regulation on fish quarantine installation | 1 | 1.1 | Menteri Kelautan dan Perikanan Republik Indonesia Nomor 9/PERMEN-KP/2019 tentang Instalasi Karantina Ikan | 2019 | https://oss.kkp.go.id/download/41c59-9-permen-kp-2019-ttg-instalasi-karantina-ikan.pdf |
| 10 | General guidelines for growing Indonesian and Vannamei shrimp | 2 | 2.2<br>2.3 | Menteri Kelautan dan Perikanan Republik Indonesia Nomor 75/PERMEN-KP/2016 tentang Pedoman Umum Pembesaran Udang Windu (Penaeus Monodon) dan Udang Vaname (Litopenaeus vannamei) | 2016 | http://bkipm.kkp.go.id/bkipmnew/public/files/regulasi/75-permen-kp-2016-ttg-pedoman-umum-pembesaran-udang-windu.....pdf |
| 11 | Regulation on fish disease control (surveillance and monitoring, risk analysis, disease handling, emergency response) | 1 | 1.3 | Peraturan Menteri Kelautan dan Perikanan Republik Indonesia Nomor 13/PERMEN-KP/2019 tentang Pengendalian Penyakit Ikan | 2019 | https://jdih.kkp.go.id/peraturan/79b96-13-permen-kp-2019-ttg-pengendalian-penyakit-ikan.pdf |
| 12 | Regulation on control of fish and drug residuals, chemicals, and contaminants in consumption on fish cultivation activities | 1 | 1.3 | Peraturan Menteri Kelautan dan Perikanan Republik Indonesia Nomor 13/PERMEN-KP/2019 tentang Pengendalian Penyakit Ikan | 2019 | https://jdih.kkp.go.id/peraturan/79b96-13-permen-kp-2019-ttg-pengendalian-penyakit-ikan.pdf |
| 13 | Regulation on issuance requirement and procedures of certificate of good fish handling | 2,3 | 2.3<br>3.3 | Menteri Kelautan dan Perikanan Republik Indonesia Nomor 52/PERMEN-KP/2018 tentang Persyaratan dan Tata Cara Penerbitan Sertifikat Cara Penanganan Ikan yang Baik di Supplier | 2018 | https://jdih.kkp.go.id/peraturan/b62c9-52-permen-kp-2018.pdf |

| No | Topic | References[a] | | Name | Issuance Date | Weblink |
|---|---|---|---|---|---|---|
| | | Output | Sub-Output | | | |
| | practices in supplier (Aggregator) | | | | | |
| 14 | Requirements and procedures for issuing good fish handling certificate | 2,3 | 2.3<br>3.3 | Menteri Kelautan dan Perikanan Republik Indonesia Nomor 7/PERMEN-KP/2019 tentang Persyaratan dan Tata Cara Penerbitan Sertifikat Cara Penanganan Ikan yang Baik | 2019 | https://jdih.kkp.go.id/peraturan/b9c86-7.-r-permen-kp-persyaratan-dan-tata-cara-penerbitan-sertifikat-cpib-1-februari-2019-otentifikasi.pdf |
| 15 | Certification of good hatchery practices | 1, 3 | 1.1<br>3.1 | Menteri Kelautan dan Perikanan Republik Indonesia Nomor 35/PERMEN-KP/2016 tentang Cara Pembenihan Ikan yang Baik | 2016 | https://jdih.kkp.go.id/peraturan/35%20PERMEN-KP%202016.pdf |
| 16 | Good manufacturing practices certificate | 3 | 3.1 | Menteri Kelautan dan Perikanan Republik Indonesia Nomor 17/PERMEN-KP/2019 tentang Persyaratan dan Tata Cara Penerbitan Sertifikat Kelayakan Pengolahan | 2019 | https://oss.kkp.go.id/download/e07da-17-permen-kp-2019-ttg-persyaratan-tata-cara-penerbitan....pdf |
| 17 | Certificate HACCP (Hazard Analytical Critical Control Point) | 3 | 3.1 | Menteri Kelautan dan Perikanan Republik Indonesia Nomor 51/PERMEN-KP/2018 tentang Persyaratan dan Tata Cara Penerbitan Sertifikat Penerapan Program Manajemen Mutu Terpadu/Hazard Analysis and Critical Control Point | 2018 | https://oss.kkp.go.id/download/be3b2-51-permen-kp-2018.pdf |
| 18 | Technical instructions for distribution of facilities/infrastructure for the processing of mangrove derivative products in 2022 | 2 | 2.2 | Keputusan Menteri Kelautan dan Perikanan Republik Indonesia Nomor 12/SJ TAHUN 2022 tentang Petunjuk Teknis Penyaluran Bantuan Sarana/Prasarana Pegolahan Produk Turunan Mangrove Tahun 2022 | 2022 | https://jdih.kkp.go.id/peraturan/3585c-2022kepmen-kpsj12.pdf |
| 19 | Location of region-based shrimp cultivation development | 2 | 2.2 | Keputusan Menteri Kelautan dan Perikanan Republik Indonesia Nomor 101 Tahun 2021 tentang Lokasi Pengembangan Budidaya Udang Berbasis Kawasan | 2021 | https://jdih.kkp.go.id/peraturan/9c0ec-2021kepmen-kp101.pdf |
| 20 | Organization and procedure of Production Center for Superior Shrimp and Shells (BPIU2K Karangasem) | 1 | 1.1 | Menteri Kelautan dan Perikanan Republik Indonesia Nomoer 43/PERMEN-KP/2019 tentang Organisasi dan Tata Kerja Balai Produksi Induk Udang Unggul dan Kekerangan | 2019 | https://jdih.kkp.go.id/peraturan/aa634-43-permen-kp-2019-ttg-otk-balai-produksi-induk-udang-unggul.....pdf |
| 21 | Fish and environmental health laboratory | 1 | 1.3 | Menteri Kelautan dan Perikanan Republik Indonesia Nomor 57/PERMEN-KP/2018 tentang Laboratorium Kesehatan Ikan dan Lingkungan | 2018 | https://jdih.kkp.go.id/peraturan/a168b-57-permen-kp-2018.pdf |
| **III.** | **BKIPM (Fish Inspection, Quarantine and Quality Control Agency)** | | | | | |
| 1 | Guidelines for good fish quarantine | 1,2 | 1.1<br>2.1<br>2.3 | Kepala Badan Karantina Ikan Pengendalian Mutu dan Keamanan Hasil Perikanan Nomor 338/KEP-BKIPM/2014 tentang Perubahan atas Keputusan Kepala Badan KArantina Ikan, Pengendalian Mutu | 2014 | http://bkipm.kkp.go.id/bkipmnew/public/files/regulasi/SK%20Kepala%20Badan%20Nomor%20338%20tentang%20Perubahan%20Pedoman%20CKIB.pdf |

| No | Topic | References[a] | | Name | Issuance Date | Weblink |
|---|---|---|---|---|---|---|
| | | Output | Sub-Output | | | |
| | | | | dan Keamanan Hasil PErikanan Nomor 239/KEPBKIPM/2014 tentang Pedoman Cara Karantina Ikan yang Baik | | |
| 2 | Technical instructions for issuance of certificates for good fish handling practices in supplier | 3 | 3.1 | Keputusan Kepala Badan Karantina Ikan, Pengendalian Mutu, dan Keamanan Hasil Pekanan Nomor1 Tahun 2021 tentang Petunjuk Teknis Penerbitan Sertifikat Cara Penanganan dan Pengolahan Ikan yang Baik di Supplier | 2021 | http://www.bkipm.kkp.go.id/user_umum/00.3/01%20KEP%20BKIPM%202021%20Juknis%20Penerbitan%20Sertifikat%20CPIB%201.pdf |
| 3 | Technical instruction of quality and food safety certification in fish product (HC Export, HC Domestic and Traffic Certificate) | 3 | 3.1 | Kepala Badan Karantina Ikan, Pengendalian Mutu , dan Keamanan Hasil Perikanan Nomor 95/KEP-BKIPM/2020 tentang Petunjuk Teknis Sertifikasi Mutu dan Keamanan Hasil Perikanan | 2020 | https://kkp.go.id/an-component/media/upload-gambar-pendukung/BKIPM/SK%20KEPALA%20BADAN/95%20KEP%20BKIPM%202020%20Juknis%20Sertifikasi%20Mutu%20dan%20KHP.compressed_1.pdf |
| 4 | Implementation of traceability system in fish processing unit | 3 | 3.1 | Kepala Badan Karantina Ikan, Pegendalian Mutu, dan Keamanan Hasil Peikanan Nomor 170/PER-BKIPM/2019 tentang Penerapan Sistem Ketelusuran di Unit Pengolahan Ikan | 2019 | https://kkp.go.id/an-component/media/upload-gambar-pendukung/BKIPM/REGULASI/PeraturanKeputusan%20Kepala%20BKIPM/170%20PER%20BKIPM%202019%20Penerapan%20Sistem%20Ketertelusuran%20di%20UPI-1.pdf |
| **IV.** | **Technical Guidance** | | | | | |
| 1 | Vannamei shrimp cultivation technique from DGA | 2 | 2.2<br>2.3 | Teknik Budidaya Udang Vaname (Litopenaeus vannamei) | | https://kkp.go.id/an-component/media/upload-gambar-pendukung/DJPB_BBPBAP%20JEPARA/Juknis%20Udang%20Vaname.pdf |
| 2 | Technical Instruction for affordable fish feed with simple technology (DGA) | 1 | 1.2 | Petunjuk Teknis Teknik Pembuatan Pakan Murah dengan Teknologi Sederhana | 2017 | https://kkp.go.id/an-component/media/upload-gambar-pendukung/DJPB_BBPBAP%20JEPARA/FULL-PAKAN%20MANDIRI.pdf |

[a] Refer to IISAP Outputs & Sub-Outputs in Section C.
Source: Ministry of Marine Affairs and Fisheries.

**Guidelines/Information from Other Sources**

| No | Topic | References[a] | | Name | Issuance Date | Weblink |
|---|---|---|---|---|---|---|
| | | Output | Sub-Output | | | |
| I. | Ministry of Environment and Forestry (MOEF) | | | | | |
| 1 | List of businesses and/or activities required to have an analysis of environmental impacts, | 2 | 2.3 | MOEF Ministerial Decree No. 4 of 2021 | 2021 | http://jdih.menlhk.co.id/uploads/files/2021pmlhk004_menlhk_06082021103523.pdf |

| No | Topic | References[a] | | Name | Issuance Date | Weblink |
|---|---|---|---|---|---|---|
| | | Output | Sub-Output | | | |
| | environmental management efforts, and environmental monitoring efforts or a statement of ability to manage and monitor the environment | | | | | |
| 2 | License procedures for wastewater disposal through electronically integrated business licensing services | 2 | | Peraturan Menteri Lingkungan Hidup dan Kehutanan Republik Indonesia Nomor P.102/MENLHK/SETJEN/KUM.1/11/2018 tentang tata cara perizinan Pembuangan Air Limbah Melalui Pelayanan Perizinan Berusaha Terintegrasi Secara Electronik | 2018 | https://dpmptsp.pemkomedan.go.id/userfiles/dpmptspmedan/dpmptspwebaplikasi/files/JDIH/P.102-2018-PEIZINAN-PEMBUANGAN-AIR-LIMBAH.pdf |
| 3 | Regulation on electronically integrated business licensing services | 2; 3 | 2.1<br>2.3<br>3.2<br>3.3 | Government Regulation No. 24 of 2018 | 2018 | https://peraturan.bpk.go.id/Home/Details/82994/pp-no-24-tahun-2018 |
| 4 | Government regulation on implementation of risk-based licensing | 3 | 3.2 | Peraturan Pemerintah Republik Indonesia Nomor 5 Tahun 2021 tentang Penyelenggraan Perizinan Berusaha Berbasis Resiko | 2021 | https://peraturan.bpk.go.id/Home/Details/161835/pp-no-5-tahun-2021 |
| 5 | Regulation on implementation of the marine and fisheries sector | 2; 3 | 2.3<br>3.2 | Government Regulation No. 27 of 2021 | 2021 | https://peraturan.bpk.go.id/Home/Details/161858/pp-no-27-tahun-2021 |
| 6 | Regulation on quality assurance system and safety of fishery products and increasing added value of fishery products | 3 | 3.1 | Government Regulation of the Republic of Indonesia Number 57 of 2015 | 2015 | https://peraturan.bpk.go.id/Home/Details/5631#:~:text=PP%20No.%2057%20Tahun%202015,Hasil%20Perikanan%20%5BJDIH%20BPK%20RI%5D |
| II. | Indonesian National Standard Agency | | | | | |
| 1 | Parent broodstock class or specification for L. vannamei | 1 | | SNI 01.7253-2006. Induk Udang Vanname (*Litopenaeus vannamei*) kelas induk pokok | 2006 | http://kkp.go.id/an-component/media/upload-gambar-pendukung/DIT%20PERBENIHAN/SNI%20Perbenihan/SNI%20Udang%20Vaname/SNI%2001-7253-2006%20I%20Ud%20Vaname.pdf |
| 2 | Broodstock production indoor system | 1 | | SNI 8037. 1:2014. Udang vanname shrimp (*Litopenaeus vannamei* Boone 1931) Bagian 1, Produksi Induk model indoor | 2014 | http://kkp.go.id/an-component/media/upload-gambar-pendukung/DIT%20PERBENIHAN/SNI%20Perbenihan/SNI%20Udang%20Vaname/13778_SNI%208037.1-2014.pdf |
| 3 | Conformity Assessment Scheme for SNI in the Agriculture, Plantation, Livestock and Fisheries Sector. | 3 | 3.1<br>3.2 | National Standardization Agency Regulation No. 14 of 2019 concerning amendments to the Regulation of the National Standardization Agency No. 2 of 2019 concerning the Conformity | 2019 | https://peraturan.bpk.go.id/Home/Details/170979/peraturan-bsn-no-14-tahun-2019 |

| No | Topic | References[a] | | Name | Issuance Date | Weblink |
|---|---|---|---|---|---|---|
| | | Output | Sub-Output | | | |
| | | | | Assessment Scheme for SNI in the Agriculture, Plantation, Livestock and Fisheries Sector | | |
| 4 | L. vannamei shrimp fry production | 1 | | SNI 7311 – 2009. Produksi benih udang vanname (*Litopenaeus vannamei*) kelas benih sebar | 2009 | http://kkp.go.id/an-component/media/upload-gambar-pendukung/DIT%20PERBENIHAN/SNI%20Perbenihan/SNI%20Udang%20Vaname/SNI%207311-2009.pdf |
| 5 | L vannamei seed/fry specification | 1 | | SNI 01-7252-2006. Benih Udang Vanname (*Litopenaeus vannamei*) kelas benih sebar | 2006 | http://kkp.go.id/an-component/media/upload-gambar-pendukung/DIT%20PERBENIHAN/SNI%20Perbenihan/SNI%20Udang%20Vaname/SNI%2001-7252-2006%20Ben%20U%20Vaname.pdf |
| 6 | Commercial feed for L. vannamei seed production | 1 | | SNI 7813:2013. Pakan buatan untuk produksi benih udang vaname (*Litopenaeus vannamei*) | 2013 | http://kkp.go.id/an-component/media/upload-gambar-pendukung/DIT%20PERBENIHAN/SNI%20Perbenihan/4%20SNI%20Pakan%20Vaname%20New/11372_SNI%207813-2013.pdf |
| 7 | Commercial feed for L. vannamei shrimp | 1 | | SNI 7549:2009. Pakan Buatan untuk Udang Vaname (Penaeus Vannamei) | 2009 | https://qdoc.tips/sni-7549-2009-pakan-udang-vaname-pdf-free.html |
| 8 | Organoleptic and sensory testing instruction | 3 | | SNI 01-2346:2006. Petunjuk Pengujian Organoleptik dan atau sensori | 2006 | https://kupdf.net/download/sni-01-2346-2006-petunjuk-pengujian-organoleptik-dan-atau-sensori_59ae44b0dc0d60f00a568ede_pdf |
| 9 | Raw Peeled Frozen Shrimp−Part 2: Raw Material Requirement | 3 | | SNI 01-3457.1:2006. Udang kupas mentah beku | 2006 | https://kupdf.net/download/sni-3457-2014-udang-kupas-mentah-bekupdf_5b01a2dbe2b6f5917fe43b3d_pdf |
| III. | Reports and Journals | | | | | |
| 1 | Fishmeal and Fishoil | 1 | 1.2 | Fishmeal and Fishoil - Production and Trade Flows in EU | 2021 | https://www.eumofa.eu/documents/20178/432372/Fishmeal+and+fish+oil.pdf/d3c6e416-6b50-c68b-af61-799022da2404?t=1631084568023 |
| 2 | Risks of fish mortality and the use of wild-caught fish in feed for the aquaculture sector | 1 | 1.2 | Investing in Troubled Water | 2021 | http://changingmarkets.org/wp-content/uploads/2021/07/REPORT-Investing-in-Troubled-Waters_WEB-LIGHT.pdf |
| 3 | Traceability and sustainability of fish meal and fish oil on aquafeed industry | 1 | 1.2 | Analysis of Traceability and Sustainability of Fish Meal and Fish Oil on Aquafeed Industry in Indonesia | 2013 | http://eprints.undip.ac.id/67589/1/AI-2013-143135.pdf |
| 4 | Shrimp sourcing recommendation from Monteray Bay Aquarium in USA for Indonesia (Red Rank) | 1,2,3 | 1.1<br>1.2<br>1.3<br>2.2<br>3.1 | Monteray Bay Aquarium Seafood Watch, Giant Tiger Prawn, Whiteleg Shrimp Indonesia Ponds | 2015 | https://sfw-images.s3-accelerate.amazonaws.com/reports/S/MBA_SeafoodWatch_Indonesia_Shrimp_Report.pdf |
| 5 | Black Soldier Fly Larva cultivation as BSF flour in brand media | 1 | 1.2 | Budidaya Larva Black Soldier Fly (BSF) sebagai bahan Pembuatan Tepung Maggot pada Media Dedak | 2020 | http://repository.mapena.ac.id/64/ |

| No | Topic | References[a] | | Name | Issuance Date | Weblink |
|---|---|---|---|---|---|---|
| | | Output | Sub-Output | | | |
| 6 | Black Soldier Fly cultivation as protein alternative for fish feed | 1 | 1.2 | Koloni BSF Ungaran | | http://dlh.semarangkab.go.id/wp-content/uploads/MAS-DIDIK-bimtek-bsf.pdf |
| 7 | Alternative feed for Fisheries Development Peat Swamp Waters | 1 | 1.2 | Pakan Alternatif bagi Pengembangan Perikanan Perairan Raw Gambut | 2020 | https://kkp.go.id/an-component/media/upload-gambar-pendukung/DitJaskel/publikasi-materi-2/perairan-gambut/02.%20Persentasi%20Seminar%20Perairan%20Gambut%2012-6-2020-dikonversi.pdf |
| 8 | Crustacean diseases | 1, 2 | 1.1<br>1.3<br>2.1 | Diseases Listed by the OIE | | https://www.oie.int/fileadmin/Home/eng/Health_standards/aahc/current/chapitre_diseases_listed.pdf |
| 9 | SPF L. vannamei Broodstock | 1 | 1.1 | SPF L. Vannamei Broodstock Report | 2019 | https://shrimpinsights.com/report-series/vannamei-broodstock |
| 10 | Health management and biosecurity maintenance in white shrimp (*Penaeus Vannamei*) hatcheries in Latin America | 1 | 1.1 | FAO Fisheries Technical Paper No 450 | 2003 | https://www.fao.org/publications/card/en/c/047fa4a0-634e-52b0-89fe-c03b8d888ecc/ |
| 11 | Shrimp value chain in Indonesia and strategic approach to sustainable shrimp production in Indonesia | 1,2,3 | 1.1<br>1.2<br>2.1 | A Strategic Approach to Sustainable Shrimp Production in Indonesia - The case for improved Economics and Sustainability | 2019 | https://media-publications.bcg.com/BCG-A-Strategic-Approach-to-Sustainable-Shrimp-Production-in-Indonesia-Nov-2019.pdf |
| 12 | Indonesian good hatchery practices (certified hatcheries) | 1 | 1.2 | Unit Pembenihan Bersertifikat (Certified Hatchery) Aktif Per Nopember 2021 | 2021 | https://kkp.go.id/an-component/media/upload-gambar-pendukung/DJPB/Data%20Lain%202021/Unit%20Pembenihan%20Bersertifikat%20Per%20Nopember%202021%20(Public).pdf |
| 13 | Fishmeal production and protein source | 1 | 1.2 | OECD-FAO Agricultural Outlook 2018-2027 | 2018 | https://www.agri-outlook.org/commodities/Agricultural-Outlook-2018-Fish.pdf |
| 14 | ASC certification shrimp standard | 3 | 3.1 | Aquaculture Stewardship Council Standard for Shrimp | 2019 | https://www.asc-aqua.org/wp-content/uploads/2020/03/1.-ASC-Shrimp-Standard_v1.1_Final_ID_1402-1.pdf |
| 15 | BAP certification standards for farm | 2<br>3 | 2.1<br>2.2<br>3.1 | Best Aquaculture Practices Farm Standard | 2021 | https://www.bapcertification.org/Downloadables/pdf/PI%20-%20Standard%20-%20Farm%20Standard%20-%20Issue%203.0%20-%2001-March-2021-GSA.pdf |
| 16 | BAP certification standard for feed mills | 3 | 1.2<br>3.1 | Best Aquaculture Practices Standard for Feed Mills | 2020 | https://www.bapcertification.org/Downloadables/pdf/PI%20-%20Standard%20-%20Feed%20Mill%20Standard%20-%20Issue%203.0%20-%2015-June-2020-GSA.pdf |
| 17 | BAP certification standard for processing plant | 3 | 3.1 | Best Aquaculture Practices Standard for Processing Plants | 2020 | https://www.bapcertification.org/Downloadables/pdf/PI%20-%20Standard%20-%20Seafood%20Processing%20Standard%20- |

| No | Topic | References[a] | | Name | Issuance Date | Weblink |
|---|---|---|---|---|---|---|
| | | Output | Sub-Output | | | |
| | | | | | | %20Issue%205.1%20-%2016-November-2020-GSA.pdf |
| 18 | Shrimp disease | 2 | 2.1 | Acute Hepatopancreatic Necrosis Disease (AHPND): Virulence, Pathogenesis and Mitigation Strategies in Shrimp Aquaculture | 2021 | https://www.mdpi.com/2072-6651/13/8/524 |
| 19 | Eco-Certification for Shrimp Aquaculture | 2<br>3 | 2.1<br>3.1 | Diverse Perceptions on Eco-Certification for Shrimp Aquaculture in Indonesia | 2020 | https://www.mdpi.com/2071-1050/12/22/9387 |
| 20 | Traceability record form to enter USA | 3 | 3.2 | Pedoman Pengisian Form, Seafood Import Monitoring Program untuk Pemenuhan Persyaratan Ekspor Produk Perikanan Ke Amerika Serikat | 2017 | https://kkp.go.id/wp-content/uploads/2017/12/Pedoman-Pengisian-Form-SIMP-.pdf |
| 21 | Analysis of farmers partnerships | 3 | 3.1 | Analisis Usaha Tambak Udang Vaname (Studi Kasus Petani Mitra Antara PT.Pokphand Desa Suka Jadi Kecamatan Tanjung Beringin Kabupaten Serdang Bedagai) | 2019 | http://repository.umsu.ac.id/bitstream/123456789/6811/1/perpustakaan%20PDF.pdf |
| 22 | Vannamei shrimp cultivation technology | 2 | 2.3 | Profil Teknologi Budidaya Udang Vaname (*Litopenaeus vannamei*) Di Desa Kidang, Kabupaten Lombok Tengah | 2018 | https://media.neliti.com/media/publications/322353-profil-teknologi-budidaya-udang-vaname-l-568aa48f.pdf |
| 23 | Impact of development of shrimp farms | 2 | | Dampak Pengembangan Usaha Tambak Udang Terhadap Kesejahteraan Masyarakat Di Kecamatan Poto Tano | 2019 | http://repository.ummat.ac.id/465/2/COVER-BAB%20III.pdf |
| 24 | Productivity of Vannamei shrimp culture in super-intensive ponds | 2 | 2.3 | Produktivitas budidaya udang vaname (*Litopenaeus vannamei*) tambak superintensif di PT. Dewi laut aquaculture kabupaten garut provinsi jawa barat | 2018 | http://ejournal-balitbang.kkp.go.id/index.php/jkpt/article/download/7211/5893 |
| 25 | Profitability of growing Vannamei shrimp technology intensive | 2 | | Profitabilitas Pembesaran Udang Vannamei (*Litopenaues Vannamei*) Teknologi Intensif Pada PT Segara Indah Kecamatan Besuki Kabupaten Tulungagung Provinsi Jawa Timur | 2019 | http://repository.unitomo.ac.id/2189/1/Penelitian%20Udang%20Vannamei-PDF-JAN%202020.pdf |
| 26 | Vannamei shrimp culture (*Litopenaeus vannamei*) in different rearing systems | 2 | | Study Of Vaname Shrimp Culture (*Litopenaeus vannamei*) In Different Rearing System | 2017 | https://e-journal.unair.ac.id/JIPK/article/view/7624 |
| 27 | Maintenance of *Litopenaeus vannamei* with different percentage of feed | 2 | | The Maintenance of White Shrimp (*Litopenaeus vannamei*) With Different Percentage Of Feed | 2015 | https://media.neliti.com/media/publications/199011-the-maintenance-of-white-shrimp-litopena.pdf |
| 28 | Vannamei shrimp raised with semi-intensive system | 2 | | Studi performa udang vaname (*Litopenaeus vannamei*) yang dipelihara dengan sistem semi intensif pada kondisi air tambak dengan kelimpahan plankton yang berbeda pada saat penebaran | 2017 | https://jurnal.fp.unila.ac.id/index.php/bdpi/article/view/1618/1452 |

| No | Topic | References[a] | | Name | Issuance Date | Weblink |
|---|---|---|---|---|---|---|
| | | Output | Sub-Output | | | |
| 29 | Feed with Mannanoligosaccharides | 1 | 1.3 | Kinerja Pertumbuhan Udang Vaname (Litopenaeus *vannamei*) Yang Diberi Pakan Dengan Penambahan Mannanoligosakarida (Mos) | 2019 | https://digilibadmin.unismuh.ac.id/upload/8912-Full_Text.pdf |
| 30 | Traditional Vannamei shrimp farming and intensive farming | 2 | | The Comparative Analysis of The Traditional Vannamei Shrimp Farming and Intensive Farming in Situbondo Regency | 2018 | https://jepa.ub.ac.id/index.php/jepa/article/download/60/48 |
| 31 | Growth and production at intensive systems | 2 | | Level of Feed Utilization and Suitability of Water Quality and Estimation of Vaname Shrimp (*Litopenaeus vannamei*, Boone 1931) Growth and Production at Intensive System | 2008 | https://journal.ipb.ac.id/index.php/jippi/article/view/5645/4283 |
| 32 | Differences in cultivation systems on the growth rate of Vannamei shrimp | 2 | | Pengaruh perbedaan sistem budidaya terhadap laju pertumbuhan udang vaname (*Litopenaeus vannamei*) | 2017 | https://ejournal.undiksha.ac.id/index.php/IKA/article/download/20175/12205 |
| 33 | Feed convertion ratio and survival rate of *Litopenaeus vannamei* juvenile | 1 | 1.3 | The Influence of Carbohydrate Level and Feeding Frequency on Feed Convertion Ratio and Survival Rate of *Litopenaeus vannamei* Juvenile | 2014 | https://journal.ugm.ac.id/jfs/article/download/9150/6846 |
| 34 | Growth of Vannamei Shrimp (*Litopenaeus vannamei*) in intensive ponds | 2 | | Pertumbuhan Udang Vaname (*Litopenaeus vannamei*) Di Tambak Intensif | 2017 | https://ejournal.unib.ac.id/index.php/jurnalenggano/article/view/1359/1134 |
| 35 | Growth and survival rate of white shrimp | 2 | | Growth and Survival Rate of White Shrimp (*Litopenaeus vannamei*) at Different Density | 2017 | https://ejournal.stipwunaraha.ac.id/index.php/ISLE/article/view/295/335 |
| 36 | Vannamei shrimp pond suitability using GIS | 2 | | Study of Vaname Shrimp Pond Suitability (*Litopenaeus vannamei*) In Cijulang and Parigi, Pangandaran, West Java Using Geographical Information System Application | 2017 | http://jurnal.abulyatama.ac.id/index.php/tilapia/article/view/1943 |
| 37 | Growth of Vannamei shrimp postlarva | 1; 2 | | Growth Performance of Vaname Shrimp (*Litopenaeus vannamei*) Postlarva Given Artemia Frozen and Decapsulated | 2020 | https://ejournal.unsri.ac.id/index.php/jari/article/download/11337/5533 |
| 38 | Water quality in Vannamei shrimp cultivation | 2 | | Water Quality in Shrimp Cultivation Vaname (*Litopenaeus vannamei*) Bioflok System with Dense High Spreading In Alue Naga City Banda Aceh | 2021 | http://www.jurnal.unsyiah.ac.id/JKPI/article/view/24294/15218 |
| 39 | Financial Analysis of Vannamei shrimp cultivation | 2 | | Analisis Finansial Usaha Budidaya Udang Vaname (*Litopenaeus vannamei*) Pada Era New Normal Di Desa Boyantongo Kecamatan Parigi Selatan Kabupaten Parigi Moutong Provinsi Sulawesi Tengah | 2021 | https://ejournal.unsrat.ac.id/index.php/akulturasi/article/download/34624/32497 |

| No | Topic | References[a] | | Name | Issuance Date | Weblink |
|---|---|---|---|---|---|---|
| | | Output | Sub-Output | | | |
| 40 | Feeding method using index system in intensive ponds | 1 | 1.3 | Feeding Method for Whiteleg Shrimp (*Litopenaeus vannamei*) Using Index System in Intensive Pond | 2021 | https://journal.poltekkpbone.ac.id/index.php/jsalamata/article/download/28/16/ |
| 41 | Vannamei shrimp in biofloc systems with different carbon sources | 2 | | Performance of vaname shrimp *Litopenaeus vannamei* (boone, 1931) maintained in biofloc systems with different carbon sources | 2021 | https://journal.trunojoyo.ac.id/jurnalkelautan/article/download/9191/5921 |
| 42 | Growth of Vannamei shrimp larva with different feed dosage | 1; 2 | | Growth Of Vannamei Shrimp Larva (Litopenaeus vannamei) With Different Feed Dosage at The Shrimp Seed Center (BBU) Sabang Village, Galang District, Tolitoli Regency | 2021 | https://ojs.umada.ac.id/index.php/jago_tolis/article/download/166/155 |
| 44 | Water quality | 2 | | Review of Water Quality on The Feasibility of Teluk Pangandaran for Vaname (Litopenaeus vannamei) Cultivation | 2019 | http://jppik.id/index.php/jppik/article/view/138/132 |
| 45 | Environment friendly shrimp farming management in mangrove areas | 2 | | Good and Environmentally Friendly Shrimp Farming Management in Mangrove Area | 2002 | https://repository.seafdec.org.ph/bitstream/handle/10862/3558/3558-BaliaoDD2002-AEM35-id.pdf?sequence=3&isAllowed=y<br><br>https://journal.ibrahimy.ac.id/index.php/JSAPI/article/view/838 |
| 46 | Prawn hatchery design and operation | 1 | | A guide to prawn hatchery design and operation | 1984 | https://repository.seafdec.org.ph/bitstream/handle/10862/6021/AEM09.pdf?sequence=1&isAllowed=y |
| 47 | Prawn hatchery design and operation | 1 | | Prawn hatchery design and operation | 1984 | https://repository.seafdec.org.ph/bitstream/handle/10862/6022/AEM09-2ndEd.pdf?sequence=1&isAllowed=y |
| 48 | Vannamei Shrimp Cultivation: Semi-Intensive Pond with Wastewater Treatment Plant | 2 | | Budidaya Udang Vannamei: Tambak Semi Intensif dengan instalasi pengolahan air limbah (IPAL) | 2014 | http://awsassets.wwf.or.id/downloads/bmp_budidaya_udang_vannamei.pdf |
| 49 | Water quality in Vannamei shrimp culture with feed rotation system in intensive ponds | 2 | | Kajian kualitas air pada budidaya udang vaname (*Litopenaeus vannamei*) dengan sistem pergiliran pakan di tambak intensif | 2014 | https://bppbapmaros.kkp.go.id/wp-content/uploads/2016/07/FITA-008.pdf |
| 50 | Monitoring water quality in shrimp rearing ponds | 1 | 1.2 | Monitoring kualitas air pada tambak pembesaran udang vannamei (*Litopenaeus vannamei*) di situbondo, jawa timur | 2014 | https://e-journal.unair.ac.id/JIPK/article/view/11298 |
| 51 | Water Quality of Vannamei | 1 | 1.2 | Analisa Kualitas Air Budidaya Udang Vaname (*Litopenaeus vannamei*) di Tambak Rakyat | 2021 | https://journal.ibrahimy.ac.id/index.php/JSAPI/article/view/838/951 |

| No | Topic | References[a] | | Name | Issuance Date | Weblink |
|---|---|---|---|---|---|---|
| | | Output | Sub-Output | | | |
| | | | | Kontruksi Dinding Semen Dan Dasar Tambak Semen Di Pantai Konang, Kecamatan Panggul Kabupaten Trenggalek | | |
| 52 | Vannamei cultivation system in HDPE ponds | 2 | | Sistem budidaya udang vaname (L*Litopenaeus vannamei*) pada tambak hdpe dengan sumber air bawah tanah salinitas tinggi di kabupaten pasuruan | 2019 | https://kkp.go.id/an-component/media/upload-gambar-pendukung/BPBAP%20Situbondo/Artikel/02.%20Sistem%20Budidaya%20Udang%20Vaname%20pada%20Tambak%20HDPE.pdf |
| 53 | Accumulation of organic matter in intensive Vannamei shrimp ponds | 2 | | Pengaruh model pembuangan terhadap akumulasi bahan organik tambak intensif udang vaname (*Litopenaeus vannamei*) | 2018 | https://digilibadmin.unismuh.ac.id/upload/1757-Full_Text.pdf |
| 54 | Water quality management in Vannamei shrimp farming | 2 | | Manajemen kualitas air pada pembesaran udang Vannamei (*Litopenaeus vannamei*) dalam tambak budidaya intensif di balai layanan usaha produksi perikanan budidaya (bluppb) karawang, jawa barat | 2015 | https://repository.unair.ac.id/57934/2/PKL%20PK%20BP%20209%20-16%20Fah%20m.pdf |
| 55 | Shrimp farming with Biocrete technology | 2 | | Bertambak Udang dengan Teknologi BIOCRETE | 2011 | http://msp.fpik.ipb.ac.id/download/publikasi/bambang_widigdo/BUK2013_BWI.pdf |
| 56 | Differences in salinity on the growth and survival of Vannamei shrimp larvae | 2 | | Pengaruh perbedaan salinitas terhadap pertumbuhan dan kelangsungan hidup larva udang vannamei (*Litopenaeus vannamei*) pl -13 | 2018 | https://jurnal.unikal.ac.id/index.php/akuatika/article/download/614/517 |
| 57 | Difference of dosage of maggot flour (*hermetia illucens*) on the growth of Vannamei | 2 | | Pengaruh pemberian dosis tepung maggot (*hermetia illucens*) berbeda terhadap pertumbuhan udang vaname (*Litopenaeus vannamei*) dalam wadah terkontrol | 2021 | http://ejournal.unkhair.ac.id/index.php/kelautan/article/view/3878 |
| 58 | Semi-intensive shrimp culture technology in traditional shrimp ponds | 2 | | Penerapan teknologi budidaya udang (*Litopenaeus vannamei)* semi intensif pada tambak udang tradisional | 2020 | https://journal.ummat.ac.id/index.php/JCES/article/download/2372/pdf |
| 59 | Water quality on Vannamei shrimp productivity | 2 | | Pengaruh Variabel Kualitas Air terhadap Produktivitas Udang Vaname (*Litopenaeus vannamei*) di Kawasan Pertambakan Kabupaten Gresik, Jawa imur | 2013 | https://journal.bio.unsoed.ac.id/index.php/biosfera/article/viewFile/137/97 |
| 60 | Capacity of Water for Vannamei shrimp cultivation | 2 | | Daya Dukung Perairan Untuk Budidaya Udang Vannamei Sistim Semi Intensif Dalam Pemanfaatan Wilayah Pesisir Kabupaten Pemalang | 2015 | http://jppik.id/index.php/jppik/article/view/61/56 |
| 61 | Different sources of carbohydrates on water quality, proximate | 1 | 1.3 | Efek dari perbedaan sumber karbohidrat pakan terhadap kualitas air, komposisi proksimat dan kandungan glikogen | 2018 | https://ejurnalunsam.id/index.php/jisa/article/download/665/498 |

| No | Topic | References[a] | | Name | Issuance Date | Weblink |
|---|---|---|---|---|---|---|
| | | Output | Sub-Output | | | |
| | composition, and Glycogen content of Vannamei | | | juvenil udang vannamei *Litopenaeus vannamei* (Boone, 1931) | | |
| 62 | Vannamei shrimp cultivation group | 2 | 2.1 | Peningkatan Nilai Ekonomi Pada Kelompok Pembudidaya Udang Vaname (*Litopenaeus vannamei*) Laut Mina Budidaya Kabupaten Bireuen, Aceh | 2021 | https://journal.uhamka.ac.id/index.php/solma/article/download/6437/2536 |
| 63 | Disease and use of chemicals in aquaculture of Vannamei shrimp | 1 | 1.2 | Studi Penyakit Dan Penggunaan Bahan Kimia Pada Tambak Udang Vaname (*Litopenaeus vannamei*) Di Kabupaten Mamuju Tengah Menggunakan Liquid Chromatography Tandem-Mass Spectrometry Dan Diagnosa Molekuler | 2021 | https://ojs.balitbang.sulbarprov.go.id/index.php/maju/article/view/101/56 |
| 64 | Gender design features for Lactation rooms | | | | | http://www.cphi.upenn.edu/assets/user-content/documents/0908_Lactation%20Room_English.pdf. |

[a] Refer to IISAP Outputs & Sub-Outputs in Section C.
Source: Ministry of Marine Affairs and Fisheries

**IISAP Outputs & Sub-Outputs**

| **Factors for Production** | **Productivity Development** | **Value Chain Development** |
|---|---|---|
| Output 1:<br>Quality and Sustainability of Inputs for shrimp production increased | Output 2:<br>Sustainable and climate adaptive aquaculture infrastructure and services developed | Output 3:<br>Shrimp aquaculture supply chain strengthened |
| 1.1 Broodstock and Multiplication Centers Capacity Increased | 2.1 Farmer-Based Enterprise Development and Strengthening | 3.1 Shrimp Handling and Traceability Improved |
| 1.1.1 Review of basic design, by Institute of Ocean, covering climate and disaster proofing, and gender responsive and inclusive features equipment, technology, training, operation and maintenance | 2.1.1 Select core farmers/groups who will receive project physical support and non-core farmers/groups who will get training | 3.1.1 Prepare modules and disseminate good practices for handling, certification and traceability (STELINA) and coordination with Directorate of Logistic under DG PDSPKP to expand the STELINA implementation |
| 1.1.2 Prepare detailed engineering designs | 2.1.2 Prepare modules for facilitators, and training of trainers for extension workers/ facilitators for the socialization and training improving the capacity of farmers | 3.1.2 Prepare and roll out training programs to farmers and extension workers on (i) food safety; (ii) shrimp handling, (iii) certification processes; (iv) quality assurance system and food safety of aquaculture products; and (v) CBIB, CPIB, CPPIB |
| 1.1.3 Prepare involuntary resettlement, indigenous people, and environment safeguards screening | 2.1.3 Conduct socialization for establishment and strengthening of farmer-based enterprises (cooperatives, UMKM etc. depending on the situation) | 3.1.3 Facilitate registration of broodstock and feed suppliers, farmers, aggregators, and processors into the |

| Factors for Production | Productivity Development | Value Chain Development |
|---|---|---|
| Output 1:<br>Quality and Sustainability of Inputs for shrimp production increased | Output 2:<br>Sustainable and climate adaptive aquaculture infrastructure and services developed | Output 3:<br>Shrimp aquaculture supply chain strengthened |
| | | INDOGAP system and transactions in the MMAF's STELINA |
| 1.1.4 Prepare Due Diligence Report (DDR) for land | 2.1.4 Prepare and roll out a training program to farmers covering financial literacy, good aquaculture practices, social and environment safeguards; sustainable aquaculture, mangrove management, coastal and mangrove management; small-scale farmer group strengthening and farmer institutional empowerment | 3.1.4 Monitor and provide continuous technical support to farmers (large and small scale) to ensure they comply with STELINA registration requirements |
| 1.1.5 Prepare Initial Environment Examination (IEE) | 2.1.5 Support farmer-based enterprises in getting legally established | 3.1.5 Facilitate MOU between farmers-based enterprises with private sector (contract farming, technology provider etc.) |
| 1.1.6 Prepare and obtain permits for environment (AMDAL, UPL/UKL or SPPL) | 2.1.6 Support farmer-based enterprises and farmers groups in preparing Sustainable Aquaculture Development Plan | 3.1.6 Monitor performance of MOUs between private sector and farmers-based enterprises |
| 1.1.7 Administer Pertek (Technical Approval) for Wastewater Treatment Plant (WWTP), as applicable | 2.1.7 Facilitate preparation of proposals for farmer-based enterprises to access credits (KUR, rural banks) | 3.1.7 Prepare technical specifications and procure equipment and build facilities for post-harvest, processing, packaging, and logistics oriented at domestic and export markets |
| 1.1.8 Prepare technical specification and bidding documents | 2.2 Sustainable Aquaculture Production Facilities Developed | 3.1.8 Upgrade server for INDOGAP and STELINA database for traceability data in value chain |
| 1.1.9 Procure civil works | 2.2.1 Develop detailed guideline for sustainable aquaculture cluster | 3.1.9 Integrate information from STELINA and INDOGAP into "SATU DATA" MMAF platform |
| 1.1.10 Construction and supervision | 2.2.2 Upgrade basic design (prepared for UPT) and prepare detailed engineering designs for farmers ponds for sustainable aquaculture (cluster/individual ponds) including climate and disaster proofing, and gender responsive and inclusive features and irrigation canals and drains rehabilitation; farm roads, communal WWTP | 3.2 Regulatory Framework and Systems for Shrimp Aquaculture Improved |
| 1.1.11 Prepare technical specifications and bidding documents for equipment | 2.2.3 Prepare involuntary resettlement, indigenous people, and environment safeguards screening | 3.2.1 Prepare quality standards for value chains |
| 1.1.12 Procure and install equipment | 2.2.4 Prepare land acquisition and resettlement plan, IEE, IPP as needed (depending on screening) | 3.2.2 Review and rationalize regulations and incentive system (i.e., Hatchery with CPIB for seed, INDOGAP consist of CBIB (farmer), CPIB (hatchery) and CPPIB (Feed) only), hatchery zonation area |
| 1.1.13 Develop training modules for operation and maintenance of broodstock and multiplication centers (including equipment) and seed production to small scale hatcheries (HSRT) | 2.2.5 Prepare and obtain permits for environment (AMDAL, UPL/UKL or SPPL), and monitor implementation Administer Pertek (Technical Approval) for WWTP, as applicable | 3.2.3 Prepare regulations for the use of domestic superior shrimp broodstock and application of CPPIB in all feed mills |

| Factors for Production | Productivity Development | Value Chain Development |
|---|---|---|
| Output 1:<br>Quality and Sustainability of Inputs for shrimp production increased | Output 2:<br>Sustainable and climate adaptive aquaculture infrastructure and services developed | Output 3:<br>Shrimp aquaculture supply chain strengthened |
| 1.1.14 Roll out the training programs to MMAF staff | 2.2.6 Procure civil works for sustainable aquaculture ponds and irrigation canals, drains and road to shrimp ponds and WTP | 3.2.4 Prepare a National Action Plan for Shrimp Aquaculture adopting Aquaculture Management Area approach including climate change mitigation and resiliency |
| 1.1.15 Provide training on (i) broodstock breeding protocols to small and medium seed suppliers and hatcheries, and (ii) Good Hatchery Practice (CPIB) to farmers | 2.2.7 Construct and supervise civil works | 3.3 Project Management and Capacity Building |
| 1.1.16 Develop and roll out a marketing strategy to promote the centers to farmers | 2.2.8 Review and develop guideline for operation and maintenance for sustainable aquaculture ponds and irrigation canals, drains and road as well as pond equipment | 3.3.1 Recruit Project Management Consultants |
| 1.2 Sustainable Feed Capacity Increased | 2.2.9 Develop training modules for sustainable aquaculture ponds and irrigation canals, drains and road as well as pond equipment | 3.3.2 Establish Project Management Office and Project Implementation Unit |
| 1.2.1 Prepare modules and disseminate the feed self-sufficiency protocols and Self-sufficient Feed Systems (GERPARI) to small and medium feed suppliers and farmers | 2.2.10 Form and strengthen water management groups in managing hydraulic units | 3.3.3 Upgrade skills and knowledge of MMAF staff technical operation units on sustainable aquaculture and technology, disease monitoring and control |
| 1.2.2 Conduct research and development for viable feed alternatives to reduce reliance on fish catch and on imported raw material | 2.2.11 Prepare technical specifications and bidding documents for pond equipment | 3.3.4 Undertake project supervision, coordination with Balai, UPT/UPTD, local governments, and reporting |
| 1.2.3 Support development of self-sufficient shrimp feed formula using local ingredient applicable for shrimp farming affordable and of quality (algae, plankton, Microalga, and seaworm development) for HSRT | 2.2.12 Procure and install equipment (wastewater, power generation, water pumping, paddle wheel, generator, HDPE liner, paddle wheel, Shrimp Feed (grower and finisher), Water Pump, Spiral hose, Plastic hose, DO meter, pH meter, Refractor salinometer, etc.) to modernize production facilities. | 3.3.5 Conduct independent gender-responsive monitoring, and strategic coordination to institutionalize sustainable aquaculture development nationwide |
| 1.2.4 Conduct pilot demonstration of GERPARI (equipment, technical support) | 2.2.13 Conduct trainings for farmers for sustainable aquaculture ponds and irrigation canals, drains and road as well as pond equipment | 3.3.6 Undertake project monitoring and evaluation (midterm and completion) for GEF co-financing and ADB |
| 1.2.5 Conduct training on market access for shrimp feed based on Seafood Task Force (STF) requirements and mass balance inspection protocols | 2.2.14 Plant mangrove or other species at inlet/outlet or other locations following the pilot by MMAF | 3.3.7 Develop and maintain an integrated geospatial information system for shrimp aquaculture including gender disaggregated data |
| 1.2.6 Co-create, by Government and Industry, system requirements for feed to shrimp tracking (supported by roadmap and execution timeline – with links to National Strategy for Shrimp Aquaculture) | 2.3 Sustainable Aquaculture Production Practices Introduced | |
| 1.2.7 Support five supply chain pilot validation exercises to refine and improve feed to shrimp tracking system | 2.3.1 Socialize INDOGAP implementation including Good Aquaculture Practice (CBIB), and Good Feed Manufacturing (CPPIB) to farmers and training of trainers to district agencies | |

| Factors for Production | Productivity Development | Value Chain Development |
|---|---|---|
| Output 1:<br>Quality and Sustainability of Inputs for shrimp production increased | Output 2:<br>Sustainable and climate adaptive aquaculture infrastructure and services developed | Output 3:<br>Shrimp aquaculture supply chain strengthened |
| 1.2.8 Conduct pre- and post-project inspection by the STF to understand STF requirements and confirm requirements | 2.3.2 Prepare manual training on sustainable shrimp farming by involving women | |
| 1.2.9 Demonstrate supply chain renovations of shrimp traceability, brood stock and hatchery facilities, controlled intensification of farms and product quality and safety controls in 5 buyer visits to renovated sites will inform business and marketing plans for greater market access | 2.3.3 Train small-scale famers on (i) pond water quality and wastewater management and cleaning technology; (ii) feed management (iii) Disease and biosecurity; (iv) mangrove management and replanting | |
| 1.3 Disease and Environment Control Enhanced | 2.3.4 Form mangrove community groups | |
| 1.3.1 Review, by University of Arizona, the laboratories basic design including climate and disaster proofing, and gender responsive inclusive features, equipment, technology, training, O&M following World Health Organization standard | 2.3.5 Procure mangrove or other species seeds | |
| 1.3.2 Prepare detailed engineering design | 2.3.6 Replant 51 hectares of ecosystem | |
| 1.3.3 Prepare involuntary resettlement, indigenous people, and environment safeguards screening | 2.3.7 Accompany and empower mangrove community groups | |
| 1.3.4 Prepare DDR | 2.3.8 Conduct knowledge sharing and joint events to share good practices on conversion-free feed to shrimp supply chains | |
| 1.3.5 Prepare IEE | | |
| 1.3.6 Prepare and obtain permits for environment (AMDAL, UPL/UKL or SPPL), and monitor implementation | | |
| 1.3.7 Administer Pertek (Technical Approval) for Wastewater Treatment Plant (WWTP), as applicable | | |
| 1.3.8 Prepare technical specification and bidding documents | | |
| 1.3.9 Procure civil works | | |
| 1.3.10 Construct and supervise civil works | | |
| 1.3.11 Prepare technical specifications and bidding documents for equipment | | |
| 1.3.12 Procure mobile laboratory | | |
| 1.3.13 Procure and install equipment | | |
| 1.3.14 Develop training modules for operating and maintaining the modern laboratories including equipment | | |
| 1.3.15 Roll out training programs to (i) MMAF staff (Training of trainers); (ii) UPT and UPTD on laboratory management and operations, and disease surveillance and monitoring; (iii) farmers including HSRT with low biosecurity system and potential to disease risk on disease sampling | | |

| Factors for Production | Productivity Development | Value Chain Development |
|---|---|---|
| Output 1:<br>Quality and Sustainability of Inputs for shrimp production increased | Output 2:<br>Sustainable and climate adaptive aquaculture infrastructure and services developed | Output 3:<br>Shrimp aquaculture supply chain strengthened |
| and handling for shrimp, biosecurity and biosafety, and monitoring water quality, disease, and residue | | |
| 1.3.16 Prepare modules and conduct workshops on (i) harmonization of testing methodology to UPT and UPTD; (ii) Validation / verification of test methods to UPT and UPTD; (iii) AMR control to UPT and UPTD; (iv) Shrimp breeding bioinformatics to UPT | | |

Source: Ministry of Marine Affairs and Fisheries.

**Sustainable Aquaculture Development Plan Template**

# xxx Subdistrict, xxx District, xxx Province

Currency Equivalents
(as of {day month year})
{The date of the currency equivalents must be within 2 months from the date on the cover.}

| | | |
|---|---|---|
| Currency unit | – | {currency name in lowercase} {(Symbol)} |
| {Symbol}1.00 | = | {SDR} {€} {£} {¥}{ } {or} $[ ] |

## ABBREVIATIONS

| | | |
|---|---|---|
| {AAA} | – | {spell out (capitalize only proper names)} |
| {BBB} | – | {spell out} |
| {CCC} | – | {spell out} |

{Place two line spaces between components on this page. Delete heads and tables that are not needed.}

## {WEIGHTS AND MEASURES}

{If three or fewer units are to be defined, no need to create this section; instead, include them in the abbreviations list.}

| | | |
|---|---|---|
| {symbol 1 (full name 1)} | – | {Definition 1} |
| {symbol 2 (full name 2)} | – | {Definition 2} |
| {symbol 3 (full name 3)} | – | {Definition 3} |
| {symbol 4 (full name 4)} | – | {Definition 4} |

## {GLOSSARY}

| | | |
|---|---|---|
| Sustainable Aquaculture Cluster | – | A cluster is defined as a group of ponds or hydraulic unit that are served by a common water system (irrigation canal and drain) |
| {Term 2} | – | {Definition 2} |
| {Term 3} | – | {Definition 3} |

## NOTE{S}

The fiscal year (FY) of the Government of {name of borrower} {and its agencies} ends on {day month}. "FY" before a calendar year denotes the year in which the fiscal year ends, e.g., FY2019 ends on {day month} 2019. {If FYs are not referred to in the text, delete this note.}

(i) In this report, "$" refers to United States dollars {If a second $ currency is referred to in the text, e.g., NZ$ or S$, add: unless otherwise stated. In the text, use "$" for United States dollars and the appropriate modifier, e.g., NZ$ or S$, for other currencies that use the "$" symbol.}

Contents

{Make sure that headings and titles are identical to those in text.}

**Page**

**Legend**
black text without brackets = mandatory standard wording
red text = instructions for writer

{Read and delete:
(i) This template is for subprojects proposed for financing under the IISAP. It is the template user's responsibility to identify and succinctly include essential information beyond the items prescribed by the template.
(ii) The template uses "project" as a general term for IISAP.
(iii) Revise wording as appropriate.}

# I. CLUSTER PROFILE

## A. Physical, Socio Economic, and Aquaculture Practices Conditions

49. **Geophysical conditions.** {Provide an overview of the area, terrain, soil quality, climate, water availability and quality, climate change, disaster risk, biodiversity and environmental conditions, and existing infrastructure in two paragraphs maximum}

50. **Cluster Map.** {Insert a map showing key cluster information: administrative boundaries; topography, existing infrastructure, land cover/land use; market and other key information deemed relevant}

51. **Socioeconomic conditions.** The socio-economic profile of the cluster is presented in Table 1.

**Table 1 Socio-Economic Profile of Sub-Project Cluster**

| **Indicator** | |
|---|---|
| Number of farmers in the cluster | |
| Type of partnership ( | cooperative, farmers group, etc |
| Range of poverty incidence (%) | |
| Range of income (Rp/month) in the group | |
| Main commodities produced | |
| Gender and disability | |
| {adjust the items as relevant} | |

{Either define abbreviations within the table or list them alphabetically and define them below the table. Use a consistent approach and do not define some in the table and others below the table.}
Source: {provide source of information with full title of the document and links}

## B. Mapping of Constraints for Value Chain Improvement

52. {Fill the summary list of weaknesses, needs, and opportunities for investment in the value chain in the cluster and provide narrative on the rationale to improve the cluster}

**Table 3 Mapping Value Chain Constraints and Opportunities**

| **Indicator** | Description Of Constraints and Opportunities |
|---|---|
| Aquaculture practices | Traditional, semi-intensive, intensive etc |
| Access to water services | Irrigation infrastructure, water quality etc |
| Access to technology | |
| Access to extension worker support | |
| Access to finance | |

| **Indicator** | Description Of Constraints and Opportunities |
|---|---|
| Access to inputs | |
| Post-harvest practices | |
| Post-harvest infrastructure | |
| Other value chain elements | |
| {adjust the items as relevant} | |

{Either define abbreviations within the table or list them alphabetically and define them below the table. Use a consistent approach and do not define some in the table and others below the table.}
Source: {provide source of information with full title of the document and links}

## II. CLUSTER DEVELOPMENT PLAN

53. **Proposed business model.** {Describe in two paragraphs maximum the proposed business model(s) for the cluster, whether it will focus only on production, or if it will be integrated from inputs to post-harvest transformation. Elaborate on the sustainability elements of the proposed investment (i.e. sustainable-aquaculture, water treatment). Also explain the potential for linkages with private sector (contract farming, technical support, inputs contract etc), production and revenue projections, and potential off taker. Fill in the summary table below and adjust the items as relevant}

54. **Infrastructure and landscaping works.** {Provide in one paragraph the rationale for infrastructure and landscaping works proposed under the cluster, describing current limitations and opportunities towards environment sustainability. Describe proposed innovations and operation and maintenance (O&M) requirements and arrangements. Fill in the table below and adjust the items as relevant}. The proposed investments in infrastructure are presented in table 5 below and infrastructure siting and basic design are presented in Appendix 1.

**Table 5 Proposed Infrastructure Works and Investments**

| Ref | Infrastructure | Parameter 1 | | Parameter 2 | | Parameter 3 | | Cost (Rp) |
|---|---|---|---|---|---|---|---|---|
| 1 | Headworks' location | Canal bed | | Canal banks | | Slope | | |
| 3 | Headworks details[2] | Type | | Intake Q (l/s) | | Flood Q ($m^3/s$) | | |
| 4 | Sediment removal | Sediment basin | | Sand filter | | Disk filter | | |
| 5 | Pump station | Pump type | | Power (KW) | | Pump head | | |
| 6 | Storage | Diurnal (m3) | | Season (m3) | | Type | | |
| 7 | Pumping main | Length (m) | | Diameter (mm) | | Material | | |
| 8 | Source of power | Solar panels (m2) | | Mains (KW) | | Hydro/ Gen (KW) | | |
| 9 | SCADA-telemetry | Monitoring equips | | Supervisory | | Security | | |
| 10 | Tertiary | Length (m) | | Diameter (mm) | | Material | | |
| 11 | Lateral | Length (m) | | Diameter (mm) | | Material | | |
| 12 | Outlets | No. | | Diameter (mm) | | Flowmeter | | |
| 13 | Distribution method | Hose & rose (ha) | | Drip pipe (ha) | | Drip/sprinkler (ha) | | |
| 14 | Farm road | Length (m) | | Width (m) | | Material | | |
| 15 | Access road | Length (m) | | Width (m) | | Material | | |
| 16 | Building | Processing facility | | Store/drier | | office | | |
| 17 | Existing infrastructure | Headworks | | Canal /drain | | Building | | |

| Ref | Infrastructure | Parameter 1 | | Parameter 2 | | Parameter 3 | | Cost (Rp) |
|---|---|---|---|---|---|---|---|---|
| 18 | Land terracing | Area | None | Lowest level | NA | Highest level | NA | |
| 19 | Pond earthwork | | | | | | | |
| 20 | Vegetative works | | | | | | | |
| | {adjust the items as relevant} | | | | | | | |
| | | | | | | | **Sub-total[4]** | - |

Notes:

1 Canal bed or banks: br= bed rock; b=boulders; c=cobbles; g=gravels; s= sand; sl=silt; cl=clay; b-s= boulder to sand sizes
2 Intake capacity depends on sediment basin flushing discharge (also for expansion), Flood based On 30% Craeger curve.
3 See design notes for potential headworks structures
4 Not full cost. See Table App.1
5 Lateral Inspection tracks may be used as farm roads and price included with pipes

{Either define abbreviations within the table or list them alphabetically and define them below the table. Use a consistent approach and do not define some in the table and others below the table.}
Source: {provide source of information with full title of the document and links}

55. **Environment improvement and sustainability.** {Explain in two paragraphs maximum the environment protection works and sustainability elements of the plan including vegetative landscaping, water treatment, improved water management, and other activities to improve biodiversity and environment conditions. Explain briefly how those works will be implemented (i.e., community works) including preparatory activities (i.e. community group formation and strengthening etc.}.

56. **Cluster Design Map:** {Insert a map showing infrastructure and environment improvement works proposed under the cluster with component labeling consistent with the above table}

57. **Aquaculture production investments.** {Provide the rationale for improving aquaculture practices, including technology, training, extension services etc in one paragraph. Fill in the table below and adjust the items as relevant}. The proposed investments in production are presented in table 6 below.

**Table 6 Proposed aquaculture production investments**

| Activity | Quantity | Procurement/ Implementing entity | Financing Timeline And Who pays |
|---|---|---|---|
| Farmers group establishment | | | |
| Farmers group strengthening | | | |
| Equipment 1 | | | |
| Equipment 2 | | | |
| Training 1 | | | |
| Training 2 | | | |
| Extension services | | | |
| {adjust the items as relevant} | | | |

{Either define abbreviations within the table or list them alphabetically and define them below the table. Use a consistent approach and do not define some in the table and others below the table.}
Source: Source: {provide source of information with full title of the document and links}

58. **Supporting services investments.** {Summarize in 2 paragraphs maximum, the value chain aspects and opportunities including supply of inputs and availability of inputs, post-harvest practices, storage, transformation, aggregation, access to market, pricing, farm profitability, traceability, use of digital platforms, linkage with the private sector and the rationale for improvements. Describe the risks associated with the selected commodities and mitigation measures. Fill in the table below and adjust the items as relevant}. The proposed investments in value chain and supporting services are presented in table 6 below.

**Table 7 Proposed Value Chain and Supporting Services Investments**

| Activity (examples) | Quantity | Procurement/Implementing entity | Financing Timeline and who pays |
|---|---|---|---|
| Transformation Tech | | | |
| Marketing | | | |
| Training 1 | | | |
| Training 2 | | | |
| Digital 1 | | | |
| Digital 2 | | | |
| Facilitation to access finance | | | |
| Certification | | | |
| Traceability | | | |
| {adjust the items as relevant} | | | |

{Either define abbreviations within the table or list them alphabetically and define them below the table. Use a consistent approach and do not define some in the table and others below the table.}
Source: Source: {provide source of information with full title of the document and links}

59. **Cost estimates.** Detailed cost estimates by expenditure category are presented in appendix 2 and are summarized in the table 8 below. {For climate finance: Climate mitigation is estimated to cost ${amount} and climate adaptation is estimated to cost ${amount}. {Refer to Guidance Note on Counting Climate Finance at ADB.}

**Table 8 Summary Cost Estimate ($ million)**

| Item | | Amount[a] |
|---|---|---|
| 1. | Output 1 | 0.0 |
| 2. | Output 2 | 0.0 |
| 3. | Output 3 | 0.0 |
| | {include all project components or outputs} | 0.0 |
| | **Subtotal (A)** | **0.0** |
| | **Total (A+B+C)** | **0.0** |

{Either define abbreviations within the table or list them alphabetically and define them below the table. Use a consistent approach and do not define some in the table and others below the table.}

[a] Includes taxes and duties of {insert amount}. Such amount does not represent an excessive share of the project cost {confirm that this is the case based on the staff instruction on business processes for cost sharing and eligibility of expenditures for ADB financing}. {If ADB and/or ADB administered cofinancing is financing taxes and duties, indicate: ADB {and/or ADB- administered cofinancing} will finance taxes and duties of {insert amount} } {If the government is financing taxes and duties, indicate: The government will finance taxes and duties of {insert amount and indicate how such financing will be provided, e.g., exemption, cash contribution}.}

[b] In mid-20XX prices as of {date of finalization of the cost estimates}.

[c] Physical and price contingencies, and a provision for exchange rate fluctuation, are included.

Source{s}: {List table source(s)}.

60. **Financial and economic analysis.** {Describe in one paragraph the economic and financial viability, including with and without project conditions, key assumptions, benefit streams (direct, indirect, tangible and intangible), and risks. Include relevant description of the capacity of the agency involved, demand prospects for products or services, cost recovery mechanisms, and availability of resources for operation and maintenance of project outputs.} The economic and financial model is presented in appendix 3 including key assumptions. A summary is presented in table 9.

**Table 9 Cash Flow and Financial Viability**

| Item | IDR | Variable | IDR |
|---|---|---|---|
| Revenues | # | **Benefits** | |
| **Benefit streams** | | Xxx | # |
| Xxx | # | Xxx | # |
| Xxx | # | Total | # |
| Total (all values) | # | | |
| **Benefit 2** | # | | |
| | | **Costs** | |
| **Delay in Construction by 1 Year** | # | Construction | # |
| | | O&M | # |
| | | Other subproject costs | # |
| | | Total (direct subproject costs) | # |
| | | Project management costs | # |

{Either define abbreviations within the table or list them alphabetically and define them below the table. Use a consistent approach and do not define some in the table and others below the table.}

Source: Source: {provide source of information with full title of the document and links}

## III. SAFEGUARD DUE DILIGENCE AND IMPLEMENTATION PLAN

### Poverty, Social, and Gender

61. {Describe in one paragraph poverty reduction and social benefits of the subproject. If the subproject is directly targeting the poor or is located or concentrated in areas where most

residents are poor, clearly specify and explain. Summarize the key gender issues relevant to the subproject, and describe what measures are included in the project design to promote gender equality and women's empowerment.}

{Based on the social impact assessment (SIA) survey as guided in the CDF, describe the social and economic background of the targeted communities. The description should include the following (i) the social and cultural condition of the targeted communities; (ii) education level, income, major occupation, employment rate and poverty level of the community members; (iii) land tenure system of the community; (iv) access to basic government facilities; (v) social, environment, and cultural vulnerabilities (i.e., youth issues, gender, customary communities, flood, drought, etc.); and (vi) the presence of customary communities in the project sites, if any.} The complete SIA report is in the appendix 4

**Safeguards**

62. In compliance with ADB's Safeguard Policy Statement (2009), the project's safeguard categories are as follows.[1]

63. **Environment (category _).** The summary of potential environment impacts is presented in the table below, including mitigation measures. The environment safeguards screening form is in appendix 5.

**Table 10 Potential environment impacts and mitigations measures**

| Component | Size | Potential impact | Mitigation measure |
|---|---|---|---|
| Pond 1 | | | |
| Pond 2 | | | |
| Canal 1 | | | |
| Canal 2 | | | |
| Drain 1 | | | |
| Drain 2 | | | |
| Farm road 1 | | | |
| Farm road 2 | | | |
| Processing facility 1 | | | |
| Storage facility 1 | | | |
| {adjust the items as relevant} | | | |

{Either define abbreviations within the table or list them alphabetically and define them below the table. Use a consistent approach and do not define some in the table and others below the table.}
Source: {provide source of information with full title of the document and links}

64. {Describe in one paragraph the government requirement for environment permit including the agency in charge and timeline}. The xxx agency will xx when xxx. [Standard language]

65. **Involuntary resettlement (category C).** Based on the screening of the proposed activities in the areas the subproject is categorized as C. The identified land and non-land impacts and its mitigation/arrangement are detailed in Table 11 below. The involuntary resettlement safeguards screening form is in appendix 6.

[1] ADB. Safeguard Categories.

**Table 11 The Land Provision Mechanism and Potential Impacts of the Proposed Infrastructures**

| Component-Subcomponents | Size (ha or m2 or km) | Number of participated/ affected farmer households | Number of vulnerable households and women involved/ affected | Land provision mechanism (land sharing/pooling)[2] | Identified non land impact (if any)[3] | Mitigation Document prepared/ provided[4] | Construction Schedule |
|---|---|---|---|---|---|---|---|
| **Farmer Pond Cluster** | 5 ha | | | | | | |
| Production Pond | | | | | | | |
| Canal 1 (inlet) | | | | | | | |
| Canal 2 (outlet) | | | | | | | |
| Reservoir Pond | | | | | | | |
| WWTP Pond | | | | | | | |
| Access road | | | | | | | |
| Storage Facility | | | | | | | |
| **Irrigation Canal** | 22 km | | | | | | |
| Canal 1 | | | | | | | |
| Canal 2 | | | | | | | |
| **Pond Reconstruction + Communal WWTP + Electricity** | | | | | | | |
| Pond | 0.8 ha | | | | | | |
| WWTP | 0.2 ha | | | | | | |
| Electricity | 30 m | | | | | | |

{Either define abbreviations within the table or list them alphabetically and define them below the table. Use a consistent approach and do not define some in the table and others below the table.}
Source: {provide source of information with full title of the document and links}

**Table 12 List of Farmers Groups for Cluster Development and Ponds' Rehabilitation**

| Name of the Activities | Name of the Farmers Group | Name of the Members | Contributed Land Size | Notes |
|---|---|---|---|---|
| Farmer Pond Cluster | | | | |
| Irrigation Canal | | | | |
| Pond Reconstruction + Communal WWTP + Electricity | | | | |
| | | | | |

66. {If involuntary resettlement impacts are identified, describe ADB's and government requirements for land acquisition and resettlement including compensation rate, budget, the agency in charge, and timeline}

[2] Referred to the CDF prepared for the project
[3] Non land impacts includes: trees, structures, income/wages, access to resources, etc.
[4] The prepared document is attached in appendix 9

67. **Indigenous peoples (category _).** {Screen and indicate the presence of customary communities (MHA) in the subproject area. Describe the social and cultural condition of the identified MHA. The information includes the vulnerability status of the MHA}. A map showing indigenous peoples territories and the subproject site is presented in appendix 7 and the indigenous peoples safeguards screening form is in appendix 8. The summary of potential positive and negative impacts to indigenous people is presented in the table below.

**Table 13 Potential impacts on indigenous people and mitigation measures**

| Component | Potential impact (positive/negative) | Number of indigenous people | Measures/ Document prepared[5] |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| {adjust the items as relevant} | | | |

{Either define abbreviations within the table or list them alphabetically and define them below the table. Use a consistent approach and do not define some in the table and others below the table.}
Source: {provide source of information with full title of the document and links}

68. {Describe in one paragraph how the subproject will ensure benefits to the indigenous communities including implementation and monitoring mechanisms, the agency in charge, and timeline}

69. **Trainings on Community Empowerment and Shrimp Aquaculture Value Chain.** {Describe the proposed training activities for the project beneficiaries of Output 2 and 3 to be conducted in the subproject areas. Ensures the participants criteria meet the requirement as detailed in the CDF}.

| Type of training | Schedule | Targeted participants and its numbers | Location |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

70. **Consultation and Participation Plan.** The Project ensures meaningful consultation will be conducted as required by ADB SPS (2009), CDF and IPPF. Initial public consultation had been conducted to the project beneficiaries on XXX (dates). The summary of consultation meeting conducted is attached in appendix 11. The table below indicates the public consultation and participation plan to be conducted for the subproject.

| Activities | Schedule | Targeted Audience | Method of Consultation | Topics | Responsible agency |
|---|---|---|---|---|---|
| Public consultation 1 | | | | | |
| Public consultation 2 | | | | | |
| Public consultation 3 | | | | | |
| | | | | | |

[5] The prepared document is attached in appendix 10.

71. The summary consultation meetings, minutes of topic discussed, photos and list of participants will be reported in the semiannual safeguard monitoring report.

72. **Grievance Redress Mechanism.** The Project ensures that grievance redress mechanism had been established and disclosed to the targeted communities in subproject areas. Table below has information on the dissemination schedule, grievance redress committee contacts and information as established in the subproject areas.

| GRM Dissemination Schedule and Location | Means of disclosure/ dissemination[6] | Focal Persons (names) and contact number of GRC members at village and PIU level[7] |
|---|---|---|
| 1. (dates) | | |
| 2. | | |
| 3. | | |

73. The complaint's flow chart of the established GRM is in Appendix 12.

Implementation **Arrangements and Procurement**

74. The implementation arrangements are summarized in Table 13. A detailed subproject implementation plan and the procurement plan are respectively presented in appendix 13 and appendix 14.

**Table 14 Implementation Arrangements**

| Aspects | Arrangements | | |
|---|---|---|---|
| Estimated implementation period | {Month Year}–{Month Year} | | |
| Management | | | |
| Procurement | {Open competitive bidding (internationally advertised)} | {#} contracts | ${amount} |
| | {Open competitive bidding (nationally advertised)} | {#} contracts | ${amount} |
| | {Request for Quotations} | {#} contracts | ${amount} |

{Either define abbreviations within the table or list them alphabetically and define them below the table. Use a consistent approach and do not define some in the table and others below the table.}
Source{s}: {List table source(s)}.

**Monitoring and Reporting**

{Describe the monitoring and reporting mechanism for the SADP implementation. This includes responsible parties for the preparation of internal and external monitoring and reports submissions to CPMU and ADB for review and disclosure.}

[6] For example: verbal announcement during meetings / using pamphlets in village office/ Digital or social media information, etc.
[7] Complete GRM flowchart and GRC members and contacts are attached in Appendix 12

## LIST OF APPENDICES

Infrastructure Siting and Design
Detailed Cost Estimates by Expenditure Category
Economic and Financial Model
Social Impact Assessment Report
Environment Safeguards Screening Form
Involuntary Resettlement and Indigenous People Screening Form
Map Showing Indigenous Peoples' Territories and the Subproject Sites
Impacts Mitigation Documents (RP/land sharing-pooling agreements/Non land impacts arrangement)
Summary Result of Initial Public Consultation Meeting
MHA Development Planning (MHADP) Document
GRM Flow Chart Established in the Subproject and List of GRC Members and Contacts
Subproject Implementation Plan (Gantt Chart)
Procurement Plan

# Appendix 1
# Infrastructure Siting and Design

Appendix 2
Detailed Cost Estimates by Expenditure Category

# Appendix 3
# Economic and Financial Model

# Appendix 4
# Social Impact Assessment Report

# Appendix 5
# Environmental Safeguard Screening Form

Appendix 6
Involuntary Resettlement and Indigenous People Screening Form

**INVOLUNTARY RESETTLEMENT/ LAND ACQUISITION AND INDIGENOUS PEOPLE SCREENING CHECKLISTS**

## A. Introduction

Each project/subproject/component needs to be screen for any involuntary resettlement impacts and indigenous people impacts which will occur or already occurred. This screening determines the necessary action to be done by the project team.

## B. Information on project/subproject/component:

a. Subproject name:
b. Contract package number:
c. District/ Administrative Name:
d. Location/ area:
e. Civil work dates (proposed):
f. Technical Description: _____ _____

_____

_____

## C. Screening Questions for Involuntary Resettlement Impact

Below is the initial screening for involuntary resettlement impacts and due diligence exercise. Both permanent and temporary impacts must be considered and reported in the screening process.

| Involuntary Resettlement Impacts | Yes | No | Not Known | emarks |
|---|---|---|---|---|
| Will the project include any physical construction work? | | | | |
| Does the proposed activity include upgrading or rehabilitation of existing physical facilities? | | | | |
| Will it require permanent and/or temporary involuntary land acquisition? | | | | |
| Will it require donation or negotiated land acquisition? | | | | |
| Are there any non-titled people who live or earn their livelihood at the site or within the corridor of impact (COI) / Right of Way (ROW)? | | | | |
| Is the ownership status and current usage of the land known? | | | | |
| Will there be loss of housing? | | | | |
| Will there be loss of agricultural plots? | | | | |
| Will there be losses of crops, trees, and fixed assets (i.e., fences, pumps, etc.)? | | | | |
| Will there be loss of businesses or enterprises? | | | | |
| Will there be loss of incomes and livelihoods? | | | | |
| Will people lose access to facilities, services, or natural resources? | | | | |
| Will any social or economic activities be affected by land use-related changes? | | | | |
| Are any of the affected persons (AP) from indigenous or ethnic minority groups? | | | | If yes, please describe the situation |

| **Additional Notes: (sketch map or pictures)** |
|---|
| |

Source: {provide source of information with full title of the document and links}

## D. Screening Questions for Indigenous People Impact

| **Key Concerns**<br>(Please provide elaborations on the Remarks column) | **Yes** | **No** | **Not Known** | **Remarks** |
|---|---|---|---|---|
| **A. Indigenous Peoples Identification** | | | | |
| 1. Are there socio-cultural groups present in or use the project area who may be considered as "tribes" (hill tribes, schedules tribes, tribal peoples), "minorities" (ethnic or national minorities), or "indigenous communities" in the project area? | | | | |
| 2. Are there national or local laws or policies as well as anthropological research/studies that consider these groups present in or using the project area as belonging to "ethnic minorities", scheduled tribes, tribal peoples, national minorities, or cultural communities? | | | | |

| | | | | |
|---|---|---|---|---|
| 3. Do such groups self-identify as being part of a distinct social and cultural group? | | | | |
| 4. Do such groups maintain collective attachments to distinct habitats or ancestral territories and/or to the natural resources in these habitats and territories? | | | | |
| 5. Do such groups maintain cultural, economic, social, and political institutions distinct from the dominant society and culture? | | | | |
| 6. Do such groups speak a distinct language or dialect? | | | | |
| 7. Has such groups been historically, socially and economically marginalized, disempowered, excluded, and/or discriminated against? | | | | |
| 8. Are such groups represented as "Indigenous Peoples" or as "ethnic minorities" or "scheduled tribes" or "tribal populations" in any formal decision-making bodies at the national or local levels? | | | | |
| **B. Identification of Potential Impacts** | | | | |
| 9. Will the project directly or indirectly benefit or target Indigenous Peoples? | | | | |
| 10. Will the project directly or indirectly affect Indigenous Peoples' traditional socio-cultural and belief practices? (e.g., child-rearing, health, education, arts, and governance) | | | | |
| 11. Will the project affect the livelihood systems of Indigenous Peoples? (e.g., food production system, natural resource management, crafts and trade, employment status) | | | | |
| 12. Will the project be in an area (land or territory) occupied, owned, or used by Indigenous Peoples, and/or claimed as ancestral domain? | | | | |
| **C. Identification of Special Requirements** *Will the project activities include:* | | | | |
| 13. Commercial development of the cultural resources and knowledge of Indigenous Peoples? | | | | |
| 14. Physical displacement from traditional or customary lands? | | | | |
| 15. Commercial development of natural resources (such as minerals, hydrocarbons, forests, water, hunting or fishing grounds) within customary lands under use that would impact the livelihoods or the cultural, ceremonial, spiritual uses that define the identity and community of Indigenous Peoples? | | | | |
| 16. Establishing legal recognition of rights to lands and territories that are traditionally owned or customarily used, occupied or claimed by indigenous peoples? | | | | |
| 17. Acquisition of lands that are traditionally owned or customarily used, occupied or claimed by indigenous peoples? | | | | |

Source: {provide source of information with full title of the document and links}

## E. Involuntary Resettlement and Indigenous People Impact

After reviewing the answers above, EA/ Safeguard Team confirms that the proposed subsection/ section/ subproject/component (tick as appropriate):

**[ ]** Has involuntary resettlement (IR) or land acquisition impact, a resettlement plan (or corrective action plan) is required

**[ ]** Has No IR impact, due diligence report to be prepared to confirm.

**[ ]** Has Indigenous People (IP) impact, an indigenous people plan (IPP) (or specific IP action plan) is required

**[ ]** Has No IP impact, no IPP/specific action plan is required.

| | |
|---|---|
| Prepared By:<br><br>Signature:<br>Name:<br>Position: | Verified by:<br><br>Signature:<br>Name:<br>Position: |
| Date: | Date: |

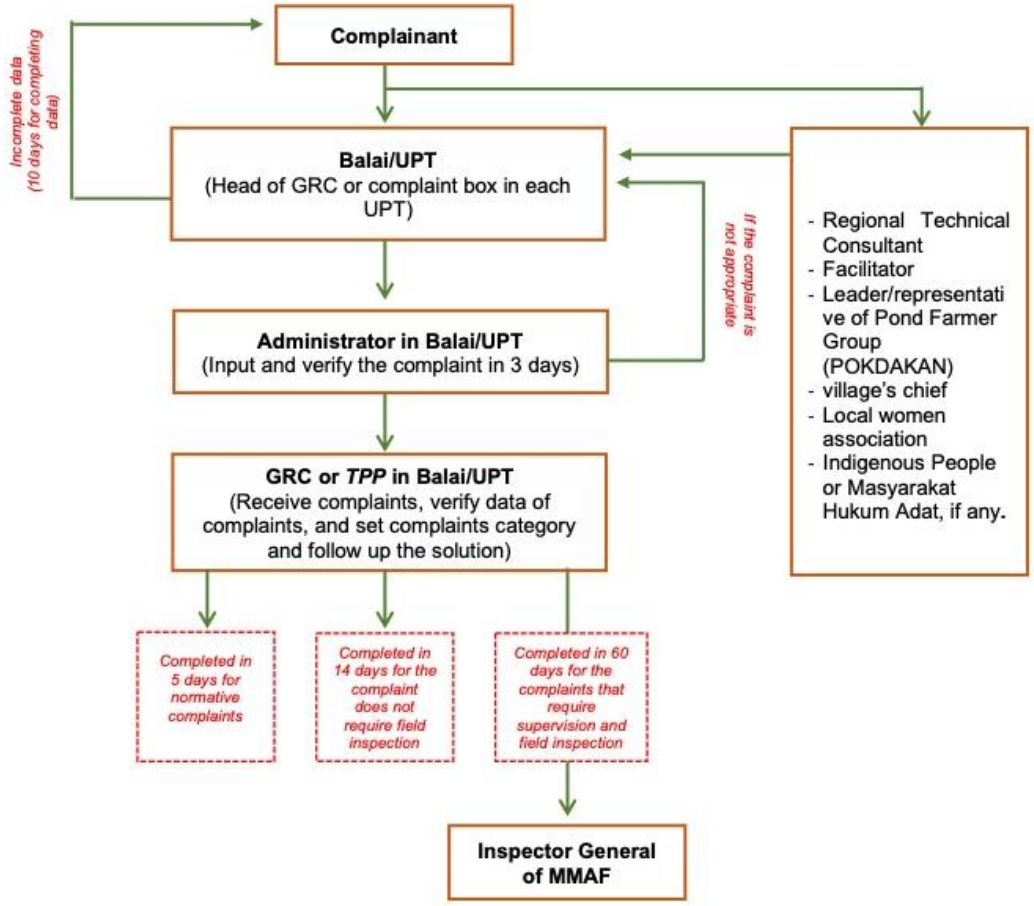
Appendix 7
Map showing indigenous people’s territories and the subproject sites

Appendix 8
Impacts Mitigation Documents (Land sharing-pooling agreements/Non land impacts arrangement)

Appendix 9
Summary result of initial public consultation meeting

# Appendix 10
# MHA Development Planning (MHADP) Document

Appendix 11
GRM Flow Chart Established in the Subproject and List of GRC Members and Contacts




Source: Asian Development Bank.

Appendix 12
Subproject Implementation Plan (Gantt Chart)

Appendix 13
Procurement Plan

## List of Potential Farmers Groups

### Core Subprojects

| Province | District | Subdistrict |
|---|---|---|
| South Sulawesi Province | Sinjai District | Sinjai Timur Subdistrict |
| Central Java Province | Jepara District | Kedung Subdistrict |

Source: Ministry of Marine Affairs and Fisheries.

### Non-Core Subprojects

To be confirmed

# Detailed Cost Estimates

| Cost input details | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Ref | Item | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | ADB-Total-Contg |
| Spare | | | | | | | | |
| OUT_1 | 1. Quality and sustainable inputs production increased | | | | | | | |
| 1.1. | 1.1. Broodstock and Multiplication Centers Capacity Increased | | | | | | | |
| 1.1.1 | Broodstock and Multiplication Centers Basic Designd review by Institute of Ocean | 132,781,829.861 | 142,379,084.583 | 168,384,414.856 | 165,114,861.779 | 72,657,954.131 | - | 681,318,145.2 |
| 1.1.2 | Broodstock Centers Improvement | | | | | | | |
| 1.1.02.01 | Broodstock Centers - Construction | - | 776,878,281.299 | 71,473,561.886 | - | - | - | 848,351,843.2 |
| 1.1.02.02 | Broodstock Centers -Equipment | - | 442,393,144.718 | 40,709,373.955 | - | - | - | 483,102,518.7 |
| 1.1.3 | Multiplication Centers Improvement | - | - | - | - | - | - | |
| 1.1.03.01 | Pinrang Multiplication Centers - Construction | - | 612,036,461.107 | 56,307,953.166 | - | - | - | 668,344,414.3 |
| 1.1.03.02 | Pinrang Multiplication Centers-Equipment | - | 222,825,518.862 | 20,504,583.948 | - | - | - | 243,330,102.8 |
| 1.1.03.03 | Aceh Besar Multiplication Centers - Construction | - | 918,054,691.661 | 84,461,929.750 | - | - | - | 1,002,516,621.4 |
| 1.1.03.04 | Aceh Besar Multiplication Centers-Equipment | - | 229,055,437.611 | 21,077,866.096 | - | - | - | 250,133,303.7 |
| 1.1.4 | Training for MMAF staff | - | 5,678,380.913 | 5,748,279.449 | 5,822,520.001 | 5,897,177.565 | - | 23,146,357.9 |
| 1.1.5 | Overseas Training for MMAF staff | - | - | 14,177,939.349 | - | 14,537,044.149 | - | 28,714,983.5 |
| 1.1.6 | Socialize of broodstock breeding protocols to small and medium | - | 1,514,234.910 | 1,532,874.520 | - | - | - | 3,047,109.4 |
| 1.1.7 | Socialize of Good Hatchery Practice (CPIB) to farmers | - | 5,299,822.185 | 5,365,060.819 | - | - | - | 10,664,883.0 |
| 1.1.8 | Facilitation for Backyard Hatchery | | | | | | | |
| 1.1.08.01 | Facilitation for Backyard Hatchery - Full | - | 34,231,259.879 | 3,149,988.141 | - | - | - | 37,381,248.0 |
| 1.1.08.02 | Facilitation for Backyard Hatchery - Partial | - | 4,754,341.650 | 437,498.353 | - | - | - | 5,191,840.0 |
| | | | | | | | | |
| 1.2. | 1.2. Sustainable Feed Capacity Increased | | | | | | | |
| 1.2.1 | Improve the awareness and implementation of GERPARI | | | | | | | |
| 1.2.01.01 | Disseminate to small and medium feed suppliers and farmers. | 5,240,052.335 | 5,299,822.185 | - | - | - | - | 10,539,874.5 |
| 1.2.01.02 | Train Indonesian government, feed and processing sectors on | - | - | - | - | - | - | - |
| 1.2.01.03 | Generate mass balance inspection protocol to validate feed to | - | - | - | - | - | - | - |
| 1.2.01.04 | Develop shrimp feed action plan | - | - | - | - | - | - | - |
| 1.2.01.05 | Support five supply chain pilot validation exercises to refine and | - | - | - | - | - | - | - |
| 1.2.01.06 | Pre- and post-project inspection by the Seafood Task Force | - | - | - | - | - | - | - |
| 1.2.01.07 | Feed/shrimp tracking program action plan Socialization | - | - | - | - | - | - | - |
| 1.2.01.08 | Feed/shrimp tracking program action plan implementation | - | - | - | - | - | - | - |
| 1.2.01.09 | Overseas Training for MMAF staff | - | - | - | - | - | - | - |
| 1.2.2 | Supply chain renovations of shrimp traceability, broodstock and | - | - | - | - | - | - | - |
| 1.2.02.01 | Develop the ToR for Supply chain renovations of shrimp | - | - | - | - | - | - | - |
| 1.2.02.02 | Sozialization/workshop the Supply chain renovations to the | - | - | - | - | - | - | - |
| 1.2.02.03 | Supply chain revovation implementation | - | - | - | - | - | - | - |
| 1.2.02.04 | periodically controlled intensification of farms and product quality | - | - | - | - | - | - | - |
| 1.2.02.05 | 5 buyer visits | - | - | - | - | - | - | - |
| 1.2.02.06 | Supply chain renovation improvement | - | - | - | - | - | - | - |
| 1.2.3 | Conduct R&D for viable feed alternatives | - | - | - | - | - | - | - |
| 1.2.03.01 | Support development of self-sufficient shrimp feed formula using | - | - | - | - | - | - | - |
| 1.2.4 | Pilot demonstration of GERPARI (equipment, technical support) | - | - | - | - | - | - | - |
| 1.3. | 1.3. Disease and Environment Control Enhanced | | | | | | | |
| 1.3.1 | Laboratories Rehabilitation and Improvement | | | | | | | |
| 1.3.01.01 | BBPBAP Jepara Laboratories - Construction | - | 74,718,253.438 | 37,807,838.265 | - | - | - | 112,526,091.7 |
| 1.3.01.02 | BBPBAP Jepara Laboratories - Equipment Installation | - | - | 52,499,802.344 | 26,586,879.104 | - | - | 79,086,681.4 |
| 1.3.01.03 | BBPBL Lampung Laboratories - Construction | - | 74,718,253.438 | 37,807,838.265 | - | - | - | 112,526,091.7 |
| 1.3.01.04 | BBPBL Lampung Laboratories - Equipment Installation | - | - | 52,499,802.344 | 26,586,879.104 | - | - | 79,086,681.4 |
| 1.3.01.05 | BPIUUK Karangasem Laboratories - Construction | - | 74,718,253.438 | 37,807,838.265 | - | - | - | 112,526,091.7 |
| 1.3.01.06 | BPIUUK Karangasem Laboratories - Equipment Installation | - | - | 52,499,802.344 | 26,586,879.104 | - | - | 79,086,681.4 |
| 1.3.01.07 | BPBAP Ujung Batee Laboratories - Construction | - | 74,718,253.438 | 37,807,838.265 | - | - | - | 112,526,091.7 |
| 1.3.01.08 | BPBAP Ujung Batee Laboratories - Equipment Installation | - | - | 52,499,802.344 | 26,586,879.104 | - | - | 79,086,681.4 |
| 1.3.01.09 | BPBAP Takalar Laboratories - Construction | - | 74,718,253.438 | 37,807,838.265 | - | - | - | 112,526,091.7 |

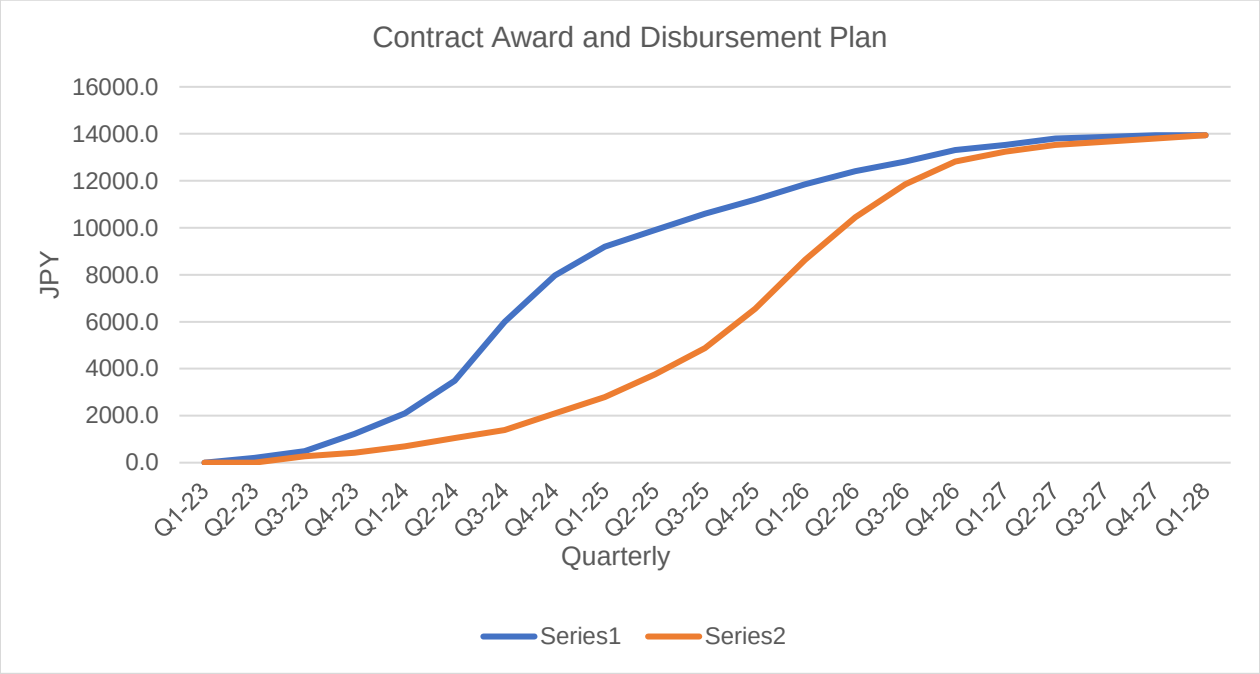
| Cost input details | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Ref | Item | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | ADB-Total-Contg |
| 1.3.01.10 | BPBAP Takalar Laboratories - Equipment Installation | - | - | 52,499,802.344 | 26,586,879.104 | - | - | **79,086,681.4** |
| 1.3.01.11 | BPBAP Situbondo Laboratories - Construction | - | 74,718,253.438 | 37,807,838.265 | - | - | - | **112,526,091.7** |
| 1.3.01.12 | BPBAP Situbondo Laboratories - Equipment Installation | - | - | 52,499,802.344 | 26,586,879.104 | - | - | **79,086,681.4** |
| 1.3.01.13 | LP2IL Serang Laboratories - Construction | - | 48,566,864.734 | 24,575,094.872 | - | - | - | **73,141,959.6** |
| 1.3.01.14 | LP2IL Serang Laboratories - Equipment Installation | - | - | 104,999,604.688 | 53,173,758.209 | - | - | **158,173,362.9** |
| 1.3.01.15 | Mobile Laboratories - Equipment | - | - | - | 89,331,913.791 | - | - | **89,331,913.8** |
| **1.3.2** | Modern laboratories training | | | | | | | |
| 1.3.02.01 | MMAF staff training (Training of trainers) | - | 2,271,352.365 | 2,299,311.780 | 2,329,008.000 | - | - | **6,899,672.1** |
| 1.3.02.02 | Training for UPT and UPTD on laboratory management and | - | 1,703,514.274 | 1,724,483.835 | 1,746,756.000 | 1,769,153.269 | - | **6,943,907.4** |
| **1.3.3** | the training of disease sampling and handling for shrimp, | | | | | | | |
| 1.3.03.01 | Training for Trainer to extension workers/facilitators | 1,048,010.467 | 2,119,928.874 | 2,146,024.328 | 3,260,611.200 | 2,201,612.957 | - | **10,776,187.8** |
| 1.3.03.02 | Training for farmers | 1,310,013.084 | 2,649,911.093 | 2,682,530.410 | 4,075,764.001 | 2,752,016.197 | - | **13,470,234.8** |
| 1.3.03.03 | Training for expantion farmers | 2,266,098.061 | 4,583,891.920 | 4,640,317.746 | 7,050,373.019 | 4,760,516.246 | - | **23,301,197.0** |
| 1.3.03.04 | Training fro HSRT (small scale hatchery /backyard) | 1,100,410.990 | 2,225,925.318 | 2,253,325.544 | 3,423,641.761 | 2,311,693.605 | - | **11,314,997.2** |
| **1.3.4** | Workshops on harmonization of testing methodology to UPT and UPTD | | | | | | | |
| 1.3.04.01 | Workshops on Harmonization of testing methodology, validation/ verification of test methods, and AMR control | - | 757,117.455 | 766,437.260 | - | - | - | **1,523,554.7** |
| **1.3.5** | Workshops on Shrimp breeding bioinformatics to UPT | | | | | | | |
| 1.3.05.01 | Workshops | - | 757,117.455 | 766,437.260 | - | - | - | **1,523,554.7** |
| | | | | | | | | |
| **OUT_2** | **2. Sustainable aquaculture infrastructure and services developed** | | | | | | | |
| **2.1.** | **2.1. Farmer-Based Enterprise (FBE) Development and Strengthening** | | | | | | | |
| **2.1.1** | Empowerment of the extension workers/facilitators on improving | | | | | | | |
| 2.1.1.01 | Comparative study extension workers/facilitators | - | 2,119,928.874 | - | - | 2,201,612.957 | - | **4,321,541.8** |
| **2.1.2** | Socialization for establishment and strengthening of FBE | 3,930,039.251 | 11,924,599.917 | - | - | - | - | **15,854,639.2** |
| **2.1.3** | Farmers/FBE strengthening / training | | | | | | | |
| 2.1.3.01 | Training for Farmer/FBE in organization/institutional | - | 2,649,911.093 | 4,470,884.016 | 6,340,077.334 | - | - | **13,460,872.4** |
| 2.1.3.02 | Training for FBE/Farmer on Sustainable Aquaculture | - | 2,649,911.093 | 4,470,884.016 | 6,340,077.334 | - | - | **13,460,872.4** |
| 2.1.3.03 | Training for Farmer/FBE in financial literacy | - | 2,649,911.093 | 4,470,884.016 | 6,340,077.334 | - | - | **13,460,872.4** |
| 2.1.3.04 | Training for Expantion Farmer/FBE in financial literacy | - | 4,583,891.920 | 7,733,862.911 | 10,967,246.918 | - | - | **23,285,001.7** |
| 2.1.3.04 | Farmer/FBE Comparative study | - | 1,514,234.910 | 2,554,790.866 | 3,622,901.334 | - | - | **7,691,927.1** |
| **2.1.4** | Support farmer-based enterprises in legally established | 15,158,722.825 | 45,994,885.394 | - | - | - | - | **61,153,608.2** |
| **2.1.5** | Support farmer-based enterprises in preparing business | - | 30,663,256.929 | 31,040,709.026 | 31,441,608.005 | 31,844,758.849 | - | **124,990,332.8** |
| **2.1.6** | Facilitate preparation of proposals for farmer-based enterprises to access credits (KUR, rural banks) | - | 72,714,847.482 | 73,609,937.384 | 74,560,629.222 | 75,516,661.135 | - | **296,402,075.2** |
| | | | | | | | | |
| **2.2.** | **2.2. Sustainable Aquaculture Production Facilities Developed** | | | | | | | |
| **2.2.1** | UPTs - ponds Development | | | | | | | |
| 2.2.1.01 | Mauk-Tangerang (BBPBAP Jepara) Ponds - Construction | 46,404,654.296 | 46,919,609.308 | - | - | - | - | **93,324,263.6** |
| 2.2.1.02 | Mauk-Tangerang (BBPBAP Jepara) WWTP - Construction | 4,156,773.807 | 4,202,901.756 | - | - | - | - | **8,359,675.6** |
| 2.2.1.03 | Mauk-Tangerang (BBPBAP Jepara) Irrigation and Drains - | 6,927,956.346 | 7,004,836.260 | - | - | - | - | **13,932,792.6** |
| 2.2.1.04 | Mauk-Tangerang (BBPBAP Jepara) Farm Road - Construction | 173,198.909 | 175,120.906 | - | - | - | - | **348,319.8** |
| 2.2.1.05 | Mauk-Tangerang (BBPBAP Jepara) Equipments | 138,559.127 | 140,096.725 | - | - | - | - | **278,655.9** |
| 2.2.1.06 | BPBAP Situbondo Ponds - Construction | 30,638,770.548 | 30,978,770.678 | - | - | - | - | **61,617,541.2** |
| 2.2.1.07 | BPBAP Situbondo WWTP - Construction | 4,156,773.807 | 4,202,901.756 | - | - | - | - | **8,359,675.6** |
| 2.2.1.08 | BPBAP Situbondo Irrigation and Drains - Construction | 6,927,956.346 | 7,004,836.260 | - | - | - | - | **13,932,792.6** |
| 2.2.1.09 | BPBAP Situbondo Farm Road - Construction | 173,198.909 | 175,120.906 | - | - | - | - | **348,319.8** |
| 2.2.1.10 | BPBAP Situbondo Equipments | 138,559.127 | 140,096.725 | - | - | - | - | **278,655.9** |
| 2.2.1.11 | BBPBAP Jepara Ponds - Construction | 29,107,088.078 | 29,430,091.042 | - | - | - | - | **58,537,179.1** |
| 2.2.1.12 | BBPBAP Jepara WWTP - Construction | 4,156,773.807 | 4,202,901.756 | - | - | - | - | **8,359,675.6** |
| 2.2.1.13 | BBPBAP Jepara Irrigation and Drains - Construction | 6,927,956.346 | 7,004,836.260 | - | - | - | - | **13,932,792.6** |
| 2.2.1.14 | BBPBAP Jepara Farm Road - Construction | 173,198.909 | 175,120.906 | - | - | - | - | **348,319.8** |
| 2.2.1.15 | BBPBAP Jepara Equipments | 138,559.127 | 140,096.725 | - | - | - | - | **278,655.9** |

| Cost input details | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Ref | Item | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | ADB-Total-Contg |
| 2.2.1.16 | Pinrang - BBPBAP Takalar Ponds - Construction | 59,740,748.566 | 60,403,694.953 | - | - | - | - | 120,144,443.5 |
| 2.2.1.17 | Pinrang - BBPBAP Takalar WWTP - Construction | 4,156,773.807 | 4,202,901.756 | - | - | - | - | 8,359,675.6 |
| 2.2.1.18 | Pinrang - BBPBAP Takalar Irrigation and Drains - Construction | 6,927,956.346 | 7,004,836.260 | - | - | - | - | 13,932,792.6 |
| 2.2.1.19 | Pinrang - BBPBAP Takalar Farm Road - Construction | 173,198.909 | 175,120.906 | - | - | - | - | 348,319.8 |
| 2.2.1.20 | Pinrang - BBPBAP Takalar Equipments | 138,559.127 | 140,096.725 | - | - | - | - | 278,655.9 |
| 2.2.1.21 | Takalar - BBPBAP Takalar Ponds - Construction | 59,740,748.566 | 60,403,694.953 | - | - | - | - | 120,144,443.5 |
| 2.2.1.22 | Takalar - BBPBAP Takalar WWTP - Construction | 4,156,773.807 | 4,202,901.756 | - | - | - | - | 8,359,675.6 |
| 2.2.1.23 | Takalar - BBPBAP Takalar Irrigation and Drains - Construction | 6,927,956.346 | 7,004,836.260 | - | - | - | - | 13,932,792.6 |
| 2.2.1.24 | Takalar - BBPBAP Takalar Farm Road - Construction | 173,198.909 | 175,120.906 | - | - | - | - | 348,319.8 |
| 2.2.1.25 | Takalar - BBPBAP Takalar Equipments | 138,559.127 | 140,096.725 | - | - | - | - | 278,655.9 |
| **2.2.2** | Socialize the sustainable aquaculture approach to farmers | | | | | | | |
| **2.2.3** | Socialize the sustainable aquaculture approach to farmers | | | | | | | |
| 2.2.3.01 | Farmer/farmer group/farmer enteprise selection | 524,005.233 | 529,982.219 | - | - | - | - | 1,053,987.5 |
| 2.2.3.02 | Farmers Cluster Ponds - Improvement | 173,792,703.304 | 702,987,034.733 | 533,647,494.883 | 360,305,768.307 | - | - | 1,770,733,001.2 |
| **2.2.4** | Farmers ponds Development to modernize production facilities | | | | | | | |
| 2.2.4.01 | Farmer/farmer group/farmer enteprise selection | 104,801.047 | 423,985.775 | 321,903.649 | 217,374.080 | - | - | 1,068,064.6 |
| 2.2.4.02 | Farmers Ponds - Improvement | 137,138,242.244 | 554,720,678.317 | 421,096,386.871 | 284,314,006.264 | - | - | 1,397,269,313.7 |
| 2.2.4.03 | Irrigation Canal and Drains - Construction | 80,475,140.910 | 325,472,711.974 | 247,036,415.224 | 166,770,426.489 | - | - | 819,754,694.6 |
| 2.2.4.04 | Supporting Farm Input | 35,032,686.457 | 141,717,415.900 | 107,587,844.944 | 72,645,988.465 | - | - | 356,983,935.8 |
| **2.2.5** | Farmer Pond equipment support-to modernize production | | | | | | | |
| 2.2.5.01 | Training for Staff on Aquaculture asset management | 6,737,210.144 | - | - | - | - | - | 6,737,210.1 |
| 2.2.5.02 | Training for Farmer/farmer group/FBE on OM of aquaculture | 13,100,130.836 | - | - | - | - | - | 13,100,130.8 |
| 2.2.5.03 | Training for Expantion Farmer/farmer group/FBE on OM of | 2,266,098.061 | 9,167,783.840 | 9,280,635.493 | 2,350,124.340 | - | - | 23,064,641.7 |
| **2.2.6** | Capacity building on O&M Sustainable aquaculture ponds and | | | | | | | |
| 2.2.6.01 | Establish/re-establish the water management group | 12,476,315.082 | - | - | - | - | - | 12,476,315.1 |
| 2.2.6.02 | Training for WMG in managing hydraulic units | 1,310,013.084 | 5,299,822.185 | 5,365,060.819 | 1,358,588.000 | - | - | 13,333,484.1 |
| **2.2.7** | Mangrove or other species planting | 748,578.905 | 3,028,469.820 | 3,065,749.040 | 776,336.000 | - | - | 7,619,133.8 |
| | | | | | | | | |
| **2.3.** | **2.3. Sustainable Aquaculture Production Practices Introduced** | | | | | | | |
| **2.3.1** | Improve the awareness and implementation of INDOGAP | | | | | | | |
| 2.3.1.01 | Socialization to district agencies, UPT staff, facilitator and | 786,007.850 | 3,179,893.311 | 4,023,795.614 | 4,075,764.001 | 4,128,024.295 | - | 16,193,485.1 |
| 2.3.1.01 | Socialization to Feed Company | 786,007.850 | 3,179,893.311 | 4,023,795.614 | 4,075,764.001 | 4,128,024.295 | - | 16,193,485.1 |
| 2.3.1.02 | Socialize/training to farmers | 655,006.542 | 2,649,911.093 | 3,353,163.012 | 3,396,470.000 | 3,440,020.246 | - | 13,494,570.9 |
| **2.3.2** | Smallscale famers Capacity building | | | | | | | |
| 2.3.2.01 | Training for Farmer in sustainable and good aquaculture | 655,006.542 | 2,649,911.093 | 3,353,163.012 | 3,396,470.000 | 3,440,020.246 | - | 13,494,570.9 |
| 2.3.2.02 | Training for Expantion Farmer in sustainable and good | 1,133,049.031 | 4,583,891.920 | 5,800,397.183 | 5,875,310.849 | 5,950,645.308 | - | 23,343,294.3 |
| 2.3.2.03 | Training for Farmer in social and environment safeguards | 655,006.542 | 2,649,911.093 | 3,353,163.012 | 3,396,470.000 | 3,440,020.246 | - | 13,494,570.9 |
| **OUT_3** | **3. Shrimp aquaculture value chain strengthened** | | | | | | | |
| **3.1.** | **3.1. Schrimp Handling and Traceability Improved** | | | | | | | |
| **3.1.1** | Improve the awareness and implementation of STELINA | | | | | | | |
| 3.1.1.01 | Disseminate the good practices of STELINA | 99,810.521 | 302,846.982 | - | - | - | - | 402,657.5 |
| 3.1.1.02 | Expand the STELINA implementation (coordination with the | 62,381.575 | 189,279.364 | - | - | - | - | 251,660.9 |
| **3.1.2** | Farmers and extension workers capacity building on STELINA | | | | | | | |
| 3.1.2.01 | ToT for Extention Worker | 2,620,026.167 | 7,949,733.278 | - | - | - | - | 10,569,759.4 |
| 3.1.2.02 | Training to farmers | 3,275,032.709 | 9,937,166.597 | - | - | - | - | 13,212,199.3 |
| **3.1.3** | Facilitate registration of broodstock and feed suppliers, farmers, | | | | | | | |
| 3.1.3.01 | Facilitate registration of broodstock and feed suppliers, farmers, | 374,289.452 | 1,135,676.183 | - | - | - | - | 1,509,965.6 |

| Cost input details | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Ref | Item | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | ADB-Total-Contg |
| 3.1.4 | Monitor and provide continuous technical support to farmers | 1,871,447.262 | 5,678,380.913 | - | - | - | - | 7,549,828.2 |
| 3.1.5 | Facilitate MOU between farmers-based enterprises with private | 499,052.603 | 1,514,234.910 | - | - | - | - | 2,013,287.5 |
| 3.1.6 | Upgrade server for Indogap and Stelina database for traceability | 374,289.452 | 1,135,676.183 | - | - | - | - | 1,509,965.6 |
| 3.1.7 | Integrate information from STELINA and INDOGAP into "SATU | 374,289.452 | 1,135,676.183 | - | - | - | - | 1,509,965.6 |
| 3.2. | 3.2. Regulatory Framework and Systems for Schrimp | | | | | | | |
| 3.2.1 | Prepare quality standards for value chains | 87,334.206 | 353,321.479 | 447,088.402 | 452,862.667 | 458,669.366 | - | 1,799,276.1 |
| 3.2.2 | Review and rationalize regulations and incentive system (i.e., | 87,334.206 | 353,321.479 | 447,088.402 | 452,862.667 | 458,669.366 | - | 1,799,276.1 |
| 3.2.3 | Prepare regulations for the use of domestic superior shrimp | 87,334.206 | 353,321.479 | 447,088.402 | 452,862.667 | 458,669.366 | - | 1,799,276.1 |
| 3.2.4 | Prepare a National Action Plans for Shrimp Aquaculture | - | - | - | - | - | - | - |
| 3.2.5 | Feed/shrimp tracking program - Consulting Services | - | - | - | - | - | - | - |
| 3.2.6 | National workshop and socialization | - | - | - | - | - | - | - |
| 3.3. | 3.3. Project Management and Capacity Building | | | | | | | |
| 3.3.1 | Project Consultants (PC) | | | | | | | |
| 3.3.1.01 | Project Management Consultants (PMC) | 48,816,863.823 | 123,377,281.393 | 124,873,576.731 | 126,494,841.567 | 76,893,033.998 | - | 500,455,597.5 |
| 3.3.1.02 | West Regional Technical Consultants (WRC) | 27,698,213.804 | 70,003,069.657 | 70,852,053.080 | 71,771,942.982 | 43,628,359.730 | - | 283,953,639.3 |
| 3.3.1.03 | East Regional Technical Consultants (ERC) | 27,698,213.804 | 70,003,069.657 | 70,852,053.080 | 71,771,942.982 | 43,628,359.730 | - | 283,953,639.3 |
| 3.3.1.04 | Asset Management Information System Development | 7,478,875.087 | 18,901,731.979 | 19,130,968.457 | 19,379,350.599 | 11,780,220.015 | - | 76,671,146.1 |
| 3.3.1.05 | External Monitoring Agency (EMA) (Aceh) | 997,183.345 | 2,520,230.931 | 2,550,795.794 | 2,583,913.413 | 1,570,696.002 | - | 10,222,819.5 |
| 3.3.1.06 | External Monitoring Agency (EMA) (Lampung and Banten) | 997,183.345 | 2,520,230.931 | 2,550,795.794 | 2,583,913.413 | 1,570,696.002 | - | 10,222,819.5 |
| 3.3.1.07 | External Monitoring Agency (EMA) (Central Java, East Java, | 997,183.345 | 2,520,230.931 | 2,550,795.794 | 2,583,913.413 | 1,570,696.002 | - | 10,222,819.5 |
| 3.3.1.08 | External Monitoring Agency (EMA) (South Sulawesi. Aceh and South Sulawesi) | 997,183.345 | 2,520,230.931 | 2,550,795.794 | 2,583,913.413 | 1,570,696.002 | - | 10,222,819.5 |
| 3.3.1.09 | Facilitator | 55,224,387.583 | 139,571,334.022 | 141,264,027.637 | 143,098,093.790 | 86,985,733.605 | - | 566,143,576.6 |
| 3.3.2 | Project Management Office (PMO) | | | | | | | |
| 3.3.2.01 | Project Management Workshop Keuangan, Pengadaan barang dan jasa, Social and Invironment safeguard, Manajemen Proyek, Money) | 8,982,946.859 | 9,085,409.460 | 9,197,247.119 | 9,316,032.001 | 9,435,484.103 | - | 46,017,119.5 |
| 3.3.2.02 | Upgrade skills and knowledge of MMAF staff technical operation | 8,982,946.859 | 36,341,637.842 | - | - | - | - | 45,324,584.7 |
| 3.3.2.02 | project supervision, coordination with Balai, UPT/UPTD, local governments, and reporting | 14,971,578.099 | 15,142,349.101 | 15,328,745.198 | 15,526,720.002 | 15,725,806.839 | - | 76,695,199.2 |
| 3.3.2.03 | Good and sustainable aquaculture practices in international forum / Attending the International Event | 14,971,578.099 | 15,142,349.101 | 15,328,745.198 | 15,526,720.002 | 15,725,806.839 | - | 76,695,199.2 |
| 3.3.2.04 | Develop and maintain an integrated geospatial information system for shrimp aquaculture including gender disaggregated data | 7,485,789.049 | 7,571,174.550 | 7,664,372.599 | 7,763,360.001 | 7,862,903.420 | - | 38,347,599.6 |
| 3.3.3 | UPT-Project Implementation Unit (PIU) | | | | | | | |
| 3.3.3.01 | UPT-Project Implementation Unit (PIU) | 69,867,364.461 | 70,664,295.804 | 71,534,144.257 | 72,458,026.677 | 73,387,098.583 | - | 357,910,929.8 |
| | Total | 1,219,805,750.253 | 6,755,726,201.449 | 3,219,262,038.008 | 2,112,219,232.922 | 633,688,554.666 | - | 13,940,701,777.3 |

Source: Asian Development Bank.

## Contract Awards and Disbursement Projections




Source: Asian Development Bank.

| Year | Contract Awards-JPY million | | | | Disbursement-JPY million | | | |
|---|---|---|---|---|---|---|---|---|
| | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 |
| 2023 | - | 209.1 | 487.9 | 1,219.8 | - | - | 278.8 | 418.2 |
| 2024 | 2,091.1 | 3,485.2 | 5,994.5 | 7,975.5 | 697.0 | 1,045.6 | 1,394.1 | 2,091.1 |
| 2025 | 9,200.9 | 9,897.9 | 10,594.9 | 11,194.8 | 2,788.1 | 3,764.0 | 4,879.2 | 6,552.1 |
| 2026 | 11,849.6 | 12,407.2 | 12,825.4 | 13,307.0 | 8,643.2 | 10,455.5 | 11,849.6 | 12,825.4 |
| 2027 | 13,522.5 | 13,801.3 | 13,871.0 | 13,940.7 | 13,243.7 | 13,522.5 | 13,661.9 | 13,801.3 |
| 2028 | 13,940.7 | | | | 13,940.7 | | | |

Source: Asian Development Bank.

# Procurement Plan

| Basic Data | |
|---|---|
| Project Name: **Infrastructure Improvement for Shrimp Aquaculture Project (IISAP)** | |
| Project Number: 55020-001 | Approval Number: LXXXX |
| Country: Indonesia | Executing Agency: Directorate General of Aquaculture, Ministry of Marine Affairs and Fisheries |
| Procurement Risk: Moderate | Implementing Agencies:<br>Directorate General of Aquaculture<br>Technical Operating Units (Unit Pelaksana Teknis) |
| Project Financing Amount: ¥15,606,865,425.14<br>ADB Financing: ¥13,940,700,000.00<br>Government Financing: ¥1,666,165,425.14 | Project Closing Date: 30 June 2028 |
| Date of First Procurement Plan: 6 June 2022 | Date of this Procurement Plan: 24 October 2022 |
| Procurement Plan Duration: 18 months | Related to COVID-19 response efforts: No |
| Advance contracting: Yes | Use of e-procurement (e-GP): Yes |

Source: Asian Development Bank.

## Methods, Review and Procurement Plan

Except as the Asian Development Bank (ADB) may otherwise agree, the following methods shall apply to procurement of goods, works, non-consulting services, and consulting services.

| Procurement of Goods, Works and Non-consulting Services | |
|---|---|
| **Method** | **Comments** |
| Open Competitive Bidding for Works | Nationally advertised. First civil works package per implementing agency is subject to prior review as the risk mitigation measure. |
| Open Competitive Bidding for Goods | Nationally advertised. |
| Request for Quotation for goods and works. | Prior review for first package from each UPTs? followed by post review (sampling). |
| Community Participation in Procurement (works) | For rehabilitation of irrigation and mangrove planting. |

Source: Asian Development Bank.

| Consulting Services | |
|---|---|
| **Method** | **Comments** |
| Quality and Cost Based Selection | Prior review |
| Consultant Qualification Selection | Prior review |
| Direct Contracting | For OIH only and subject to prior review |
| Individual Consultant Selection | Prior review |

Source: Asian Development Bank.

### List of Procurement Packages

The following table lists goods, works, and consulting services contracts for which the procurement activity is either ongoing or expected to commence within the procurement plan duration.

| Goods, Works, and Non-consulting Services | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Package Number** | **General Description** | **Estimated Value (¥000)** | **Procurement Method** | **Review** | **Bidding Procedure** | **Advertisement Date** | **Comments** |
| GD-03 | Equipment for Laboratories (BBPBAP Jepara, BBPBL Lampung, BPIUUK Karangasem, BPBAP Ujung Batee, BPBAP Takalar, BPBAP Situbondo, BPKIL Serang) | ¥548,815.6 | OCB | Post review (sampling) | 1S1E | Q3 2023 | Advertising Type: National<br>No. of Contracts: 1<br>Prequalification of Bidders: No<br>Domestic preference applicable: No<br>Bidding Documents: Goods<br>E-GP: Yes<br>IA: DGA MMAF<br>Procurement by: MMAF procurement committee<br>Technical specifications from pokja UPT |
| GD-04 | Equipment - Mobile Laboratories | ¥75,833.1 | OCB | Prior | 1S1E | Q4 2022 | Advertising Type: National<br>No. of Contracts: 1<br>Prequalification of Bidders: No<br>Domestic preference applicable: No<br>Bidding Documents: Goods<br>Advance contracting: Yes<br>E-GP: Yes<br>IA: DGA MMAF<br>Procurement by: MMAF procurement committee |
| GD-05 | Pond equipment for:<br>BPBAP (Tangerang, Situbondo, Jepara, Pinrang, Takalar)<br>Farmer cluster<br>Farmer pond | ¥1,187.1 | OCB | Prior review | | Q3 2023 | Advertising Type: National<br>No. of Contracts: 14<br>Prequalification of Bidders: No<br>Domestic preference applicable: No |

| Goods, Works, and Non-consulting Services | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Package Number** | **General Description** | **Estimated Value (¥000)** | **Procurement Method** | **Review** | **Bidding Procedure** | **Advertisement Date** | **Comments** |
| | | | | | | | Documents: Standard RFQ for Goods<br>IA: UPTs<br>Procurement by: UPTs procurement committees |
| CW-01 | Broodstock Center Construction | ¥709,263.9 | OCB | Post review (sampling) | 1S1E | Q4 2023 | Advertisement type: National<br>No. of Contracts: 1<br>Prequalification of Bidders: No<br>Domestic preference applicable: No<br>Bidding Documents: Small Works<br>E-GP: Yes<br>National<br>IA: UPT Karengasem<br>Procurement managed by: UPT Karengasem |
| CW-02 | Multiplication Center Construction Takalar | ¥558,768.8 | OCB | Post review (sampling) | 1S1E | Q4 2023 | Advertisement type: National<br>No. of Contracts: 1<br>Prequalification of Bidders: No<br>Domestic preference applicable: No<br>Bidding Documents: Small Works<br>E-GP: Yes<br>IA: UPT Takalar<br>Procurement managed by: UPT Takalar procurement committee |
| CW-03 | Multiplication Center Construction Aceh Besar | ¥838,153.2 | OCB | Post review (sampling) | 1S1E | Q4 2023 | Advertisement type: National<br>No. of Contracts: 1<br>Prequalification of Bidders: No<br>Domestic preference applicable: No |

| Goods, Works, and Non-consulting Services | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Package Number** | **General Description** | **Estimated Value (¥000)** | **Procurement Method** | **Review** | **Bidding Procedure** | **Advertisement Date** | **Comments** |
| | | | | | | | Bidding Documents: Small Works<br>E-GP: Yes<br>IA: UPT Aceh<br>Procurement managed by: UPT Aceh Besar procurement committee |
| CW-04 | Laboratory Construction BBPBAP Jepara | ¥93,323.9 | OCB | Prior | 1S1E | Q3 2023 | Advertisement type: National<br>No. of Contracts: 1 each<br>Prequalification of Bidders: No<br>Domestic preference applicable: No<br>Bidding Documents: Small Works<br>Advance contracting: No<br>E-GP: Yes<br>IA: UPTs<br>Procurement by: UPTs procurement committees |
| CW-05 | Laboratory Construction BBPBL Lampung | ¥93,323.9 | OCB | Prior | 1S1E | Q3 2023 | |
| CW-06 | Laboratory Construction BPIUUK Karangasem | ¥93,323.9 | OCB | Prior | 1S1E | Q3 2023 | |
| CW-07 | Laboratory Construction BPBAP Ujung Batee | ¥93,323.9 | OCB | Prior | 1S1E | Q3 2023 | |
| CW-08 | Laboratory Construction BPBAP Takalar | ¥93,323.9 | OCB | Prior | 1S1E | Q3 2023 | |
| CW-09 | Laboratory Construction BPBAP Situbondo | ¥93,323.9 | OCB | Prior | 1S1E | Q3 2023 | |
| CW-10 | Laboratory Construction BPKIL Serang | ¥60,660.6 | OCB | Prior | 1S1E | Q3 2023 | |
| CW-11 | Construction of Ponds, WWTP, Irrigation & Drainage, Farm Road in Mauk, Tangerang (under BBPBAP Jepara) | ¥98,800.6 | OCB | Post review (sampling) | 1S1E | Q4 2023 | Advertisement type: National<br>No. of Contracts: 1 each<br>Prequalification of Bidders: No |

| Goods, Works, and Non-consulting Services | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Package Number** | **General Description** | **Estimated Value (¥000)** | **Procurement Method** | **Review** | **Bidding Procedure** | **Advertisement Date** | **Comments** |
| CW-12 | Construction of Ponds, WWTP, Irrigation & Drainage, Farm Road in BPBAP Situbondo | ¥71,786.9 | OCB | Post review (sampling) | 1S1E | Q4 2023 | Domestic preference applicable: No<br>Bidding Documents: Small Works<br>E-GP: Yes<br>IA: UPTs<br>Procurement by: UPTs procurement committees |
| CW-13 | Construction of Ponds, WWTP, Irrigation & Drainage, Farm Road in BBPBAP Jepara | ¥69,162.5 | OCB | Post review (sampling) | 1S1E | Q4 2023 | |
| CW-14 | Construction of Ponds, WWTP, Irrigation & Drainage, Farm Road in BBPBAP Takalar, Instalasi Pinrang | ¥121,651.0 | OCB | Post review (sampling) | 1S1E | Q4 2023 | |
| CW-15 | Construction of Ponds, WWTP, Irrigation & Drainage, Farm Road in BBPBAP Takalar, Instalasi La garuda | ¥121,651.0 | OCB | Post review (sampling) | 1S1E | Q4 2023 | |

Source: Asian Development Bank.

| Consulting Services | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Package Number** | **General Description** | **Estimated Value (¥000)** | **Selection Method** | **Review** | **Type of Proposal** | **Advertisement Date** | **Comments** |
| CS-01 | Broodstock and multiplication centers advisory services | ¥661,690.6 | Direct Contracting | Prior | Full technical proposal | Q3 2022 | Type: Firm<br>Advertising: N/A<br>Expertise: Transfer of technology from the Ocean Institute Hawaii<br>Procurement by: MMAF procurement committee<br>Advance Procurement<br>e-GP: No |
| CS-02 | Project Management and Regional Technical Consultant | ¥988,185.9 | QCBS | Prior | Full technical proposal | Q3 2022 | Type: Firm<br>Advertising: National<br>Ratio: 80:20<br>IA: MMAF<br>Procurement by: MMAF procurement committee |

| Consulting Services | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Package Number** | **General Description** | **Estimated Value (¥000)** | **Selection Method** | **Review** | **Type of Proposal** | **Advertisement Date** | **Comments** |
| | | | | | | | Advance Procurement |
| CS-03 | Asset Management Information System Development | ¥70,917.2 | QCBS | Prior | Simplified technical proposal | Q3 2022 | Type: Firm<br>Advertising: National<br>Ratio: 80:20<br>IA: MMAF<br>Procurement by: MMAF procurement committee<br>Advance Procurement |
| CS-04a | External Monitoring Agency (Aceh) | ¥9,455.6 | CQS | Prior | Simplified technical proposal | Q4 2023 | Type: Firm<br>Advertising: National<br>IA: MMAF<br>Procurement by: MMAF procurement committee |
| CS-04b | External Monitoring Agency (Lampung and Banten) | ¥9,455.6 | CQS | Prior | Simplified technical proposal | Q4 2023 | Type: Firm<br>Advertising: National<br>IA: MMAF<br>Procurement by: MMAF procurement committee |
| CS-04c | External Monitoring Agency (Central Java, East Java, and Bali) | ¥9,455.6 | CQS | Prior | Simplified technical proposal | Q4 2023 | Type: Firm<br>Advertising: National<br>IA: MMAF<br>Procurement by: MMAF procurement committee |
| CS-04d | External Monitoring Agency (South Sulawesi) | ¥9,455.6 | CQS | Prior | Simplified technical proposal | Q4 2023 | Type: Firm<br>Advertising: National<br>IA: MMAF<br>Procurement by: MMAF procurement committee |
| CS-05 | Project Facilitators (68 facilitators) | ¥523,656.5 | ICS | Prior | | Q1 2023 | Type: Individual<br>Advertising: National<br>IA: MMAF<br>Procurement by: UPTs |

1S1E = One Stage One Envelope, BBPBAP = *Balai Besar Perikanan Budidaya Air Payao*, BPIUUK = *Balai Produksi Induk Udang Unggul Dan Kekerangan*, BPKIL = Balai Pengujian Kesehatan Ikan dan Lingkungan; CP = Community Participation, CPP = Community Participation in Procurement, CQS = consultant qualification selection, CS = Consultancy Services, CW = Civil Works, DGA = Directorate General of Aquaculture, e-GP = e-Government Procurement, GD = Goods, IA = implementing agency, ICS = individual consultant selection, MMAF = Ministry of Marine Aquaculture and Fisheries, OCB = open competitive bidding, QCBS = quality and cost based selection, RFQ = request for quotations, UPT = technical operating units, WWTP = wastewater treatment plant.
Source: Asian Development Bank.

## List of Indicative Packages (Contracts) Required under the Project

The following table lists goods, works, and consulting services contracts for which procurement activity is expected to commence beyond the procurement plan duration and over the life of the project.

| Goods, Works and Nonconsulting Services | | | | | | |
|---|---|---|---|---|---|---|
| **Package Number** | **General Description** | **Estimated Value (¥000)** | **Procurement Method** | **Review** | **Bidding Procedure** | **Comments** |
| GD-01 | Equipment for Broodstock Center | ¥436,387.5 | OCB | Post review (sampling) | 1S1E | Advertising Type: National<br><br>No. of Contracts: 1<br>Prequalification of Bidders: No<br>Domestic preference applicable: No<br>Bidding Documents: Goods<br>E-GP: Yes<br>IA: DGA MMAF<br>Procurement by: MMAF procurement committee |
| GD-02 | Equipment for Multiplication Centers | ¥445,746.5 | OCB | Post review (sampling) | 1S1E | Advertising Type: National<br>No. of Contracts: 1<br>Prequalification of Bidders: No<br>Domestic preference applicable: No<br>Bidding Documents: Goods<br>E-GP: Yes<br>IA: DGA MMAF<br>Procurement by: MMAF procurement committee |
| GD-06 | Procurement of mangrove or other species seeds (50,000 saplings) | ¥6,977.5 | RFQ | Post review (sampling) | | Advertising Type: National<br>No. of Contracts: 7<br>Prequalification of Bidders: No<br>Domestic preference applicable: No<br>Bidding<br>IA: UPTs<br>Procured by: UPTs procurement committee |
| GD-07 | Procurement of inputs | ¥317,142.5 | RFQ | Post review (sampling) | | Advertising Type: National<br>No. of Contracts: 14<br>Prequalification of Bidders: No |

| Goods, Works and Nonconsulting Services | | | | | | |
|---|---|---|---|---|---|---|
| **Package Number** | **General Description** | **Estimated Value (¥000)** | **Procurement Method** | **Review** | **Bidding Procedure** | **Comments** |
| | | | | | | Domestic preference applicable: No<br>Bidding<br>IA: UPTs<br>Procured by: UPTs procurement committee |
| CW-16 | Construction of Ponds, WWTP, Irrigation & Drainage, Farm Road in Farmers Cluster (type 1) | ¥1,532,089.6 | OCB | Post review (sampling) | 1S1E | Advertisement type: National<br>No. of Contracts: 23<br>Prequalification of Bidders: No<br>Domestic preference applicable: No<br>Bidding Documents: Small Works<br>E-GP: Yes<br>IA: UPT<br>Procurement by: UPTs procurement committees |
| CW-17 | Construction of Farmers Ponds (Upgrading with Mulsa-HDPE, communal WWTP) (type 2) | ¥1,208,957.9 | OCB | Post review (sampling) | 1S1E | Bidding Documents: Standard RFQ for Works IA: UPT<br>No. of Contracts: 24<br>Procurement by: UPTs procurement committees |
| CP-01 | Individual wastewater treatment facilities (220 packages) (type 3) | ¥674,119.4 | CPP | | | Local<br>IA: UPT<br>E-GP: No<br>Procurement by: UPTs procurement committees |

Source: Asian Development Bank.

| Consulting Services | | | | | | |
|---|---|---|---|---|---|---|
| **Package Number** | **General Description** | **Estimated Value (¥million)** | **Selection Method** | **Review** | **Type of Proposal** | **Comments** |
| | None | | | | | |
| | | | | | | |
| | | | | | | |

1S1E = One Stage One Envelope, CP = Community Participation, CPP = Community Participation in Procurement, CW = Civil Works, DGA = Directorate General of Aquaculture, E-GP = e-Government Procurement, GD = Goods, HDPE = high density Polyethylene, IA = implementing agency, MMAF = Ministry of Marine Aquaculture and Fisheries, OCB = open competitive bidding, RFQ = request for quotations, UPT = technical operating units, WWTP = wastewater treatment plant.
Source: Asian Development Bank.

.

## CONSULTING SERVICES

| | NAME | DESCRIPTION |
|---|---|---|
| CS-01 | Broodstock and multiplication centers advisory services (Oceanic Institute of Hawaii) | Firm (International) procured by DGA |
| CS-02 | Project Management and Regional Technical Consultant | Firm (National) procured by DGA |
| CS-03 | Asset Management Information System Development | Firm (National) procured by DGA |
| CS-04a | External Monitoring Agency (EMA) (Aceh) | Firm (National) procured by DGA |
| CS-04b | External Monitoring Agency (EMA) (Lampung and Banten) | Firm (National) procured by DGA |
| CS-04c | External Monitoring Agency (EMA) (Central Java, East Java, and Bali) | Firm (National) procured by DGA |
| CS-04d | External Monitoring Agency (EMA) (South Sulawesi) | Firm (National) procured by DGA |
| CS-05 | Project Facilitators | Individual (National) Procured by UPTs |

Source: Asian Development Bank and Ministry of Marine Affairs and Fisheries.

## CONSULTING SERVICES TABLE

| Consultant | Person-Months | Remarks |
|---|---|---|
| **Broodstock and multiplication centers advisory services** | | |
| **Oceanic Institute Hawaii** | TBC | Lumpsum package |
| | | |
| | | |
| **Project Management and Regional Technical Consultant** | | |
| Aquaculture Specialist (Team Leader) | 58 | Cover all regions |
| Aquaculture specialist (Deputy team leader) | 58 | Cover all regions |
| Aquaculture specialist (Site Adviser) | 116 | W & E Region |
| Financial management Specialist | 120 | PMU + 2 Region (W & E) |
| Procurement Specialist | 72 | PMU + 2 Region (W & E) |
| Social safeguards and Community Development Specialist | 120 | PMU + 2 Region (W & E) |
| Environment safeguard specialist | 120 | PMU + 2 Region (W & E) |
| Gender Equality Specialist | 90 | PMU + 2 Region (W & E) |
| M&E specialist | 118 | PMU + 2 Region (W & E) |
| Training Specialist | 60 | PMU + 2 Region (W & E) |
| GIS specialist | 24 | Cover all regions |
| Capacity building specialist | 36 | Cover all regions |
| Legal Specialist | 5 | Cover all regions |
| Laboratory Design Specialist | 3 | Cover all regions |
| **Technical specialists** | | |
| Private Sector Engagement Specialist | 17 | Cover all regions |
| Micro Finance Specialist | 20 | Cover all regions |
| Hydraulic Engineer | 36 | Cover all regions |
| Water Building Engineer | 18 | Cover all regions |
| Geodetic Engineer | 36 | Cover all regions |
| Structure Engineer | 36 | Cover all regions |
| CAD operator | 36 | Cover all regions |
| Surveyor (2 persons) | 72 | Cover all regions |
| Supervision assistant (2 persons) | 120 | Cover all regions |
| Finance Assistant | 240 | Cover all regions |
| Supporting staff | 540 | PMU + 2 Region (W & E) |
| **Asset management information system development** | | |
| IT developer | 6 | Cover all regions |
| Web base interface developer | 4 | Cover all regions |
| Android programmer | 4 | Cover all regions |
| GIS specialist | 6 | Cover all regions |
| Remote Sensing Specialist | 4 | Cover all regions |
| **External Monitoring Agency (EMA)** | | |
| External Monitoring Agency (EMA) | 4 Packages for 5 yrs | Lumpsum packages |
| **Field facilitators – to be recruited by each UPT (3 persons per district)** | | |
| Technical field facilitator (2 persons per district) | 1764 | 2 per district x 21 districts |
| Business development field facilitator (1 person per district) | 756 | 1 per district x 21 districts |

Region 1. Jawa, Lumpung and Bali (Include PMC), Region 2. AcehRegion 3. South Sulawesi
Source: Asian Development Bank and Ministry of Marine Affairs and Fisheries.

## TERMS OF REFERENCE FOR CONSULTING SERVICES
## Background (COMMON TO ALL CONSULTING PACKAGES)

1. The proposed Infrastructure Improvement for Shrimp Aquaculture Project (IISAP, the "Project") will help the Ministry of Marine Affairs and Fisheries (MMAF) in introducing sustainable shrimp aquaculture and improving transparency, and traceability processes towards increased productivity, quality, profitability, and environment sustainability of smallholder's shrimp farming. The project will deliver an integrated investment addressing upstream, production, and downstream processes through delivery of infrastructure, support to improve farming practices and post-harvest systems, and value chain strengthening in selected locations. The project will deliver three outputs: (i) Output 1: quality and sustainability of inputs for shrimp production increased; (ii) Output 2: Sustainable and climate adaptive aquaculture infrastructure and services developed; and (iii) Output 3: shrimp aquaculture supply chain strengthened.

2. The project is aligned with the following impact: contribution of the fisheries sector to the national economy and value added of aquaculture increased. The outcome is productivity, profitability, and environment sustainability of shrimp aquaculture increased.[1]

3. **Output 1: Quality and sustainability of inputs production increased.** This output will finance the development of a modern broodstock center and two multiplication centres to provide smallholders access to affordable and quality whiteleg shrimp broodstock. The project will facilitate transfer of knowledge from the Ocean Institute of Hawai to MMAF in producing high quality genetic shrimp fry. To control quality of broodstock and juveniles and water quality in production facilities, the project will finance construction, modernization, and climate and disaster proofing of seven laboratories under MMAF.[2] Facilities financed under the project will be incorporate gender responsive and inclusive features.[3] The project will purchase equipment and train MMAF staff in operating and maintaining these facilities.[4] This output will also help small and medium seed suppliers to comply with national broodstock breeding protocols, good hatchery practices, and biosecurity and environment monitoring. This output will also strengthen farmers capacity in producing their own feed. A grant proposed for funding under the Global Environment Facility will complement those activities by engaging feed suppliers in diversifying raw material for feed to reduce reliance on fish wildcatch and on imported raw material.

4. **Output 2: Sustainable aquaculture infrastructure and services developed.** This output will support establishment and strengthening of farmer-based enterprises enabling smallholders to consolidate their production facilities under a cluster approach. Accordingly, the project will support them in developing sustainable aquaculture development plan (SADP) as the basis for investment in their respective clusters. This SADP will help farmers to access to credits and develop partnerships with the private sector as relevant. The project will upgrade farmers groups production facilities introducing a sustainable aquaculture model.[5] Selected MMAF production facilities will also be upgraded following this model as demonstration sites. The sustainable aquaculture model aims to increase production, while minimizing impact on the ecosystem by allowing mangrove to grow in parts of the cluster complemented with water

[1] The project locations will be confirmed during project preparation.
[2] Benefiting from the MMAF's partnership with the University of Arizona.
[3] These include, but are not limited to, lactation rooms, separate male and female toilets, and separate male and female prayer rooms.
[4] The training programs will cover, but no limited to: (i) operating broodstock and multiplication centers; (ii) laboratory management, and disease surveillance and monitoring.
[5] This includes provision of inlet reservoir to stabilize water, wastewater treatment facility, canal and ponds upgrading, and replanting of mangroves in inlet and outlet canals to improve water quality.

treatment facilities. For each cluster, the project will (i) rehabilitate or upgrade associated infrastructure (canals, drains, production roads, and access to the electricity grid),[6] and (ii) purchase equipment towards modern aquaculture production.[7] MMAF will establish operation and maintenance guidelines and upgrade its infrastructure registry information system to a full asset management information system to ensure sustainability of the investments made under the project. Where suitable, farmers will plant and manage mangrove trees in inlet and outlet canals and along the shoreline, helping to reduce soil erosion and improve water quality. The project will strengthen famers technical capacity to adhere the INDOGAP guidelines towards economically and environmentally sustainable and viable shrimp production;[8] and to better manage water quantity and quality, and disease.

5. **Output 3: Shrimp aquaculture value chain strengthened.** This output will support value chain downstream processes for shrimp aquaculture. This output will purchase post-harvest equipment,[9] and build farmers' capacity in food safety, handling and cold chain management, food safety, transformation, and marketing. Towards improved transparency, the project will facilitate registration of broodstock and feed suppliers, farmers, aggregators, and processors into the INDOGAP system and to register transactions in the MMAF's STELINA. Stelina traceability and INDOGAP certification information will be integrated into the Satu Data centralized information system of MMAF. Towards an harmonized regulatory framework, the project will assist MMAF in preparing quality standards, reviewing and rationalizing regulations and incentive systems for sustainable aquaculture. This output will also support the executing and implementing agencies to undertake project supervision and strengthen their capacities, considering social and gender dimensions. Under the proposed GEF grant, the Ministry of National Development Planning (BAPPENAS) will prepare a National Action Plans for Shrimp Aquaculture adopting Aquaculture Management Area (AMA) approach including climate change mitigation and resiliency and conduct strategic coordination to institutionalize sustainable aquaculture development nationwide.[10]

6. **Approach.** The project will apply a sector lending approach in selecting subprojects that are outside MMAF land.[11] To be financed under the project, these subprojects will need to comply with the applicable selection criteria. For each subproject, a Sustainable Aquaculture Development Plan (SADP) will be prepared.

7. **Project locations.** The project will support traditional shrimp farming and upgrading of MMAF facilities across Aceh, Bali, Banten, Central Java, East Java, Lampung, and South Sulawesi provinces.

---

[6] The project will assess water balance and water quality to ensure a fair water allocation among water users and include climate and disaster proofing, and gender responsive and inclusive features. The project will exclude clusters requiring land acquisition and/or resettlement.

[7] Equipment includes among others wastewater equipment, power generation, water pumping, paddle wheel, generator, HDPE liner, grower and finisher for shrimp feed, spiral and plastic hose, DO meter, pH meter, refractor salinometer.

[8] Teknik Budidaya Udang Vaname (*Litopenaeus Vannamei*) https://kkp.go.id/an-component/media/upload-gambar-pendukung/DJPB_BBPBAP%20JEPARA/ Juknis%20Udang%20Vaname.pdf.
Standar Operasional Prosedur Pembesaran Udang Vaname di Tambak Milenial (MSF) https://kkp.go.id/an-component/media/upload-gambar-pendukung/DJPB/SOP/sop%20msf.pdf.
Best Aquaculture Practices Standard for farm https://www.bapcertification.org/Downloadables/pdf/PI%20-%20Standard%20-%20Farm%20Standard%20-%20Issue%203.0%20-%2001-March-2021-GSA.pdf.

[9] Processing, packaging, and logistics.

[10] This activity is proposed for funding under the Global Environment Facility.

[11] Those include canals, water treatment and production facilities outside MMAF land. A subproject is defined as a cluster of farmers within a hydraulic unit or tertiary block.

8. **Implementation arrangements** MMAF through the Directorate General of Aquaculture (DGA) will be the executing agency. DGA will establish a project management unit, responsible for project implementation, monitoring, and reporting. MMAF technical operating units (UPTs) will be implementing agencies, under which project implementation units (PIUs) will be established. Project activities will be coordinated with District Fisheries Agencies. A steering committee, including BAPPENAS and concerned sectoral ministries, will be set up to ensure (i) integration with regional development priorities, and (ii) coordination with the Ministry of Public Works and Housing for the provision of primary and secondary irrigation and drainage infrastructure.

9. The consultants will be engaged in accordance with the ADB Procurement Policy (2017, as amended from time to time) and Procurement Regulations for ADB Borrowers (2017). It is mandatory requirement that all national experts should have sufficient fluency in English. The implementing agency will assign counterparts within the Government for each of the consultant listed here to ensure continuity and knowledge transfer between the team of consultants and counterpart staff.

## A. CS01: Broodstock and Multiplication Centers Advisory Services

### 1. Objectives of the Assignment

10. The objective of this assignment is to enable Indonesia to become self-sufficient in their shrimp broodstock needs so that the industry will not have to be dependent on imported broodstock in the future. The technical goal is to produce specific pathogen free ("SPF"), selectively bred Pacific white shrimp, *Litopenaeus vannamei*, which exhibit fast growth, high survival, and good reproductive performance in Indonesia.

### 2. Scope and Detailed Tasks

11. Oceanic Institute of Hawaii Pacific University (OI) will provide the Indonesian Government through the Ministry of Marine Affairs and Fisheries (MMAF) with the following technical services: (i) operate a Hawaii Breeding Program ("HBP"), on behalf of the MMAF, to develop families of specific pathogen free ("SPF") Pacific white shrimp, *Litopenaeus vannamei*, which perform well under the unique conditions in Indonesia while minimizing inbreeding and maintaining genetic diversity; (ii) design, implement, and provide scientific oversight of a shrimp breeding program in Indonesia ("Indonesia Breeding Program", "IBP") with the goal of producing SPF *L. vannamei* broodstock selected for fast growth, high survival, and good reproductive performance; (iii) provide design criteria documents for facilities housing the IBP, including a Nucleus Center ("NC") and Multiplication Broodstock Centers ("MBC"); (iv) train MMAF staff on all technical aspects associated with operating a breeding program, including training on the management of field evaluations, broodstock grow-out, and biosecurity; (v) use shrimp molecular markers and associated methodologies to increase genetic gain, and (vi) provide data analysis and remote oversight of breeding operations.

12. The objective of this assignment is to produce SPF, selectively bred *L. vannamei* which exhibit fast growth and high survival on commercial shrimp farms in Indonesia, and good reproductive performance in commercial shrimp hatcheries. To achieve this objective, OI will establish a large-scale genetic improvement program which consists of a Hawaii Breeding Program ("HBP") located at OI's Genetic Nucleus facilities ("OI-GN") in Hawaii, USA and an in-country breeding program, referred as the Indonesia Breeding Program ("IBP"), to be located at a Nucleus Center ("NC") to be constructed by the MMAF in Indonesia, possibly at Karangasem on Bali, Indonesia. OI will provide design criteria documents for the NC, as well as for Multiplication Broodstock Centers ("MBC") possibly located in Aceh and South Sulawesi, Indonesia. OI also will be responsible for developing standard operating procedures for these facilities and training MMAF staff in all aspects of operating the NC and MBC.

13. This proposed assignment will take advantage of OI's existing shrimp breeding program developed over the past 25 years. For more than a decade, OI has been working with MMAFs in Asia to develop families of SPF *L. vannamei* which have been selectively bred for rapid growth and high survival under commercial farming conditions in Asia. During this time, OI has evaluated more than 1,000 shrimp families. Average genetic improvement rates for growth were 5% per year and the project has developed a large number of shrimp families which exhibit growth rates > 0.30 grams/day and survival > 80% during evaluations at commercial farms. OI regards these populations of shrimp as a valuable asset for the MMAF and looks forward to using this asset in the establishment of a NC and MBC for *L. vannamei* in Indonesia.

14. Although the magnitude of genetic improvement has been encouraging to date, the proposed project will increase genetic gains for grow-out performance, while making significant

improvements in reproductive performance via threshold selection and maintaining sufficient genetic diversity for the long-term sustainability of the breeding program. For example, growth is projected to improve by ~54% over the course of this 5-year project (Table 1).

15. A two-stage selection process will be implemented whereby cohorts of genetically diverse shrimp families from the HBP will be evaluated in Indonesia and the best-performing families from each cohort will be selected and bred at OI (see Appendix A). Offspring from selected families will then be transferred to the IBP where a second round of breeding, evaluation, and selection will occur. Top-performing families from each IBP cohort will be selected and shrimp from these families will be reared to broodstock. Selected broodstock will be used for production of post-larvae (PLs) which will be grown to broodstock either at the IBP in Karangasem or at an MBC in Aceh or South Sulawesi. OI will be responsible for management/analysis of genetic data generated by the HBP and IBP. In addition, OI will provide MMAF staff with breeding plans for each breeding cycle.

16. Selection intensities for the HBP will be appropriate to achieve moderate levels of genetic gain while maintaining the long-term viability of the nucleus breeding population (i.e. minimize inbreeding). Selection procedures in the IBP will be more intense as these stocks will not be needed for long-term breeding activities. This will allow for additional improvements in reproductive and growout performance above those achieved by the HBP. In addition to increased selection intensities and subsequent performance improvements, additional advantages of this program are the biosecurity of, and the genetic security provided by, the HBP. The HBP will be located in Hawaii, isolated from commercial shrimp-farming activities. Thus, the risk of viral infection at the HBP is much lower than for the IBP. If IBP shrimp become infected, the HBP can quickly repopulate IBP facilities after disinfection procedures are completed. This will minimize the time needed to get breeding and/or broodstock production activities reestablished in Indonesia.

### 3. Hawaii Breeding Program (HBP)

17. **Approach**: OIH will operate the HBP at the OI-GN in Hawaii, USA. Shrimp families to be used as founders for this project will be selected from breeding stocks currently in OI's long-standing breeding program. Shrimp in the HBP will be subjected to OI's rigorous disease surveillance regime and will be free of all pathogens listed in Appendix E.

18. Three cohorts of families will be produced each year for Years 1-4 of the project and one cohort will be produced in Year 5 (Appendix A, Step 1). All families will be evaluated for spawn size (i.e. number of viable *nauplii*) and hatchery survival. Truncation selection will be used on these traits with initial selection criteria of ≥100,000 *nauplii* for spawn size and ≥ 40% for hatchery survival. It is anticipated that these criteria will increase over the course of the project. Within each cohort, 40–50 families, with mean phenotypes at or above selection criteria for both spawn size and hatchery survival, will be used for a Nucleus Evaluation Stream ("NES"). Selection criteria may be adjusted to assure that each NES is comprised of at least 40 families (but not to exceed 50 families). Post larval or juvenile shrimp from all NES families will be shipped to MMAF for grow out evaluation at a commercial shrimp farm in Indonesia (Appendix A, Step 2). Expansion of grow out evaluations to include multiple farms may be necessary to select for regional (within Indonesia) or environment-specific shrimp performance (e.g. growth and survival at low salinity). If so, expansion details and changes to fees/payment structure must be agreed to by OI and MMAF prior to the expansion of grow out evaluations. Stocking densities and management protocols for the grow-out evaluations will be similar to those used on commercial shrimp farms

in Indonesia. MMAF staff will be responsible for managing cages and ponds and for providing technical support during stocking and harvesting of grow-out evaluations. When mean shrimp weight is approximately 20g (or target weight preferred by MMAF), grow out evaluations will be harvested, and shrimp performance data will be collected. In addition to grow-out evaluations in Indonesia, NES shrimp will be evaluated for grow out performance at the OI-GN. Disease challenges and selection for specific pathogen(s) can be easily incorporated in the HBP and IBP at the request of MMAF. In addition, OI will use a 50,000 SNP-chip to identify genes involved with traits of interest, including disease resistance. Molecular data will be incorporated into OI's breeding program via marker-assisted and/or genome-wide selection. Both of these approaches have the potential to greatly increase the rate of genetic gain for resistance to specific pathogens.

19. Grow-out performance data (growth and pond survival), reproductive performance data, disease-challenge results, genetic marker information, and genetic relatedness/inbreeding information will be collected and analyzed at OI and will be used to select the top-performing families (Appendix A, Step 3). Within-family selection for size, and/or genetic marker profile, will be conducted on selected families. Selected individuals from the top families will be grown to broodstock at OI and used to produce the next generation of selectively bred families for the HBP, as well as to produce a population of post larvae (referred to as Germplasm Stream; "GS") which will be transferred from OI to the IBP (Appendix A, Step 4).

20. A total of 13 NESs will be produced at OI and sent to Indonesia and 13 grow out evaluations will be conducted at a commercial farm in Indonesia in Years 1-5 (Appendix F). A total of 13 GSs will be produced at the OI-GN and sent to Indonesia. The first three GS and part of GS-4 (see Appendix F) will be offspring (shipped as PLs) of NES families selected using data from Indonesia grow out evaluations. These shrimps will be grown to broodstock at MBC(s) and distributed to hatchery operators in Indonesia (referred to as "commercial broodstock"). The remaining GSs, as well as part of GS-4 (GS-4B) will be broodstock from NES families selected using data from Indonesian grow out evaluations. These GSs (GS-4B – GS-13) will be sent to the NC and used as broodstock in the IBP.

### 4. Indonesia Breeding Program

21. **Approach:** OI will assist CLIENT with the design and startup of the NC at Karangasem. The NC will be designed to accommodate the breeding and broodstock production goals of the IBP (see **Appendices A and F**). It will have facilities (referred to as "modules") for larvae production/rearing ("hatchery module"), holding juvenile shrimp from a large number of selectively bred shrimp families ("nursery module"), and for production of high quality broodstock ("broodstock module"). Large-scale grow out of broodstock will be conducted at separate MBCs in Aceh and South Sulawesi. OI will provide CLIENT with a design criteria document which will include detailed floorplan designs for each module, required environmental/culture conditions, and culture system details such as the number and size of tanks, number and size of pumps and filters, and other relevant equipment/supplies. In addition, OI will assist CLIENT in developing Standard Operating Procedures (SOPs) for each module based on OI's experiences in managing a family-based selection program for *L. vannamei*. SOPs will be developed for maturation, larval rearing, water quality management, live feeds production, nursery rearing, tagging, grow-out evaluation, and broodstock grow-out for *L. vannamei*.

22. OI will assist CLIENT in the establishment and scientific oversight of the IBP. OI will develop hatchery/field evaluation protocols, provide stock management plans, and will be responsible for all data analysis and shrimp family selections. OI scientists will be present at the

NC during a portion of Years 2 & 3 to oversee breeding program activities, train relevant CLIENT staff, adjust SOPs (if needed), and assist with data collection. In addition, OI staff will periodically observe breeding program activities in Years 3-5 for quality control purposes.

23. CLIENT will receive a total of 10 GSs (4B-13) at the NC. Shrimp from each GS (400 broodstock) received at the NC will be used to produce a large number (≥60) of new families (**Appendix A**, Step 5). It is anticipated that ~400 broodstock (200 males and 200 females) from each GS will be needed to evaluate maturation performance and produce new families for hatchery and grow out performance evaluations (Indonesia Evaluation Stream; IES). The first breeding run (production of IES families) at the NC will begin in the fourth quarter of Year 2 (see **Appendix F**). There will be one (1) breeding run at the NC for each GS received. Thus, there will be one (1) breeding run in Year 2 and three (3) breeding runs per year in Years 3-5, and an additional three (3) breeding runs in Year 6 (post-project; operated entirely by CLIENT unless the contract is extended). IES families will be selected for spawn size and hatchery survival using truncation selection with initial selection criteria of ≥ 100,000 *nauplii* for spawn size and ≥40% for hatchery survival. It is anticipated that these values will increase over the course of the project. Within each IES cohort, families with mean phenotypes at or above selection criteria for both spawn size and hatchery survival will be further evaluated for grow-out performance. [Note: selection criteria may be adjusted to assure that ≥ 30 families are evaluated for grow-out performance]. PLs from each IES family selected for grow out evaluation will be stocked into individual (family) tanks in the nursery module of the NC. In addition, PLs or tagged juveniles will be stocked into small cages or “hapas” at a test farm for grow-out evaluation (**Appendix A**, Step 6). If tagging is required, OI scientists will train relevant CLIENT staff and provide a list of recommended tagging equipment/supplies. Growth and survival of IES families at the test farm will be determined after ~40-50 days. These data, along with parentage/relatedness data (e.g., dam contributions), will be used to select the top-performing families in each IES (**Appendix A**, Step 7). Within-family selection for size, and/or genetic marker profile, will be carried out on selected families.

24. Selected sub-adults from top performing IES families (Select Stream; SS) will be transferred from the nursery module to the broodstock module for grow out to broodstock (**Appendix A**, Step 8). The broodstock module will receive one (1) SS from each breeding/evaluation cycle at the NC (i.e., from each IES). SS juveniles will be stocked in tanks/ponds and reared to broodstock. When broodstock reach ~8 months old, they will be harvested and poor quality broodstock (small size, shell damage, black spermatophores, etc.) will be culled. The remaining high-quality broodstock will be transferred to the hatchery module of the NC for production of PLs (**Appendix A**, Step 9) intended for broodstock grow-out (Production Stream; PS). Each SS will consist of ~2,000 juvenile shrimp with the initial goal of producing ~1,200 high-quality broodstock. There will be three (3) SS per year in Years 2-5, and an additional three (3) SS in Year 6 (post-project; operated entirely by CLIENT) (see **Appendix F**).

25. PS shrimp will be offspring of SS broodstock. Each PS cohort will consist of ≥30,000 PLs and PLs will be a mix of several high-quality spawns (high spawn size and hatchery survival). There will be one (1) PS in Year 3, three (3) per year in Years 4 & 5, and an additional three (3) PS in Year 6&7 (post-project; operated entirely by CLIENT) (see **Appendix F**). After hatchery rearing is complete, each PS cohort will be transferred to an MBC for grow-out as commercial broodstock (**Appendix A**, Step 10). It is anticipated that ≥15,000 high-quality broodstock will be produced from each PS.

### 5. Consulting Firm

26. The firm will provide the Indonesian Government through the Ministry of Marine Affairs and Fisheries (MMAF) to operate a Hawaii Breeding Program ("HBP") and develop families of specific pathogen free ("SPF") Pacific white shrimp, *Litopenaeus vannamei*; design, implement, and provide scientific oversight of a shrimp breeding program in Indonesia ("Indonesia Breeding Program", "IBP"). The firm will provide design criteria documents for facilities housing the IBP, including a Nucleus Center ("NC") and Multiplication Broodstock Centers ("MBC") and train MMAF staff on all technical aspects associated with operating a breeding program, including training on the management of field evaluations, broodstock grow-out, and biosecurity; use shrimp molecular markers and associated methodologies to increase genetic gain, and provide data analysis and remote oversight of breeding operations.

27. The firm will administer workshops, seminars, surveys, and training activities in accordance with ADB's Technical Disbursement Handbook. All specialists are expected respond to ADB comments and requests during project processing. The firm shall not prepare the TOR for consultants to be recruited in the ensuing loan project. All specialists shall contribute as appropriate to the "Indonesia Breeding Program" (IBP).

### (a) Terms of Reference of Key Specialists

28. The consultants will undertake the following:

(i) To produce SPF, selectively bred *L. vannamei* which exhibit fast growth and high survival on commercial shrimp farms in Indonesia, and good reproductive performance in commercial shrimp hatcheries.
(ii) To establish a large-scale genetic improvement program which consists of a Hawaii Breeding Program ("HBP") located at OI's Genetic Nucleus facilities ("OI-GN") in Hawaii, USA and an in-country breeding program, referred as the Indonesia Breeding Program ("IBP"), to be located at a Nucleus Center ("NC") to be constructed by the MMAF in Indonesia,
(iii) To provide design criteria documents for the NC, as well as for Multiplication Broodstock Centers ("MBC") located in Aceh and South Sulawesi, Indonesia.
(iv) Be responsible for developing standard operating procedures for these facilities and training MMAF staff in all aspects of operating the NC and MBC. associated with operating a breeding program, including training on the management of field evaluations, broodstock grow-out, and biosecurity.
(v) To Increase genetic gain by using shrimp molecular markers and associated methodologies Provide data analysis and remote oversight of breeding operations

### *6.* Deliverables

| Deliverable | Description | By |
|---|---|---|
| ***Hawaii Breeding Program (HBP)*** | | |
| Initial Site Visit | Three (3) OI scientists will accompany CLIENT staff to potential test farms in Indonesia. These farm(s) will be the site of grow-out evaluations for NES and IES families. OI scientists will discuss with, and make recommendations to, CLIENT about infrastructure additions/improvements. These additions/improvements may include establishment of a receiving/acclimation area, water treatment system, other biosecurity measures, and cage installation. OI scientists will need at least three (3) days in Indonesia to complete this task. | Oceanic Institute Scientists |

| Deliverable | Description | By |
|---|---|---|
| Grow-out evaluations | For each grow-out evaluation, OI will transfer a NES (≥150 shrimp/family) to Indonesia for stocking at a test farm(s). NES shrimp will be stocked into 5 cages (4-6 m3) placed in at least two separate ponds at each test farm. The first grow-out evaluation will be stocked during the first quarter of Year 1 and then approximately every four (4) months thereafter until the first quarter of Year 5, resulting in a total of 13 NESs being evaluated in Indonesia (see **Appendix F**). OI will provide experimental procedures for each grow-out evaluation, including, but not limited to, cage design, best management practices, and data collection procedures. OI scientists will remotely monitor shrimp performance, water quality, and feeding rates for each grow-out evaluation and may request changes to management procedures based on these parameters.<br><br>a. Stocking: For each NES, one (1) or two (2) OI scientists will be present in Indonesia to assist with stocking of the grow-out evaluation. OI scientist(s) will need at least three (3) days in country to inventory shrimp by family (just prior to farm stocking), to ensure that cages are accurately stocked, and to review management protocols with CLIENT staff.<br><br>b. Harvesting grow-out evaluations: Approximately sixty (60) days after stocking each grow-out evaluation (or when mean shrimp weight reaches the target harvest weight; e.g. 20 g), two (2) OI scientists will be present in Indonesia to assist with harvesting of cages, data collection, and genetic sampling. OI will provide all necessary equipment for data collection (e.g. electronic balances, computers, and software) and all necessary supplies for genetic sampling. For each harvest, OI scientists will need three (3) days to ensure proper harvesting of cages and for data collection. | Oceanic Institute Scientists |
| Provide Germplasm Stream (GS) | The first GS will be shipped to Indonesia during the fourth quarter of Year 1. Thereafter, GSs will be shipped approximately every four (4) months until the third or fourth quarter of Year 5, resulting in a total of 13 GSs being provided to CLIENT (see **Appendix F**). The first three GS and part of GS-4 will consist of 30,000 PLs each and will be grown out to commercial broodstock at the MBC(s). It is anticipated that 15,000 high-quality commercial broodstock will be produced from each of these GSs. The remaining GSs (GS-4B – GS-13) will consist of 400 broodstock and be used as breeders in the IBP. | Oceanic Institute |
| ***Indonesia Breeding Program*** | | |
| Initial Site Visit and Definition of Breeding Goals: | Up to three (3) OI scientists will spend up to ten (10) days in Indonesia to discuss IBP structure/goals and associated facility requirements with CLIENT staff, as well as conduct site visits to potential locations for the NC and MBCs. | Oceanic Institute Scientists |
| Design Criteria Documents for NC and MBC | Within ninety (90) days after the initial site visit, OI will provide CLIENT with a design criteria documents for NC and MBC that will include detailed floor-plan designs for all three modules, required environmental/culture conditions, and culture system details such as the number and size of tanks, number and size of pumps and filters, and other relevant equipment/supplies. OI staff will travel to Indonesia twice to observe construction progress (Years 1-2). Each trip will require one (1) or more OI scientists to spend up to two (2) days in Indonesia. | Oceanic Institute Staff |

| Deliverable | Description | By |
|---|---|---|
| Operational SOPs | After construction of the NC, OI will work with CLIENT staff to develop operational SOPs for the new facility. SOPs will be codified in a written manual (in English). This deliverable will require two (2) OI scientists to spend six (6) days to inspect the facility, observe standard culture practices in Indonesia, and to provide recommendations for improvement. Written SOPs for the NC and MBCs will be completed within sixty (60) days after returning from the inspection visit. | Oceanic Institute Scientists |
| Evaluation SOPs | By the end of the second quarter of Year 2, OI will provide CLIENT with written hatchery and grow out evaluation protocols for IES evaluations. These protocols will include shrimp sampling procedures, data collection methods, experimental design, data file templates, and data reporting instructions. Protocols may be altered prior to each IES production, depending on effectiveness and feedback from CLIENT staff. | Oceanic Institute Scientists |
| First IES Production, Evaluation, and Selection | OI scientists will be present at the NC during a portion of Years 2 & 3 to oversee breeding program activities, train relevant CLIENT staff, adjust SOPs (if needed), implement evaluation protocols, and assist with data collection. OI scientists will be present during all critical phases of the first IES production, evaluation, and selection. These phases include family production and collection of reproductive data, nursery transfer and stocking of grow out trial, harvesting of IES grow out trial and data collection, selection of IES families (i.e. SS), and transfer of SS to broodstock module. At least one (1) scientist will spend up to six (6) days in Indonesia during each phase (up to 18 days total). | Oceanic Institute Scientists |
| Monitoring of Breeding Activities | OI scientists will periodically inspect breeding program activities in Years 4 & 5 for quality control purposes. This will require one (1) OI scientist to spend up to five (5) days in Indonesia three times per year during Years 4 & 5. | Oceanic Institute Scientists |
| Data Analysis and Selections | OI's geneticist will analyze reproductive and grow out performance data for each IES. Within four (4) weeks of the conclusion of each IES grow out trial, OI will provide CLIENT with family selections (i.e. formation of SS). Selection will be based on shrimp performance and family relatedness (to avoid high levels of inbreeding in offspring). OI will also provide a basic breeding plan for production of PSs using SS broodstock<br><br>OI has access to a 50K SNP-chip optimized for the OI shrimp population. This chip will be used to identify genes involved with traits of interest, including growth and survival. Molecular data will be incorporated into the OI's breeding program via marker-assisted and/or genome-wide selection. Both of these approaches have the potential to greatly increase the rate of genetic gain economically important traits. | Oceanic Institute Geneticist |
| Yearly Progress Meeting | In Years 2-5, two (2) senior OI scientists will visit Indonesia for three (3) days at the end of each year to discuss project progress with CLIENT representatives. OI will provide updates on genetic progress of HNBP stocks, along with summary data on production and evaluation of IBP stocks. | Oceanic Institute Scientists |
| Close-Out Meeting | During the final quarter of Year 5, three (3) OI scientists will hold a three (3) day close-out meeting CLIENT representatives. This meeting will also serve as the yearly progress meeting for Year 5. | Oceanic Institute Scientists |

## B. CS02: Project Management and Regional Technical Consultant

### 1. Objective of the Assignment

29. The project management and regional technical consultants (PMC) will support the MMAF through the Directorate General of Aquaculture (the executing agency) in project management and implementation at national level.

### 2. Scope and Detailed Tasks

30. The PMC will assist (i) DGA in the overall implementation of the project and coordination of the project components, including monitoring and evaluation and reporting; and (ii) UPTs for field implementation including planning and engineering preparation, construction supervision and farmers strengthening.

31. The PMC shall be familiar with all loan documentation, including Project Administration Memorandum (PAM) and preparatory work. There will be six core tasks of the PMC, i.e., (i) planning, administration and management of the project, (ii) technical and management advice to the CPMU, and PIUs, (iii) ensuring compliance of the project implementation to the ADB procurement policies and safeguards guidelines and requirements, and relevant government regulations, (iv) reporting, (v) monitoring and evaluation; and (vi) technical support to UPTs including planning and engineering preparation, construction supervision and farmers strengthening. The consultants will specifically undertake the following tasks, in consultation with the executing and implementing agencies:

### 3. Overall project management support at CPMU

a. Coordination

(i) Proactively assist the CPMU in day-to-day project management and coordination with the respective PIUs and local governments to create synergies and expedite the project implementation.
(ii) Help CPMU, and PIUs (in coordination with the regional consultants for the west and east region) to ensure that all loan covenants and Design and Monitoring Framework (DMF) target indicators are fully complied with and achieved.
(iii) Coordinate the stakeholders and partners at national and local levels to create synergies and expedite the project implementation.
(iv) Assist CPMU, and PIUs to ensure that the implementation of procurement, integrity/anti-corruption, social safeguards, environment and gender activities are complied with the requirements stipulated in the loan documentation. Proactively provide advices and take actions on any procurement and safeguard compliance issues. The aim is to provide quality procurement and safeguard support, reduce safeguard and end-to-end procurement time and improve the delivery of the project outputs;
(v) Establish communication and information channel of project activities to all stakeholders and update it regularly.

b. Safeguards

(i) Ensuring the overall compliance of ADB SPS for environment and social safeguards (CDF, IPPF, MHADP, SADP, IEE and EARF) in the project activities, including grievance redness mechanism (GRM) establishment in each PIUs;
(ii) Develop modules and provide trainings to the field facilitators for implementation of CDF, IPPF, MHADP, SADP, IEE and EARF
(iii) Develop CDF – IPPF implementation modules for guidance to the safeguard's field facilitators and conduct training for the usage the modules, including conducting meaningful consultation, farmer's groups development, and getting land sharing/pooling agreements.

c. Planning, budgeting, financial management, and procurement

(i) Based on the S Curve of the project in the Project Administration Memorandum (PAM), prepare annual workplan and budget allocation planning on a timely manner in accordance with the government's budgeting cycle.
(ii) Prepare consolidated yearly contract awards and disbursement projections.
(iii) Support the CPMU to ensure that the provision of funds is provided timely, loan finance is managed appropriately, withdrawal application is processed properly.
(iv) Support the CPMU in managing the project advance account, replenishment by the withdrawal application submission to ADB, prepare the yearly reconciliation of the advance account, and monitor the loan financial information for reconciliation of the project advance account. Support each PIU for the direct payment process of the loan and grant withdrawal applications.
(v) Support the CPMU and PIUs in developing a financial management manual to guide the project finance staff on internal control measures specific to the project and mapping of project's expenditure categories with the government's chart of account to ensure project's full compliance with government regulations, SAP, and ADB's FM policies to ensure that the project will submit complete financial statements and comply with ADB FM requirements.
(vi) Support the CPMU in preparing and delivering annual consolidated financial reports, timely follow up on the financial audit findings, and the project assets are registered completely in the government asset information system.
(vii) Support the CPMU and PIUs in rolling out the financial management manual and implement financial management action plan of the project.
(viii) Support the CPMU and PIUs in conducting financial analysis to ensure subprojects viability and/or sustainability as part of the subproject assessment.
(ix) Support the CPMU and PIUs in conducting economic benefits analysis on subprojects as part of the subproject assessment.
(x) Assist CPMU and implementing agencies in the procurement of works, goods and services including contract management
(xi) Review bid evaluation and consultant selection reports, prior to the submission to ADB. Ensure quality of the procurement document.

d. Monitoring and reporting

(i) Prepare and maintain project master schedule for overall project implementation. Proactively monitor and take actions promptly if any issue which will cause delayed implementation.
(ii) Establish and maintain a Geographic Information System (GIS)-based project performance monitoring system (PPMS) to monitor progress of the project. Align the PPMS with the MMAF monitoring system.
(iii) Review the submitted project related documents from PIUs and ensure that the documents fully meet with the requirements and are complied with ADB guidelines and government regulations prior to further submission to the respective stakeholders.
(iv) Deliver high quality reports in accordance with reporting requirements stipulated in the loan documentation, including progress, bi-annual environmental safeguards monitoring, social safeguard, gender, financial, and project completion reports and submit the reports timely to respective stakeholders, including to ADB. Prepare draft consolidated financial reports for external auditing purposes. Ensure disclosure requirements are complied with.
(v) Preparation of an M&E guideline for the overall project M&E and PPMS systems.
(vi) Prepare terms of reference for and manage subcontract for baseline, mid term and project completion surveys
(vii) Support the CPMU in the quarterly review of project progress (financial, procurement, safeguards, activity implementation) and preparation of annual reports.

e. Finance Management Assistant

(i) Support in assisting the CPMU in preparing good quality and timely submission of the monthly, quarterly and annual project financial statements;
(ii) Support in helping CPMU in ensuring compliance and due diligence in managing Projrct financial resources;
(iii) Support in assisting the CPMU in managing fund flow in accordance with component and expenditure categories funded by the PROJECT;
(iv) Support in assisting CPMU to develop and to maintain project financial management system (including procedures for accounting, financial reporting and auditing and loan disbursement for the PROJECT;
(v) Support in identifying any issues in the financial management system for project implementation and recommend measures to address the issues identified;
(vi) Support in assisting the CPMU and PIUs in preparing annual budgets for PROJECT activities;
(vii) Support assisting CPMU to process loan withdrawal applications in accordance with ADB's and government procedures;
(viii) Support in assisting CPMU to prepare and update continuously financial records, projections, and reports of the PROJECT in accordance with procedural requirements of ADB and the government;
(ix) Support in managing day to day project expenditure and log book;

(x) Support in monitor, record, and keep updated status of PROJECT financial expenditures per loan categories/components from time to time;
(xi) Support in assisting the CPMU in preparing a consolidated project financial statement;
(xii) Support the CPMU in preparing audit by internal/external auditor;
(xiii) Support in developing capacity of executing and implementing agencies in the field of financial management, including planning and organizing financial management training for EA/IA/PIUs staff;
(xiv) Support in providing timely inputs on financial related matters to the CPMU for preparing project reports;
(xv) Collaboration with ADB-financed consultants engaged in monitoring and financial management for PROJECT.

**4. Technical support across the project at CPMU**

(i) Preparation of manuals/guidelines/modules for the training of project facilitators. This includes introduction to project, selection of project beneficiaries, SADP process, coordination mechanism, gender and social inclusion mainstreaming, M&E, etc. Training of field technicians/ facilitators will be conducted in collaboration with an aquaculture institution.
(ii) Preparation of manuals/guidelines/modules for the training/workshop of government instances planned in the early stage of project implementation. This includes: MMAF staff, UPT& UPTD staff and extension workers.
(iii) Review and upgrading of manuals/guidelines/modules for the training/ socialization of farmers and other project beneficiaries. This includes: Good Hatchery Practice (CPIB), Good Aquaculture Practices (CBIB), feed self-sufficiency protocols and Self-sufficient Feed Systems (GERPARI), water management, harvest and post-harvest handling, farmer organizations, improving the capacity of farmers, financial literacy, etc. Several trainings will be provided by external service providers who will be in charge of this preparation work under the guidance of the PMC.
(iv) The identification and contracting of service providers for financial literacy education, support to farmer organizations and MSMEs (management, business, group organization).
(v) Consultation work with research institutions on technologies to be promoted for advanced aquaculture, climate resilience, environment-friendly practices.
(vi) Support for the preparation of O&M manuals for infrastructures and equipment supported by the project.

**5. Technical and engineering support at UPTs**

(a) Farmers strengthening
(i) The identification of farmers groups based on agreed selection criteria and establish the mechanism for yearly expansion to more villages.
(ii) Support UPTs in managing facilitators and train them in relation to their respective area.
(iii) Preparation of decrees specifying selection criteria for the core group and expansion farmers.

(iv) Prepare and manage training and services to be provided to the aquaculture farmers groups.
(v) Support facilitators to prepare Sustainable Aquaculture Development Plans for each farmers clusters.
(vi) Support selection of the recipients of material aid (broodstock, *nauplii*, feeds to ensure availability during the first cropping cycle.

(b) Engineering

(i) Conduct surveys and prepare engineering design including cost estimate and bidding document for infrastructure and technical specification for goods/ equipment, listed in table 1 below.
(ii) Function as "the engineer" in supervising and administering civil works contracts and ensuring completion of construction, and closure of contracts in accordance with the contract provisions.
(iii) Supervise the construction of civil works (as per agreed design, timing, procurement method, etc.) and goods/ equipment installation. In the case of civil works progress behind the schedule, prepare a mitigation plan to put the progress back on track, in agreement with UPT and the contractors. If civil works and goods/equipment supply contacts need to be amended, prepare the technical and cost justification/ explanatory note.
(iv) Assist in the implementation of a gender sensitive HIV/AIDS/STI and human trafficking awareness and prevention program. It will be included in civil works contracts.
(v) Assist PIUs and contractors to ensure compliance with ADB's environmental guidelines and monitor the implementation of mitigation measures.

(c) Supporting Staff

32. Some of the project support staff needed are (i) bilingual secretary; (ii) computer operator for preparing project reports and (iii) office girl.

| **Broodstock and Mjultiplication** | **Laboratory** | **UPTs Cluster** | **Shrimp Farmers Provision** | | |
|---|---|---|---|---|---|
| | | | **Type 1** | **Type 2** | **Type 3** |
| Broodstock Center: BPIUUK Karangasem | BBPBAP Jepara | BBPBAP Jepara (Tangerang) | Serang | Serang | Serang |
| | | | Jepara 1 | Jepara 1 | Jepara 1 |
| | BPBAP Situbondo | | Jepara 2 | Jepara 2 | Jepara 2 |
| | | BBPBAP Jepara | Sidoarjo | Sidoarjo | Sidoarjo |
| Multiplication Center: | BPKIL Serang | | Gresik | Gresik | Gresik |
| | | BPBAP Situibondo | Situbondo | Situbondo | Situbondo |
| | | | | | |
| 1. BPBAP Takalar | BPBAP Ujung Batee | BPBAP Takalar (Pinrang) | Pidie | Pidie | Pidie |
| 2. BPBAP Ujung Bate | BBPBL Lampung | BPBAP Takalar | Biereun | Biereun | Biereun |
| | BPIUUK Karangasem | | Aceh Jaya | Aceh Jaya | Aceh Jaya |
| | BPBAP Takalar | | Aceh Besar | Aceh Besar | Aceh Besar |
| | | | West Aceh | West Aceh | West Aceh |
| | | | East Lampung | East Lampung | East Lampung |

| | | | | | |
|---|---|---|---|---|---|
| | | | South Lampung | South Lampung | South Lampung |
| | | | Tanggamus | Tanggamus | Tanggamus |
| | | | Jembrana | Jembrana | Jembrana |
| | | | Bone | Bone | Bone |
| | | | Pinrang | Pinrang | Pinrang |
| | | | Sinjai | Sinjai | Sinjai |
| | | | Bulukumba | Bulukumba | Bulukumba |
| | | | Wajo | Wajo | Wajo |
| | | | Luwu | Luwu | Luwu |
| | | | Barru | Pangkep | Pangkep |

Type 1 : Pond Cluster
Type 2 : Pond Renovation using HDPE plastic (0,5 mm) + Water pump (6") + paddle whell (4 unit/ha) + shrimp feed + shrimp seed + Commnal WWTP + mangrove
Type 3 : Farmer WWT + production input

33. **Consultant inputs and qualifications.** The minimum requirement includes extensive and proven experience in preparing and implementing aquacultural development projects financed by ADB, and other multi-lateral development banks. Recent past and ongoing work experience in the region and in Indonesia is preferred. The assignment of experts in the project is intermittent in nature.

### 6. Consulting Firm

34. The proposed composition of the consulting firm is shown in Table 1 below. It is encouraged that positions be combined where specialists have the necessary qualifications and experience so that one individual may cover more than one position. All specialists shall contribute as appropriate to the preparation of reports and other deliverables. The firm will administer workshops, seminars, surveys, and training. All specialists are expected to be fluent in English language.

**Table 1. Team Composition for Key Experts**

| **Consultant** | **Person Months** |
|---|---|
| 1. Aquaculture Specialist (Team Leader) | 58 |
| 2. Aquaculture specialist (Deputy team leader) | 58 |
| 3. Aquaculture specialist (Site Adviser) | 116 |
| 4. Financial management Specialist | 120 |
| 5. Procurement Specialist | 72 |
| 6. Social safeguards and Community Development Specialist | 120 |
| 7. Environment safeguard specialist | 120 |
| 8. Gender Equality Specialist | 90 |
| 9. Training Specialist | 60 |
| 10. M&E specialist | 118 |
| 11. GIS specialist | 24 |
| 12. Capacity building specialist | 36 |
| 13. Legal specialist | 5 |
| 14. Laboratory Design specialist | 3 |
| **Technical specialists** | |
| 15. Private Sector Engagement Specialist | 17 |
| 16. Micro Finance Specialist | 20 |
| 17. Hydraulic Engineer | 36 |
| 18. Water Building Engineer | 18 |
| 19. Geodetic Engineer | 36 |
| 20. Structure Engineer | 36 |
| 21. CAD operator | 36 |

| Consultant | Person Months |
|---|---|
| 22. Surveyor | 72 |
| 23. Supervision assistant | 120 |
| 24. Finance assistant (3 x 40 months x 2 persons) | 240 |
| 25. Supporting Staff (3 x 60 month x 3 persons) | 540 |

35. **Indicative Duration and Place of Assignment.** The assignment of experts is intermittent in nature, and indicative contract duration from January 2023 until December 2027. Assignment location will be in Jakarta, with expected field visits to project locations. Physical or onsite field visits and training will be subject to MMAF approval and if such activities have not been restricted by local laws, regulations or directives due to corona virus disease (COVID-19) pandemic.

36. **Survey, Investigations, and Studies.** A provisional sum will be allocated under the contract to finance surveys, investigations and studies implemented by Sub-consultants, as needed by the project. The tentative list is below:

(i) Topographical survey and mapping
(ii) Geotechnical survey
(iii) Geological survey and mapping
(iv) Baseline, midterm and end environment, and social surveys

37. The consultant will need approval from the MMAF to implement these surveys. The Terms of Reference will be prepared under supervision of the Team Leader, together with the detailed Bill of Quantity and costs.

## 7. Terms of Reference of Key Specialists

(a) Project management specialists

38. **Team Leader / Aquaculture Specialist.** The specialist should have a Master's degree in aquaculture, value-chain or equivalent, preferably with at least 10 years of experience in managing aquaculture project development. The consultant must have experience in project management and managing large project teams. Good command of English and conversant Bahasa Indonesia is a must. Working under the supervision of the CPMU, the consultant will undertake the following:

(i) Support the Project Manager in CPMU in overall project management, especially coordinating team members and their respective functions and ensuring synergies of work between consultants;
(ii) Support the Project Manager in CPMU in reporting to ADB;
(iii) Lead the team of consultants at central and regional level;
(iv) Take the lead in preparation of deliverables.

39. **Deputy Team Leader / Aquaculture Specialist.** The specialist should have a Master's degree in aquaculture, and value-chain or equivalent, preferably with at least 8 years of experience in aquaculture project development. The consultant must have experience in project management and managing large project teams. Good command of English and Bahasa Indonesia is a must. Working under the supervision of the Team Leader, the consultant will undertake the following:

(i) Support the Team Leader in overall project management, especially coordinating team members and their respective functions and ensuring synergies of work between consultants;
(ii) Support the Team Leader in reporting to ADB;
(iii) Support the Team Leader in leading the team of consultants at central and regional level.

40. **Site Adviser/ Aquaculture Specialist.** The specialist should have a Master's degree in aquaculture, or equivalent, preferably with at least 8 years of experience in managing aquaculture project development. The consultant must have experience in project management and managing large project teams and ADB project would be an advantage. Good command of English and Bahasa Indonesia is a must. Working under the supervision of the CPMU, the consultant will undertake the following:

(i) Support the Project Manager in PIUs in overall project management, especially coordinating team members and their respective functions and ensuring synergies of work between consultants;
(ii) Support the Project Manager in PIUs in reporting to ADB;
(iii) Lead the team of consultants at regional level;
(iv) Take the lead in preparation of deliverables.

41. **Financial Management Specialist.** The specialist will have a degree in accounting, audit, finance or a related field and will have at least 8 years of experience in accounting and financial management. He or she must possess a professional accountancy qualification (e.g. Chartered Accountant, Certified Public Accountant, or equivalent). Experience with donor-funded projects would be an advantage. The specialist is required to be familiar with the financial guidelines and related procedures of ADB and the government. Good command of English is a must. The consultant will:

(i) Prepare annual work plan and update the overall work plan
(ii) Support the CPMU in processing withdrawal application
(iii) Support the CPMU and PIUs in developing a financial management manual to guide the project finance staff on internal control measures specific to the project and mapping of project's expenditure categories with the government's chart of account to ensure project's full compliance with government regulations, SAP, and ADB's FM policies to ensure that the project will submit complete financial statements and comply with ADB FM requirements.
(iv) Support the CPMU in preparing and delivering annual consolidated financial reports, timely follow up on the financial audit findings, and the project assets are registered completely in the government asset information system.
(v) Support the CPMU and PIUs in conducting financial analysis to ensure subprojects viability and/or sustainability as part of the subproject assessment.
(vi) Support PIUs to roll-out financial management (FM) manual, implement FM action plans,
(vii) and resolve any FM issues raised by auditors.
(viii) Support the PIUs in timely preparing and submitting necessary financial reporting for progress reports and annual financial reports

42. **Procurement Specialist.** The consultant will have at least an undergraduate degree in engineering, finance, logistics or similar field or discipline, with work experience on procurement and consultant recruitment for at least 5 years. Knowledge of the government planning cycle, procurement procedures and financial management mechanisms is essential. The specialist must have strong interpersonal and communication skills, be fluent in written and spoken English, and have proven ability in report writing for professional purposes. The consultant will:

(i) Provide up support to the executing agency as required in undertaking procurement,
(ii) Facilitate training on procurement to regional procurement consultants, and relevant Government staffs at central and district level.

43. **Social Safeguards and Community Development Specialist.** The specialist will have a required degree in social sciences, development studies, or a relevant discipline; and work experience with involuntary resettlement and indigenous peoples safeguards for at least 8 years. Good English proficiency for speaking, writing and reading is a must. Under the overall guidance and supervision of ADB's Safeguards Specialist, the consultant will:

(i) Monitor compliance and implementation of ADB Safeguard Policy Statement (SPS) 2009 requirements and government regulation on social issues.
(ii) For each site, review documents in accordance with ADB's SPS.
(iii) Facilitate a training on CDF, SADP, IPPF and MHADP implementation for the EA - PIUs and regional level Social Safeguards Specialists.
(iv) Conduct meaningful consultation in each subproject site with support from PIU's safeguard officer and field facilitators.
(v) Prepare semiannual safeguard monitoring reports for EA submission to ADB (both in English and Bahasa Indonesia)
(vi) Assist EA/CPMU/PIU to implement and manage project's GRM
(vii) For each site, prepare a draft sustainable aquaculture development plan (SADP) and draft indigenous people's plan (MHADP) in accordance with ADB's Safeguard Policy Statement (SPS), CDF and IPPF
(viii) Screen, review and update the DDR prepared for the infrastructure component on government land upon the completion of DED
(ix) When required, prepare the IR-IP impacts mitigation plan in accordance with ADB SPS (2009)
(x) Prepare semiannual safeguard monitoring reports on CDF, SADP, IPPF, MHADP implementation for EA submission to ADB
(xi) Assist EA/CPMU/PIU to implement and manage project's GRM

44. **Environmental safeguards Specialist.** The consultant will have at least a required degree in environmental science, or natural resource management; Knowledge and experience of 8 years in impact assessment related to aquaculture projects in general. S/he has to have a proven knowledge of ADB's environmental safeguard requirements and national environmental management frameworks and procedures. A good interpersonal skill; and a good communication skill in English is desired. The consultant will:

45. Assist the CPMUs in all aspects of the environment-related implementation of the project, mainly the EARF and subproject initial environment examinations (IEEs) and the EMPs.

(i) Supervise the implementation of EARF through desk review and field inspection of subprojects, Ensure that the steps and requirements of the EARF covering

environmental screening, assessing and management of environmental impact are followed by PIUs and beneficiary farmers.

(ii) Carry out screening of environmental impacts to identify key issues for assessment and scoping to determine spatial and temporal scope of initial environmental examinations (IEEs);

(iii) Coordinate with and base on domestic environmental impact assessment process to ensure compliance with domestic and ADB requirements as well as consistency and data sharing between the two;

(iv) Based on the IEEs, develop specific environmental management plans (EMPs) to clarify who do what, and when and how, and include monitoring and training plan.

(v) Ensure gender mainstreaming and youth inclusion into project activities under its field of expertise.

(vi) Develop and implement environment training programs for PIUs, extension workers and facilitators

46. **M&E Specialist (national).** The consultant will hold at least a Bachelor's Degree in Project Management, Aquaculture, Agribusiness, Business Administration or a relevant academic degree with at least 8 years of experience in designing and implementing monitoring and evaluation (M&E) systems for aquaculture, agribusiness, value chain or agro-enterprise development projects or programs. Knowledge of rural infrastructure, aquaculture will be beneficial. S/he will have a good knowledge of English and should be competent in computer applications/software (specifically MS Office, MS Excel) and database management. Experience in using Open Data Kit system for data collection is mandatory. A good working skill in statistical software will be preferred. The consultant will:

(i) Support the development and implementation of project monitoring and evaluation: prepare the M&E guideline, support the development of the Management and Information System (based on guidance provided in the PAM), quarterly update of the DMF/ logframe, and GESIAP.

(ii) Oversee the implementation of the baseline, mid-term and completion survey by the external M&E firm/research institution. After the baseline, review end of project targets as required based on baseline values collected during the baseline survey.

(iii) Regular updates to team on Project progress (yearly at central level and 6-monthly at regional level in coordination with regional M&E consultants).

(iv) Facilitate training on M&E and data flow for all relevant staffs (consultants and Government) and enforce proper M&E practices among all staffs.

(v) Provide full support to the preparation and submission of project work plans and reports.

(vi) Ensure gender mainstreaming and youth inclusion into project activities under its field of expertise.

47. **Training specialist.** The training consultant will have experience coordinating capacity building activities in shrimp farming development projects (Master’s Degree in a relevant field and at least 5 years of professional experience). The training consultant will establish capacity building approaches to ensure delivery and monitoring of quality trainings across all outputs/sub-outputs and among all service providers (formats for participants lists, pre/post-tests, post-training surveys, formats to assess trainers, etc.) and conduct Training Needs Assessments for selected central level trainings in central level.

48. **Gender Equality specialist.** The consultant will have a required degree in a relevant social science discipline. The consultant will have work experience for at least 8 years as social

development and/or gender specialist; and with agriculture and rural development agencies, farmers and cooperatives. Knowledge of ADB Gender and Development Policy and related procedures, and familiarity in using ADB's tool kit on gender indicators and ADB Operations Manual (gender and development, and social dimensions) are expected. The consultant is expected to work closely with the team leader, and social safeguard specialist. The consultant will:

(i) Provide the necessary support to the executing/implementing agency for GESIAP implementation, conduct regular monitoring on GESIAP implementation, collect data reflecting progress on GESIAP targets and indicators, and prepare quarterly reporting of the GESIAP.
(ii) Assess the need for capacity building at both national and sub-national levels to ensure proper implementation and monitoring of the GESIAP, and provide orientation and training on GESIAP and maintain the desired level of awareness on gender and social inclusion.
(iii) Act as the main focal point/contact for GESI related activities between the project, the implementing agency, and other consultants.

49. **GIS Specialist.** The specialist should have a very high degree of knowledge on the use of ArcGIS software with at least 8 years' experience on the application. Good command of English is a must. Working under the supervision of the Team Leader, the consultant will undertake the following:

(i) Oversee the design of a GIS-based management system for all assets (land, buildings, equipment) in the possession of the MMAF.
(ii) Establish and monitor the implementation of the overall asset management approach.

50. **Capacity building specialist.** The specialist should have a master's degree in social science, environment, and adult education, with at least 10 years' experience in the relevant fields. Good command in English is a must. The Consultant will work with the social safeguard specialist and other specialists to undertake the following:

(i) Develop implementation/guidance modules of the prepared CDF, IPPF, SADP and DDR for the project's facilitators
(ii) Prepare modules for all technical trainings
(iii) Conduct training/ capacity building on the implementation of the develop modules to CPMU, PIUs safeguard officers and the safeguard's field facilitators.
(iv) Monitor the implementation of the modules used.

51. **Legal Specialist.** The specialist should have a Bachelor's degree in Law or related field. The legal expert with minimum of 8 (eight) years working experience including significant experiences of working with private and government institutions in public finance and infrastructure delivery related areas. Have a good knowledge of aquaculture policy and concept as well as the prevailing aquaculture related laws and regulations in Indonesia. Have a good knowledge of Indonesia's government structure and aquaculture infrastructure development in Indonesia. Sound English and Indonesia language capability (written and spoken) and reporting writing skills. Proven ability to work independently with limited supervision and operate effectively in a team environment. The consultant will:

(i) Provide legal advice or review for DGA MMAF concerning in the contract, agreement, and relevant laws and regulations or those which are required for future improvement of aquaculture development, including to provide a regulation drafts if necessary;
(ii) Provide legal advice on and review of legal documents in relation to aquaculture projects, including review of legal documents, project documentation and project implementation in view of the prevailing aquaculture related laws and regulations;
(iii) Provide legal advice on and review of the proposed IISAP project structures in view of the prevailing regulations, to help the PMO develop best practice projects;
(iv) Accompany PMO Unit in the meeting or discussion with aquaculture related stakeholders concerning the implementation of good aquaculture;
(v) Develope the ToR for other consultants to be hired by PMO to provide draft regulations and other legal regulatory works as needed for aquaculture frameworks, improvements, and advice on feasibility studies and transactions;
(vi) Communicate and coordinate his/her work to other consultant.

52. **Laboratory Design Specialist.** The specialist should have a bachelor degree of architect or other related field of study, with at least 5 years' experience in laboratory design and the relevant fields. Good command in English is a must. The Consultant will work with the structural engineer and other specialists to undertake the following:

(i) designing a heathy laboratory building and rooms layout
(ii) designing an eco-friendly modern laboratory layout
(iii) designing an healthy and eco-friendly modern mobile laboratory layout

(b) Technical Specialists

53. **Private Sector Engagement Specialist.** The consultant will have a minimum of 8 years of relevant experience in aquacultural value chain development, aqua-food industry, aqua-food marketing and trade. An advanced university degree (Master's) in Fisheries or Aquaculture, Economy, International Trade, Business Administration (MBA) and Management or a related discipline is required. Prior experience working to link farmers and private sector (for marketing, access to inputs, extension, finance, and other agriculture VC services) is required. Excellent presentation skills with written and oral communications are desired. The consultant will:

(i) Establish the private sector engagement approach.
(ii) Support in monitoring of achievements and indicators under its field of expertise.

54. **Micro Finance Specialist.** The specialist should have a Master's degree in micro finance, preferably with at least 8 years of experience in many aspect of micro finance, financial literacy for farmers and MSMEs. Good command of English is a must. Working under the supervision of the Team Leader, the consultant will undertake the following:

(i) Select service providers to support financial literacy & collaboration with financial technology enterprises.
(ii) Oversee the design and implementation of trainings in financial literacy and business training for MSMEs.
(iii) Ensure gender mainstreaming and youth inclusion into project activities under its field of expertise.
(iv) Support in monitoring of achievements and indicators under its field of expertise.

55. **Hydraulic Engineer.** The Hydraulic Engineer will have a Master's degree in at least 8 years of actual field experience in aquaculture development projects. S/he will prepare detailed engineering designs for canals, ponds and associated infrastructure and manage geological or topographical surveys; prepare cost estimates that would include the cost and capacities of the water equipment, material as well as the labor cost that is required to complete the project within the given deadline; and, identify the technical or any other issues, resolve them, as well as prepare the reports related to various proposals, deeds, etc.

56. **Water Building Engineer.** Water Building Engineer will have a Master's degree in at least 8 years of actual field experience in aquaculture development projects. S/he will prepare detailed engineering designs for hatchery and associated infrastructure and manage geological or topographical surveys; prepare cost estimates that would include the cost and capacities of the water equipment, material as well as the labor cost that is required to complete the project within the given deadline; and, identify the technical or any other issues, resolve them, as well as prepare the reports related to various proposals, deeds, etc.

57. **Geodetic Engineer.** The Geodetic engineer should be at least a Bachelor's degree holder with at least 8 years of actual field experience, some postgraduate courses may be an advantage. Professional accreditation also be required. Among the responsibilities of the geodetic engineer are sub-surface investigations or the analysis that will determine the site ground's stress bearing capability and stability. The geodetic engineer must also determine whether issues like erosion, settlement and slope will pose a safety risk to the proposed infrastructure under the project. S/he will be required to analyse the results of subsurface investigations and field tests with dedicated computer software. After analysis, the geodetic engineer may be required to assist in the development of earthworks and foundations suitable to the conditions of the site

58. **Structural Engineer.** S/he will have at least a Bachelor's degree in structural engineering with actual working experience in the field spanning 8 years. The Structural engineer will ensure pond and related structures can withstand the stresses and pressures imposed by use and the environment. S/he will calculate stability, strength and rigidity and make sure the right materials are used for each project structure, whether it is new one, a conversion or renovation job. As a structural engineer, S/he could any and all structures within the project.

59. **CAD Operator.** At least 8 years of proven experience in the field will be required. A bachelor's degree in architecture will be an advantage. The CAD (computer aided design) should be able to technical drawings as per the instructions and specifications provided by design engineers ensuring that the drawings adhere to the industry standards and safety guidelines. S/he should be able to create plans using various CAD software and technologies. S/he should remain up-to-date with the latest advancements made in the industry and should be able to visit construction sites and collect required and relevant data. S/he should have a detail-oriented approach and excellent researching skills. Furthermore, you should display excellent ability to work well under pressure.

60. **Surveyors.** The Surveyors will guide construction and development projects and provide essential information regarding the precise location of boundaries needed for determining property lines. In construction, surveyors determine the precise location of infrastructure and proper depths for foundations. Surveyors will use the Global Positioning System (GPS), that locates reference points with a high degree of precision. Surveyors interpret and verify the GPS results. They gather the data that can be fed into a Geographic Information System (GIS), which is then used to create detailed maps. Surveyors take actual measurements in the field with a crew, a group that typically consists of a licensed surveyor and trained survey technicians. The

person in charge of the crew (called the party chief) may be either a surveyor or a senior surveying technician. The party chief leads day-to-day work activities. The Surveyors must be well-trained and possess professional licenses to practice issued by the proper authorities.

61. **Supervision Assistants.** The Supervision assistant will report to the Supervisor or other senior managers as required, develop training materials and conducting training sessions and workshops, prepare job descriptions and work schedules, assisting with other administrative tasks, when required, 2+years' experience in a Assistant Supervisor role or similar. Ability to create candidate hiring profiles and to appoint suitable staff. Experience in liaising between management and employees, exceptional ability to motivate employees and foster teamwork. Advanced knowledge of word processing, spreadsheet, and presentation software, including Microsoft Word, Microsoft Excel, and Prezi. Excellent interpersonal and communication skills.

62. **Finance Assistants.** The purpose and objectives of the Financial Management Assistant assignment is to enhance the assurance of sound project implementation, monitoring, and reporting by providing management support to the CPMU in preparation, monitoring, evaluation, control and documentation of the implementation of project. Minimum Bachelor (S1) in Economics /Accounting from an accredited public or private university, proven by a certified diploma. Having expertise in data collection, data tabulation and project financial management data and recapitulation. Preferably have experiences in the field of data collection, data tabulation and project financial management data and recapitulation.

## 8. Deliverables

63. The PMC's deliverables include the following:

| Deliverables | Outlines | Timing |
|---|---|---|
| **Administrative** | | |
| Annual Work Plan | The Annual work plan will: (i) provide a detailed implementation plan for the project's activities; (ii) provide a detailed plan of the consultant's activities and confirmation and adjustment to the tasks of each expert with further elaboration as required; (iii) provide work and staffing schedule; (vi) outline the planned implementation of the provisional items with scopes and costs | January, 2023 |
| Financial management manual | The financial management manual will: provide the detail planned implementation of the provisional items with scopes and costs estimates, specific internal controls necessary for the project to effectively manage the use of funds, and mapping between the cost categories of project with government's chart of accounting to facilitate consistent, accurate and timely financial reporting. | Q2, 2023 |
| M&E guideline | | Q1, 2023 |
| Inception report | The inception report will: (i) confirm, elaborate on, and adjust as necessary the consultant's approach, methodology and work plan based on information received during the inception phase; (ii) provide a detailed plan of the consultant's activities and confirmation and adjustment to the tasks of each expert with further elaboration as required; (iii) provide a detailed implementation plan for the project's activities; (iv) discuss any issues identified during the inception phase; (v) provide work and staffing schedule; (vi) outline the planned implementation of the provisional items with scopes and costs, including | Q2, 2023 |

| Deliverables | Outlines | Timing |
|---|---|---|
| | any planned site investigations, surveys and studies with scope of works and cost estimates; and (vii) outline of all reports to be prepared under this task. This report will be made by Consulting Firm 4 (four) weeks after the contract signing and will be presented at Jakarta Office. | |
| Quarterly Progress Reports (QPRs) | Each QPR summarizes the highlights per quarter, the activities undertaken and a summary of disbursements; physical and financial progress of the project; achievement of targets for outputs and inputs defined in DMF and GESIAP, to be submitted within 14 working days of the first month of the succeeding quarter. | 14 working days of the first month of the succeeding quarter. |
| Project Performance Monitoring Reports (PPMS) | The PPMS shall be submitted every 6 months, highlighting the performance based on the DMF targets, including compliance with project covenants as stated in the loans and grant agreements. | 14 working days of the first month of the succeeding Semester |
| Borrower's Project Completion Report (PCR) | The PCR shall be submitted within 6 months from physical completion of the project. | Q1, 2026 |
| Semi Annual Safeguard monitoring reports (SSMR) | SMRs are due as required in the project CDF, IPPF, EARF. The SSMR templates are attached to the PAM. | Q1, 2025 |
| **Technical** | | |
| Baseline, mid term and completion surveys for Java island project areas | The baseline, mid term and completion surveys to be supported by field facilitators will cover technical, socio economic, gender and environment aspects in the project areas. The format will be agreed at inception of the project | Q2 2023<br><br>Q3 2025<br><br>Q4 2027 |
| Sustainable Aquaculture Development Plans for the 108 farmers groups in Java and Bali Island | The Sustainable Aquaculture Development Plans cover planning for technical;, social and environment safeguards, gender, and implementation arrangements at farm level. The template is attached to the Project Administration Manual | First month of 2024, 2025, 2026, 2027 |
| Initial Environment Examination | The IEE follows the guidance provide in the EARF (attached to the Project Administration Manual) for subprojects that trigger environment safeguards | Q1, 2023 |
| UPL/UKL | Those are required for infrastructure subprojects as per government regulations | Q1, 2023 |
| Indigenous Peoples Plan | Those are required for subprojects that trigger indigenous people as per the Indigenous Peoples Plan Framework (IPPF) | Q1, 2023 |
| Survey and investigation report | | |
| Geodetic data survey and map Reports. | a) Report of Existing Topographical Data Collection, and identification report of the required additional data;<br>b) TOR and bidding document for topographic surveys, and carry out bidding process for recruitment of sub-consultant;<br>c) Supervision report of the implementation sub-contract and check the product. | Q3, 2023 |
| Hydrology Report. | a). Rainfall analysis, flood discharges, and water needs analysis and calculations, | Q3, 2023 |

| Deliverables | Outlines | Timing |
|---|---|---|
| | b). The study of climate projections from available downscaled climate change models to adjust accordingly design criteria; | |
| Safeguard's Facilitator's implementation modules for CDF-IPPF and SADP | The modules should be developed at the earliest and conduct the required training for the usage of the develop modules | Q1 2023<br>For the module development and Q2 -Q2 for capacity building training to the field facilitators. |
| Inception and final reports on Capacity building implementation training report | Reports on how the trainings are conducted, participants list, and evaluation and results of trainings activities | Q4 2023<br>Q3 2024 |
| Geology Reports. | a) Report on the existing geological data information;<br>b) Investigation Report on geological phenomena which may endanger the stability of the weir / other structures | Q3, 2023 |
| Geotechnical Reports. | a) Report on geotechnical conducting design of weir, irrigation and drainage structure.<br>b) Report on information on the geology of the project area thru site inspections, mapping and reports,<br>c) Report on existing data, and identify the required additional data;<br>d) Report on potential sources of construction material and suitable locations and means of disposal of soil;<br>e) Report on geotechnical investigation and related laboratory works,<br>f) Report on interpretation and record data of geotechnical investigation and laboratory tests to obtain information for design; | Q3, 2023 |
| Hydraulics and Structures Design Reports. | a). Report on layout of structure by using situation map;<br>b). Report on design of irrigation and drainage structures;<br>c). Report on quarry for material procurement and make necessary investigation and survey to ensure conformity with the quality and quantity requirement;<br>d). Design drawing including details, dimension and necessary information;<br>e). Report on Technical specifications; | Q3, 2023 |
| Detailed Engineering Design Reports | a). Topographic map scale of 1:2.000 and 1:500 for detailed irrigation structure<br>b). Supervision of Topographic survey on irrigation scheme 2,540 ha and geotechnical and geological investigation;.<br>c). Detail engineering design of irrigation including Tertiary and drainage canal and related structure;<br>d). Quantity calculation and engineering cost estimate;<br>e). Preparation of work method, schedule and engineering cost estimate; | Q1, 2023 |

| Deliverables | Outlines | Timing |
|---|---|---|
| | f). Preparation of general and technical specification preparation of bidding document for civil works contracts.<br>g). Drawing design for construction, both in soft copy and printed in A3 Format. | |
| Bidding documents | Those will follow ADB standards for works and goods | Q1, 2023 |

## C. CS03: Asset Management Information System Development

### 1. Objective of the Assignment

64. This assignment is to support upgrading of the ASSET MANAGEMENT SYSTEM (Sistem Informasi Pengelolaan Tambak – Pond Management Information system) or aquaculture asset registry into a fully functioning and user-friendly web-based information system to record the conditions of the MMAF's assets.

### 2. Scope of works

65. The scope of works include (i) upgrading of the ASSET MANAGEMENT SYSTEM to a webased geospatial interface covering all life cycle aspects of asset management; (ii) developing an Android application linked to the ASSET MANAGEMENT SYSTEM to capture asset conditions in the field; (iii) developing the ASSET MANAGEMENT SYSTEM manual and corresponding guidelines and regulations for aquaculture asset management and operation and maintenance (O&M); (iv) digitalizing location of assets based on secondary data (existing geospatial dataset, satellite images, LIDAR data etc); (v) train MMAF and UPT staff in the use of the system.

66. The upgraded Asset Management System system will have geospatial functionalities to (i) overlay information relevant to aquaculture; (ii) generate operation and maintenance (O&M) budget estimates; and (iii) identify infrastructure for priority repair and rehabilitation. The system will help track fixed assets like ponds, canals, gates, and others. The system must be able to achieve those while robust, safe and user-friendly. The system will also be linked to farmers groups registry database to monitor project activities.

67. **Consultant inputs and qualifications.** The minimum requirement includes: extensive and proven experience in developing asset management information systems, processing geospatial dataset, and satellite imagery analysis. The assignment of experts in the project is intermittent in nature.

### 3. Consulting Firm

68. The proposed composition of the consulting firm is shown in Table 3 below. It is encouraged that positions be combined where specialists have the necessary qualifications and experience so that one individual may cover more than one position. All specialists shall contribute as appropriate to the preparation of deliverables. The firm will administer workshops, seminars, surveys, and training. All specialists are expected to be fluent in English language.

**Table 3. Team Composition for Key Experts**

| Consultant | Person Months |
|---|---|
| IT Developer (Team leader) | 6 |
| Web-based Interface Developer | 4 |
| Android Programmer | 4 |
| GIS Specialist | 6 |
| Remote Sensing Specialist | 4 |

### 4. Terms of Reference of Key Specialists

69. **IT Developer.** The consultant should have (i) a master's degree or equivalent on information and communications technology (ICT)-related field, (ii) at least 7 years' experience with design and development of large data base, (iii) knowledge of on-line GIS and on-line data systems; and (iv) excellent oral and written communication skills in English. This position requires complex application development experience working on all phases of software development life cycles, as well as expertise implementing content management websites. This role communicates with stakeholders, staff, IT colleagues, and others to identify user requirements, assess available technologies, and recommend quality solutions. The successful candidate must have at least 5 years' verifiable programming experience.

(i) Formulate the architecture of the upgraded system and develop work plans for coding and development works;
(ii) Supervise the coding and provide guidance to the software development team;
(iii) Support the MMAF's data center (PUSDATIN) to set up the server to host the database;
(iv) Set up quality assurance procedures for data processing and data entry;
(v) Supervise the migration of existing data sets into the system;
(vi) Establish reporting procedures on data quality and level of entry;
(vii) Develop a training program to maintain and upgrade the system;
(viii) Prepare the technical reference for the system;
(ix) Develop a dashboard to monitor aquaculture asset management key indicators;
**(x)** Supervise the development of the tablet interfaces as needed.

70. **Web-based Interface Developer.** The consultant should have (i) a master's degree or equivalent on information and communications technology (ICT)-related field, (ii) at least 6 years' experience with design and implementation of on-line GIS and on-line data systems, and (iii) excellent oral and written communication skills in English. Experience in development of asset management system would be an advantage. The main task of user interface development will be to transfer information and commands between users, and the software components of various computer systems. S/he will build various applications for mobile and stationary devices and spend effort on providing a pleasant and intuitive interface. The successful candidate must have at least 5 years' verifiable interface development experience.

(i) Conduct needs assessment for modules needed by various MMAF units for upgrading the asset management information system;
(ii) Upgrade the system interface to a user-friendly interface with geospatial functionalities; Web programming: PHP (Code Igniter / Laravel…), XML, and Database: PostgreSQL (& PostGIS), MySQL Server, etc., Web design: Web templates (HTML / CSS), JS (Jquery, AngularJS…), Bootstrap, etc.
(iii) Troubleshooting and Fixing bugs;
(iv) Prepare training modules and technical references;
(v) Provide technical support to the MMAF's data center (PUSDATIN) to set up the server to host the system and its interface module;

(vi) Support the migration of existing data sets into the system;
(vii) Establish reporting procedures on data quality and level of entry; and
(viii) Support the development of a dashboard and reporting templates to monitor key indicators and statistics for aquaculture.

71. **Android Programmer.** The consultant should have (i) a bachelor's degree or equivalent on information and communications technology (ICT)-related field, (ii) at least 7 years' experience with android application and web development of medium-large systems, and (iii) excellent oral and written communication skills in English language. Knowledge of mobile GIS technologies will be an advantage.

72. The Android Developer will support the programming of the android application to survey the aquaculture assets. Together with the other consultants, the Android Developer will develop the data synchronization protocols and interface. The android application will enable field surveyors to efficiently conduct inventory of asset, assess their conditions and support the generation of the web-based reports needed to estimate O&M budgets. The application will enable to capture geographic coordinates, photographic documentations and entry key characteristics of infrastructure in a structured way through predefined menus. Physical condition and functionality of assets will also be captured. The data will be transferred to the ASSET MANAGEMENT SYSTEM. Analysis of the field information will help prepare and optimize O&M and rehabilitation programs, and better estimation of O&M budgets.

73. **GIS Specialist.** A GIS specialist must be familiar with webgis development and relevant skill of geospatial data processing. S/he must be able to use technology with ease and pick up new roles if needed. For example, they should be familiar with their software, understand how to input data, and know programming and IT-related roles. A GIS specialist is often expected to go above and beyond and be overly familiar with different tech and computer systems. The candidate must provide proof of 5 years' experience of successful android programming. The major duties and responsibilities will include, but are not limited to the following:

(i) Identify the architecture of ASSET MANAGEMENT SYSTEM platform and provide technical recommendations of information system development;
(ii) Provide support to team and stakeholder (MMAF, BIG, and other agency) for implementing ASSET MANAGEMENT SYSTEM development.
(iii) Coordinate with stakeholder to get the existing dataset of aquaculture in order to enhance the sufficient information of aquaculture asset management;
(iv) Prepare the manual or guidelines of GIS data processing and interoperability function in ASSET MANAGEMENT SYSTEM platform.
(v) Transfer and conversion GIS dataset into ASSET MANAGEMENT SYSTEM platform;
(vi) Coordinate with team leader and MMAF to socialize this asset management information system to regional staff or UPTs;
(vii) Reporting

74. **Remote Sensing Specialist.** The Remote Sensing Specialist must have a master's degree or equivalent in remote sensing background. He/ she should have at least 5 years of work experience, with 2 years in the field of river basin asset management or aquaculture. Previous experience Deputy Team Leader with experience in leading, coordinating multidisciplinary teams, and relevant agencies will be given preference. The remote sensing expert should be familiar with all aspects of the tasks listed in the scope of work and will assist the Team Leader in managing

the team in PMC and coordination among consulting teams in each CPIU. The major duties and responsibilities will include, but are not limited to the following:

(i) Identify the architecture of ASSET MANAGEMENT SYSTEM platform and provide technical recommendations of information system development from remote sensing aspects;
(ii) Coordinate with stakeholders to get the existing dataset of aquaculture to enhance the sufficient remote sensing information of aquaculture asset management;
(iii) Coordinate with MMAF Research Centre (MRC) and ORPA LAPAN to enhance the method of data extraction for satellite product for the aquaculture asset management system;
(iv) Coordinate with MRC and ORPA LAPAN to continue the process of remote sensing utilization in aquaculture and to support project monitoring;
(v) Coordinate with team leader and MMAF to socialize this asset management information system to regional staff or UPTs;
(vi) Reporting

## 5. Deliverables

75. Key expected deliverables are as follows:

| Deliverables | Outlines | Timing |
|---|---|---|
| **Administrative** | | |
| Work Plan | The Work plan contains the consultant's overall work plan, including information on activities, assigned personnel, and work results. The work plan is detailed according to the duties of each consultant and has been synchronized with project activities. | A week after mobilization |
| Inception report | The inception report will: (i) confirm, elaborate on, and adjust as necessary the consultant's approach, methodology and work plan based on information received during the inception phase; (ii) provide a detailed plan of the consultant's activities and confirmation and adjustment to the tasks of each expert with further elaboration as required; (iii) provide a detailed implementation plan for the project's activities; (iv) discuss any issues identified during the inception phase; (v) provide work and staffing schedule; (vi) outline the planned implementation of the provisional items with scopes and costs, including any planned site investigations, surveys and studies with scope of works and cost estimates; and (vii) outline of all reports to be prepared under this task. This report will be made by Consulting Firm 4 (four) weeks after the contract signing and will be presented at Jakarta Office. | A month |
| Midterm Report | The midterm report contains the consultant's progress based on the preliminary report. | Third Month |
| Final Report | In the report, the consultant must convey the overall progress of the activity from the beginning to the end. However, the emphasis is on the results of the consultant's work and the consultation process during the project, and the obstacles faced. | Sixth Month |
| **Technical Report** | | |
| Aquaculture Asset Management Development guideline | A report explains the flow or mechanism for managing information system assets, starting from development, and | Sixth Month |

| Deliverables | Outlines | Timing |
|---|---|---|
| | solving problems, to the coordination process between users. | |
| Asset Management Platform Report | It contains a detailed report on the information system used and technical information such as server capacity, type of operating system, and the connection mechanism between databases.. | Sixth Month |
| Capacity Building Report | This report contains the activities of the knowledge transfer process from the consultant to other relevant stakeholders. This report aims to ensure the sustainability of information systems development so that it can run for the next five years during the project. | Sixth Month |

## D. CS04: External Monitoring Agency (EMA)

### 1. Objectives of the Assignment

76. The objective of this consulting service is to verify that the land utilization and arrangement of the project follows the principles and procedures of voluntary land sharing/pooling set for the project consistent with the guidance provided in the Capacity Development Framework (CDF).

77. MMAF will engage an independent external party such as a qualified non-governmental organization (NGO) or legal authority to undertake the verification of the CDF implementation in compliance with ADB Safeguards Policy Statement (2009) on involuntary resettlement (IR) and indigenous people (IP) policies. The external monitoring agency (EMA) will monitor and evaluate the implementation of CDF, Sustainable Aquaculture Development Plan (SADPs), Indigenous People Plan Framework (IPPF) and Masyarakat Hukum Adat Development Plan (MHADPs).

78. The EMA will focus on the following aspects:

(i) Land sharing/pooling for farmer pond cluster and the other assistance in all locations are conducted in accordance with applicable regulations and guidelines.
(ii) Land use agreement and beneficiaries' selections are conducted and implemented in accordance with the prepared guidelines.
(iii) Delivery of social support and social management includes delivery of assistance for farmers renting ponds are implemented as agreed in the SADP.
(iv) Public information dissemination and consultations procedures are followed.
(v) Adherence to the project's grievance procedures, and resolution of issues requiring management's attention.
(vi) The benefit provided from the project are received by all beneficiaries.
(vii) The ability of the farmers and farmer group in maintaining their livelihoods and living standards.
(viii) Assessing if the capacity development plan (CDP) – which is part of the SADP - implementation and activities achieved the intended objectives, measuring community development outcomes against baseline condition.

### 2. Scope and Detailed Tasks

79. The independent party to undertake the following general tasks among others:

(i) Ensure that project's beneficiaries selection criteria include social safeguard considerations as elaborated in the CDF and IPPF.
(ii) Using observation from field visits, verbal and written records, verify that the CDF and IPPF principles are implemented properly, ADB SPS principles on IR and IP

safeguards are complying with, and was accomplished through consultation process.

(iii) Ensure that SADP on social safeguards are properly implemented and construction of farmers' cluster ponds do not severely affect the living standards of pond farmers (affected person) and will benefit them directly.

(iv) Ensure that MHADP is implemented, and members of customary communities received the project's benefits.

80. The independent party's work will include several specific tasks:

(i) Review all project documents including loan agreement and memorandum of understanding (MoU) or correspondences between ADB and MMAF related to the CDF-SADP and IIPF-MHADP requirement and implementation.

(ii) Visit the project site to verify whether the CDP-MHADP, if any, implementation follows the principles and procedures agreed in loan agreement, MoU, CDF and IPPF. Verification will cover an adequate representative random sample of the participating farmer households who voluntary share land for farmer pond cluster and for indivial waste water and pond reconstruction & communal wastewater treatment plant.

(iii) Conduct interviews, household survey and/or participatory community meetings with the affected pond farmers/affected farmer households to obtain perception of the criteria selection for choosing site location and farmer group, selection implementation of site location and farmer group that receive assistance.

(iv) Interview relevant stakeholders including (Directorate General of Aquaculture or DGA and 7 UPTs), construction supervision and project implementation consultants, community leaders and local authorities regarding the principles and procedures followed CDP; and

(v) Verify whether the criteria set for location and farmer group requirement and CDP preparatory, and implementation were properly applied.

(vi) Verify whether the procedures of the voluntary land sharing/using were properly implemented.

(vii) Verify whether the MHADP prepared for the location was implemented properly

(viii) Verify whether meaningful consultations were conducted properly and knowledge/ access to project's grievance redress mechanism was distributed to the community members.

(ix) Verify the inclusion of poor families, IP members and women in the project activities as part of project's beneficiaries.

(x) Prepare a verification report and corrective action plan, if needed.

81. The list of indicators can be seen in **Appendix 1**.

### 3. Location

82. The project locations for small scale backyard hatchery (partial and spawner), farmers pond cluster, irrigation canal, communal wastewater treatment plant (WWTP) and pond reconstruction, and value chain strengthening (workshop and training) are as follow:

| Package | Locations |
|---|---|
| 4a External Monitoring Agency (EMA) (Aceh) | 6 districts in Aceh Province (Pidie, Bireun, Aceh Besar, Aceh Jaya, and Aceh Barat, and Pidie Jaya). |

| | |
|---|---|
| 4b External Monitoring Agency (EMA) (Lampung and Banten) | 3 districts in Lampung Province (Lampung Timur, Lampung Selatan, and Tanggamus).<br>1 district in Banten Province (Serang) |
| 4c External Monitoring Agency (EMA) (Central Java, East Java, and Bali) | 1 district in Central Java Province (Jepara, 2 clusters).<br>4 districts in East Java Province (Situbondo, Sidoarjo, Gresik, and Tuban).<br>1 districts in Bali Province (Jembrana) |
| 4d External Monitoring Agency (EMA) (South Sulawesi) | 9 districts in South Sulawesi Province (Bone, Pangkep, Pinrang, Sinjai, Bulukumba, Wajo, Luwu, Barru, and Takalar). |

### 4. Consulting Firm

83. The EMAs will have work experience in and familiarity with all aspects of community driven development work and project implementation and evaluation. The proposed composition of the consulting firm is shown in Table 4 below. It is encouraged that positions be combined where specialists have the necessary qualifications and experience so that one individual may cover more than one position. All specialists shall contribute as appropriate to the preparation of deliverables. The firm will administer workshops, seminars, surveys, and training. All specialists are expected to be fluent in English language both in speaking and writing. The assignment of experts in the project is intermittent in nature over a period of 5 years.

**Team Composition for Key Experts**

| Consultant | 4a pm | 4b pm | 4c pm | 4d pm |
|---|---|---|---|---|
| Team leader/surveyor | 16 | 16 | 16 | 16 |
| Assistant team leader/ surveyor | 16 | 16 | 16 | 16 |
| Data analyst/surveyor | 16 | | 16 | 16 |
| Surveyor | | | | 16 |
| | | | | |

pm = person months.

84. Interested agencies/consultants should submit proposal for the work with a brief statement of the approach, methodology, and relevant information concerning previous experience on monitoring and evaluation and preparation of reports. The profile of agency/expert along with CVs of persons to be engaged must be submitted along with the proposal. The EMAs can be from local NGOs, university research centers, consultant company that have the appropriate experience and qualification in project monitoring and evaluation. The EMAs cannot be associated with the project team and project activities in any capacity.

### 5. Terms of Reference of Key Specialists

85. **Team Leader.** The Team Leader/ Expert should have the following qualification: (i) postgraduate degree in social science; (ii) 10 years' experience in M&E; (iii) experience in monitoring international organization funded projects; and (iv) have good English proficiency both the writing and speaking. The major duties and responsibilities will include, but are not limited to the following: to undertake the verification of the CDF implementation in compliance with ADB Safeguards Policy Statement (2009) on involuntary resettlement (IR) and indigenous people (IP) policies. Monitor and evaluate the implementation of CDF, Sustainable Aquaculture Development Plan (SADPs), Indigenous People Plan Framework (IPPF) and Masyarakat Hukum Adat Development Plan (MHADPs).

*86.* **Assistant Team Leader**. He/ She should have the following qualification: (i) postgraduate degree in social science; (ii) 5 years' experience in M&E; (iii) experience in monitoring international organization funded projects; and (iv) have good English proficiency both the writing

and speaking. He/ She will assist and support Team Leader to undertake the verification of the CDF implementation in compliance with ADB Safeguards Policy Statement (2009) on involuntary resettlement (IR) and indigenous people (IP) policies. Monitor and evaluate the implementation of CDF, Sustainable Aquaculture Development Plan (SADPs), Indigenous People Plan Framework (IPPF) and Masyarakat Hukum Adat Development Plan (MHADPs).

87. **Data Analyst.** He/ She should have the following qualification: (i) postgraduate degree in computer science or related major; (ii) 5 years' experience in M&E; (iii) have good English proficiency both the writing and speaking.. The data will be analyzed using frequency, percentage, ranking and other statistical tools relevant to the study. A Statistician/ Encoder will be hired to take charge of data encoding/processing and tabulation of data. The data will be by sex disaggregated. Furthermore, data analysis and report writing will be do.

88. **Surveyors.** He/ She should have the following qualification: (i) bachelor degree in social science/ fisheries; (ii) 5 years' experience in field survey. The Surveyors will conduct interviews, household survey and/or participatory community meetings with the affected pond farmers/ affected farmer households to obtain perception of the criteria selection for choosing site location and farmer group, selection implementation of site location and farmer group that receive assistance.

## 6. Deliverables

89. The EMAs will prepare and submit their report to the CPMU and ADB at semiannual bases for review and disclosure. Due to the large areas of the project activities, several EMA can be recruited for effectivity and efficiencies. The PIUs and CPMU social safeguard officers/experts will support the EMAs conducting their monitoring and evaluation. This includes providing the EMA specialist the required project documents (QPRs, internal monitoring reports, grievance redress records, etc.) and access to the project's communities and facilitators. Key expected deliverables are as follows:

| Deliverables | Outlines | Timing |
|---|---|---|
| **Administrative** | | |
| Work Plan | The Work plan contains the consultant's overall work plan, including information on activities, assigned personnel, and work results. The work plan is detailed according to the duties of each consultant and has been synchronized with project activities. | A week after mobilization |
| Inception report | The inception report will: (i) confirm, elaborate on, and adjust as necessary the consultant's approach, methodology and work plan based on information received during the inception phase; (ii) provide a detailed plan of the consultant's activities and confirmation and adjustment to the tasks of each expert with further elaboration as required; (iii) provide a detailed implementation plan for the project's activities; (iv) discuss any issues identified during the inception phase; (v) provide work and staffing schedule; (vi) outline the planned implementation of the provisional items with scopes and costs, including any planned site investigations, surveys and studies with scope of works and cost estimates; and (vii) outline of all reports to be prepared under this task. This report will be made by | A month |

| Deliverables | Outlines | Timing |
|---|---|---|
| | Consulting Firm 4 (four) weeks after the contract signing and will be presented at Jakarta Office. | |
| Midterm Report | The midterm report contains the consultant's progress based on the preliminary report. | Third Month |
| Final Report | In the report, the consultant must convey the overall progress of the activity from the beginning to the end. However, the emphasis is on the results of the consultant's work and the consultation process during the project, and the obstacles faced. | Sixth Month |
| **Monitoring Report** | | |
| Semiannual report | xxx | Every sixth Month during project implementation |

## E. CS05: Project Facilitators

### 1. Objectives of the Assignment

90. The Field Facilitators will ensure all activities planned and designed by the project management consultant (PMC) and Regional Technical Consultants are implemented accordingly at field level. They will be the projects frontliners and main link to farmers together with the extension workers. The Facilitators will be recruited by the UPTs and work in teams of four persons: (i) two technical Field Facilitators, (ii) Social and Environment Field Facilitator, and, (iii) Business Development Field Facilitator per team.

### 2. Scope of works

91. The facilitators will implement most if not all activities at field level, from community and value-chain stakeholders' mobilization, to trainings and civil works. The duration of the assignment is for 40 months, to be provided intermittently or continuously depending on the type of facilitators.

92. Facilitators will support farmer community engagement to : (i) introduce and implement the community development concept with reference of CDF; SADP, and MHADP, if any, prepared for the subproject; (ii) how to plan and manage pond cluster; (iii) facilitating and getting the agreement for land sharing/pooling for farmers' pond rehabilitation/ clusters; (iv) give training to farmers who get assistance for improving the capacity of farmers; (v) developing a base understanding of pond cluster and types of cooperation between the farmers; (v) collected formal consent from communities and households to participate in the project; (vi) selecting/ identifying the project's activities beneficiaries/participants for Output 2 and 3 of project activities based on SADP and MHADP, if any, and (vii) formed and strengthened a Fish Cultivator Group or *Kelompok Pembudidya Ikan (POKDAKAN)* for the IISAP to give a decision-making entity to engage with moving forward.

93. All engagements should be documented, including minutes of meetings which documented discussion and noted any community concerns about the program as well as participant lists disaggregated by gender. The developed engagement strategy embodies the principles of meaningful consultation, transparency, participation, and inclusiveness that ensures affected and marginalized groups such as women and the poor are given equal opportunities to

participate in the design of the project – which is in accordance with the requirements ADB's SPS (2009).

### 3. Terms of Reference for Key Specialists

94. The facilitators should have a bachelor graduate from a university majoring in fisheries, especially aquaculture who has technical skills in fish farming and experience in empowerment and/or community development activities. Facilitators could be sourced from personnel who have a training certificate for vannamei shrimp cultivation and or who have had an internship at the Cultivation Fisheries Center.

95. **Technical, Environment and Social Field Facilitator** Will be a trained aquaculture practitioner with at least 5 years' experience in guiding successful vannamei aquaculture projects. S/he will be at least a graduate of a bachelor's degree in aquaculture and willing to stay in the village of assignment. The general duties of the facilitator are to participate in training, implement the principles of social and environmental safeguards, conduct counseling, and increase the capacity of shrimp farmers, coordinate with relevant agencies, and make reports. The facilitator will specifically undertake the following tasks:

(i) Support the PIU in the selection and verification of POKDAKAN prospective beneficiaries.
(ii) Support the Community Development Specialist in groups establishment and strengthening.
(iii) Mobilize the communities around the project activities.
(iv) Mobilize all shrimp farming value-chain stakeholders around the project activities and facilitate synergies between them for specific activities.
(v) Facilitate village and sub-district level civil works by mobilizing communities.
(vi) Facilitate technical training of farmers in various areas: construction, production, post-harvest, etc.
(vii) Participate in training related to the application of sustainable fisheries production practices, in particular training on sustainable and environmentally friendly aquaculture
(viii) Support aquaculture clusters and other project provision in technical matters along the project life (farming issues, O&M of infrastructure, collaboration with private sector partners, organization, etc.).
(ix) Conduct in the implementation of field school training for expansion farmers
(x) Transfer of technology Sustainable and Environment friendly Aquaculture
(xi) Assist beneficiaries if there are obstacles that arise during implementation and when complaints arise so that farmers know where to submit complaints;
(xii) Encourage active participation of beneficiaries in every stage of activities;
(xiii) Actively coordinate with the Project Implementing Unit (PIU), especially with the UPT/Balai and the District/City Fisheries Service where the sub-project is located.
(xiv) Helping beneficiaries in preparing detailed plans for shrimp farming activities; and
(xv) Intensively assisting Beneficaries/POKDAKAN in carrying out shrimp farming activities during project implementation (technically and financial management).
(xvi) Participate in training related to the application of sustainable fisheries production practices, in particular training on sustainable and environmentally friendly aquaculture;

(xvii) Carry out meaningful public consultations with beneficiaries who receive assistance for cluster development and other pond infrastructure development. In this case, it is to explain the IISAP scheme, stages and mechanisms, and the role of each institution involved;
(xviii) Support the preparation of the SADP/CDP, with support from PIU safeguard consultant;
(xix) Ensure the implementation of the requirements and activities as planned in the SADP (and MHADP, if any);
(xx) Facilitate and get the agreement for land sharing/pooling of participating farmers as part of CDF implementation;
(xxi) Ensure and record/report the participation of poor families, women, vulnerable groups and customary community members (Masyarakat Adat) in project activities;
(xxii) Provide training and workshops to all cultivators or farmers (beneficiaries). The types of training that will be provided to cultivators are training on sustainable shrimp cultivation and workshops on shrimp farming yields that have added value;
(xxiii) Assist beneficiaries if there are obstacles that arise during implementation and when complaints arise so that farmers know where to submit complaints;
(xxiv) Encourage active participation of beneficiaries in every stage of activities;
(xxv) Actively coordinate with the Project Implementing Unit (PIU), especially with the UPT/Balai and the District/City Fisheries Service where the sub-project is located.
(xxvi) Support the safeguard officer in the PIU and safeguard expert of the PIC/PMC;
(xxvii) Assist the GRM implementation and management;
(xxviii) Support the preparation of semiannual safeguard monitoring reports as guided by PIU safeguard officer and expert;
(xxix) Make monthly reports related to day-to-day activities carried out together with PIU and cultivators. In addition to monthly reports, it is also necessary to specifically make reports on certain activities such as training activities, public consultations, implementation of pond cluster development, and others.

96. **Business Development Field Facilitator** Will be a bachelor's degree graduate of business administration or related field with at least 5 years' experience in actual work organizing farmer folk. Must be willing to stay at the project site.

(i) Mobilize all shrimp farming value-chain stakeholders around the project activities and facilitate synergies between them for specific activities.
(ii) Assist POKDAKAN in preparing business development plans, access credit, access private sector and register for INDOGAP
(iii) Facilitate linkage with Government instances whenever needed and the private sector.

**4. Deliverables**

(i) Monthly update of the DMF regarding activities under their respective responsibilities.
(ii) Sources of verifications for all data included in the DMF (participants lists, production data, etc.).

## Annex 1

| Monitoring Aspects | Potential Monitoring Indicators |
|---|---|
| Safeguard document Implementation | SADP and MHADP implementation process<br>Processes and stages of providing assistance to selected groups of farmers.<br>Mechanism of land sharing/pooling for farmer ponds cluster.<br>Availability of land sharing/ pooling agreements<br>Quality of new pond plots.<br>Restoration of social infrastructure and services.<br>The number of farmer pond cluster beneficiaries is 115-230 people.<br>The number of value chain beneficiaries is 18,466 people for 26 districts.<br>Trainings deliveries and participations<br>Compliance with CDF and IPPF principles<br>Social/economic/ cultural impacts of the project activities |
| Consultation and Grievances | Consultations organized as scheduled including meetings, groups, and community activities.<br>Knowledge of entitlements by the beneficiaries.<br>Use of the grievance redress mechanism by the beneficiaries.<br>Information on the resolution of grievances and the implementation of the social preparation phase.<br>Implementation of special measures for Indigenous Peoples. |
| Communications and Participation | Number of general meetings (for both men and women).<br>Percentage of women out of total participants.<br>Number of meetings exclusively with women, exclusively with vulnerable groups and IP members.<br>Number of meetings at new sites and between hosts and the beneficiaries.<br>Level of participation in meetings (of women, men, and vulnerable groups).<br>Level of information communicated—adequate or inadequate.<br>Information disclosure.<br>Translation of information disclosure in the local languages.<br>Village Facilitator roles and availability |
| Budget and Time Frame | Capacity building and training activities completed on schedule.<br>Achieving of providing assistance to the agreed implementation plan.<br>Funds disbursement according to the SADP.<br>Social preparation phase as per schedule.<br>Community development plan in time for implementation. |
| Livelihood and Income Conditions | Number of the beneficiaries under the SADP activity (women, men, and vulnerable groups).<br>Number of the beneficiaries who received vocational training (women, men, and vulnerable groups).<br>Types of training and number of participants in each district.<br>Number and percentage of the beneficiaries covered under livelihood programs (women, men, and vulnerable groups) and the beneficiaries who have restored their income and livelihood patterns (women, men, and vulnerable groups).<br>Number of new employment activities.<br>Extent of participation in rehabilitation programs and in vocational training programs.<br>Degree of satisfaction with support received for livelihood programs.<br>Percentage of successful enterprises breaking even (women, men, and vulnerable groups).<br>Percentage of the beneficiaries who improved their income (women, men, and vulnerable groups).<br>Percentage of the beneficiaries who improved their standard of living (women, men, and vulnerable groups).<br>Quantity of land sharing/pooling by the beneficiaries (women, men and vulnerable groups). |
| Project Benefits and Impacts | Noticeable changes in patterns of occupation, production, and resource use compared to the pre-project situation.<br>Noticeable changes in income and expenditure patterns compared to the pre-project situation. |

| Monitoring Aspects | Potential Monitoring Indicators |
|---|---|
| | Changes in cost of living compared to the pre-project situation.<br>Changes in key social and cultural parameters relating to living standards.<br>Changes occurred for vulnerable groups.<br>Training benefits for the targeted participants<br>Concerns and issues raised by the communities |

Source: Asian Development Bank.

## Environmental Monitoring Report Outline

The main content and indicative outline of the environmental reports are the following:

**Executive Summary**
Provide a summary of key findings, highlight major points, conclusions and recommendations

**Introduction:**
Concise project description (can be copied every time but indicates changes);
Project progress in this reporting period: copy from the overall progress report to ensure consistency or make a reference if it is too lengthy.

**Mitigation measures**: their implementation status (fully followed or not, if not, which parts are not and why; actual performance and findings, any issues and gaps, reasons for them, corrective actions proposed and/or remedy already taken; (Note: no need to repeat the EMP measures, as the EMP is publicized for everyone to see).

**Quantitative monitoring**: summary of results and conclusion, explain if comply with applicable standards or not, and analyze the reasons of non-compliance. (Note: full data and original reports' scans submitted in the annex);

**Training**: carried out during this period, how, to whom, results and effects; If no training carried out during the period, say so in Introduction or Conclusion;

**Any complaints through GRM**: what, when and where, how they are resolved etc. If no grievances during the period, say so in Introduction or Conclusion;

**Requirements for the changes in the project**: if it exists in this reporting period, explain domestic EIA requirements, progress made, and how to also meet ADB requirements.

**Conclusion** on this reporting period and **recommendations/work plan** for the next.

Social Monitoring Report

# {Semiannual/Quarterly} Report
{Month Year}
Loan Number:

**INO: Infrastructure Improvement for Shrimp Aquaculture Project**

Prepared by {complete and accurate name of implementing agency or external monitoring agency} for the {complete name of the borrower} and the Asian Development Bank.

## CURRENCY EQUIVALENTS

(As of {Day Month Year})

{The date of the currency equivalents must be within 2 months from the date on the cover.}

| | | |
|---|---|---|
| Currency unit | – | rupiah (Rp) |
| Rp1.00 | = | $\{ \} |
| $1.00 | = | Rp{_____} |

## ABBREVIATIONS

| | | |
|---|---|---|
| {AAA} | – | {spell out (capitalize only proper names)} |
| {BBB} | – | {spell out} |
| {CCC} | – | {spell out} |

## {WEIGHTS AND MEASURES}

| | | |
|---|---|---|
| {symbol 1 (full name 1)} | – | {Definition 1} |
| {symbol 2 (full name 2)} | – | {Definition 2} |
| {symbol 3 (full name 3)} | – | {Definition 3} |

## {GLOSSARY}

| | | |
|---|---|---|
| {Term 1} | – | {Definition 1} |
| {Term 2} | – | {Definition 2} |
| {Term 3} | – | {Definition 3} |

## NOTE{S}

The fiscal year (FY) of the Government of {name of borrower} {and its agencies} ends on {day month}. FY before a calendar year denotes the year in which the fiscal year ends, e.g., FY2011 ends on {day month} 2011. {Note: If Fys are not referred to within the text, delete the entire note and change NOTES to NOTE.}

(iii) In this report, "$" refers to US dollars. {Note: If a second $ currency is referred to in the text, e.g., NZ$ or S$, add: unless otherwise stated. In the text, use "$" for US dollars and the appropriate modifier, e.g., NZ$ or S$, for other currencies that use the "$" symbol.}

This social monitoring report is a document of the borrower. The views expressed herein do not necessarily represent those of ADB's Board of Directors, Management, or staff, and may be preliminary in nature.

In preparing any country program or strategy, financing any project, or by making any designation of or reference to a particular territory or geographic area in this document, the Asian Development Bank does not intend to make any judgments as to the legal or other status of any territory or area.

## TABLE OF CONTENTS



**LIST OF TABLES**

**APPENDIXES**

| | | |
|---|---|---|
| **Project Number and Title:** | Loan xxxx-INO: Infrastructure Improvement for Shrimp Aquaculture Project | |
| **Social Safeguards Category** | Indigenous Peoples | |
| | Involuntary Resettlement | |
| **Reporting period:** | | |
| **Last report date:** | | |
| **Key sub-project activities since last report:** | | |

Source: {provide source of information with full title of the document and links}

## OUTLINE OF CONSOLIDATED SOCIAL SAFEGUARDS MONITORING REPORT[51]

### Executive Summary

This section provides concise statements of the overall project scope and impacts as detailed in the prepared safeguard documents, major implementation progress, key findings, summary of identified impacts and the mitigation actions and recommended actions.

### Background of the Report and Project Description

This section provides a general description of the project, including:
background/context of the monitoring report which includes the information on the project components, impacts, and outcome;
safeguards categorizations, and institutional requirements;
information on physical progress of project activities, scope of monitoring report and requirements, reporting period, including frequency of submission and changes in project scope and adjusted safeguard measures, if applicable.

### Monitoring Methods and Parameter

This section outlines the monitoring methods used by the project teams and the parameter used to monitor the project activities. Reference to the prepared safeguard documents such as community development framework (CDF), indigenous peoples planning framework (IPPF), *Masyarakat Hukum Adat* Development Plan (MHADP), and sustainable aquaculture development plan (SADP) should be used. Detail monitoring methods and its parameter should be included.

### Scope of Land and Non-land Requirements/ Impacts

This section outlines the overall scale and scopes of the project's land requirements for each subproject activities in each subproject sites. It includes information on the (i) locations; (ii) size of the required land; (iii) ownership status of the land of the proposed infrastructures, and (iv) potential non-land impacts. The matrix of list of land requirements, ownership status, and impacts from each activity in each subproject should be included in the annex of the report.

### Social Impact Assessment/ Socio-Economic Survey

This section outlines the progress of social impact assessment activities in each subproject site as required by ADB Safeguards Policy Statement (SPS) 2009, CDF and IPPF. Information on the land tenure and ownership system, poverty level, household education level, access to government basic facilities, status of vulnerable groups, women roles and participation in the shrimp/fishery sectors, and presence of cultural communities should be provided. Assessment result on the presence of cultural communities in the project areas should be provided. Matrix of social impact assessment status and completion should be included in the annex of the report.

### Land Provision – CDF and IPPF Implementation

[51] Following requirements of the ADB Safeguard Policy Statement (2009) and the *Operations Manual* section on safeguard policy (OM F1), borrowers/clients are required to establish and maintain procedures to monitor the status of implementation of safeguard plans and ensure progress is made toward the desired outcomes. For projects categorized as A or B in Involuntary Resettlement and/or Indigenous People, the Borrowers/clients are required to submit biannual monitoring reports for ADB review. The level of detail and comprehensiveness of a monitoring report is commensurate with the complexity and significance of social safeguards impacts (IR and IP).

This section should include the description of:
the overall land requirements and land provision arrangement for each component in each project output of the subproject;
overall status of safeguard document preparation process and progress of the implementation of the prepared safeguard plan such as SADP, MHADP. Quantitative as well as qualitative results of the monitoring parameters, as agreed in the approved plans, should be provided;
the status of subproject's due diligence reports (DDRs) updating, preparation and submission;
delays, obstacles, and other implementation issues, if any;
Matrix of land provision and CDF Implementation status (i.e., SDAP and MHADP preparation and implementation).

Attach detailed matrix of SADP preparation and implementation progress for each subproject in the annex of the report. This includes sample of land provision agreements with the participating farmers.

**Project disclosure, public participation, and consultation**

This section describes project disclosure mechanism, public participation, and consultations activities during the project implementation as agreed in the plan. This includes, numbers of activities conducted, issues raised during consultation and responses provided by the project team, implementing nongovernment organizations (NGOs), project supervision consultants, contractors, etc.

**Grievance Redress Mechanism (GRM)**

This section described the implementation of project GRM as design in the approved CDF and IPPF. This includes evaluations of its effectiveness, procedures, complaints receive, timeliness to resolve issues/ complaints and resources provided to solve the complaints. List of grievance received and its redressal status should be provided.

**Institutional Arrangement and Budget Allocation**

This section describes the actual project implementation, or any adjustment made to the institutional arrangement as described in the CDF, IPPF and project administration plan (PAM) for managing the social safeguards issues. This includes the establishment of safeguards unit/ team and appointment of staff in the executing agency (EA)/implementing agencies (Ias); implementation of the GRM and its committee; supervision and coordination between institutions involved in the management and monitoring of safeguards issues, availability, budget allocation for safeguard document implementation and roles of external monitor in the monitoring and implementation of the plan.

**Monitoring Results – Findings**

This section describes the summary and key findings of the monitoring activities. The results are compared against previously established benchmarks and compliance status (e.g., adequacy of SADP or MHADP implementation, public consultation and participation as detailed in CDF and IPPF, supporting documents for land provision/ agreements between the PIUs and participating farmers, the inclusion of smallholder farmers, women and IP members as targeted beneficiaries, complaint and grievance management, DDRs updating and preparation, social impact assessment, etc.) It also compared the findings against the objectives of safeguards or desired outcomes documented (e.g., IR impacts avoided or minimized; livelihood restored or enhanced;

IP's identity, human rights, livelihood systems, and cultural uniqueness fully respected; IP does not suffer adverse impacts, environmental impacts avoided or minimized, etc.).

**Recommendation, Follow up Actions, and Disclosure**

This section describes recommendations and further actions or items to focus on for the remaining monitoring period. It also includes lesson learned for improvement for future safeguards monitoring activities. Disclosure dates of the monitoring report to the affected communities should also be included. A time-bound summary table for required actions should be included.

**Compliance Status**

This section will summarize the compliance status of the project activities with the loan covenants, ADB SPS (2009) on SR 2 and SR 3.

**Appendix 1.** Monitoring parameters and methods
**Appendix 2.** Table summary of land requirements and land provision mechanism
**Appendix 3.** Table summary of social impact assessment survey preparation and progress
**Appendix 4.** Table of CDF (SADP) – IPPF (MHADP) preparation and implementation
**Appendix 5.** Table of project disclosure, public consultation and participation progress and implementation
**Appendix 6.** Summary of complaints received and solution status
**Appendix 7**. Sample of land provision agreements.

**Annex 1**
**Sample of Tables for Semiannual Safeguard Monitoring Report**

**Tables of Safeguard Documents Preparation and Implementation Progress**

Table 1. General Progress in Safeguard Document Implementations

| **Project Component/ Location [District] (Please segregated by district, sub-district, and villages name)** | **Fishpond Areas (Sub-district level)** | | | | **Number of farmers in the beneficiary group** | | | **Number of farmers category in the beneficiary group** | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | **Area (ha)** | **Number of Fish Farmer** | **Number of POKDAKAN** | **Number of POKLINA** | **Pond Cluster** | **Irrigation Canal** | **Pond Reconstruction + WWTP** | **Male** | **Female** | **Vulnerable** |
| District 1 | | | | | | | | | | |
| District 2 | | | | | | | | | | |
| | | | | | | | | | | |
| District 26 | | | | | | | | | | |
| **TOTAL** | | | | | | | | | | |

Source: {provide source of information with full title of the document and links}

Table 2. General Progress in Safeguard Document Implementations (Farmer Pond Cluster)

| **Project Component/Location [District] (*Please segregated by district, sub-district, and villages name)*** | **Land Tenure in Farmer Pond Cluster** | | | | | **POKDAKAN Name** | **Availability of Land Status Statement Letter** | **Availability of internal agreements of pond cluster** |
|---|---|---|---|---|---|---|---|---|
| | **Overall (ha)** | **Owner (ha)** | **Tenant (ha)** | **Production Pond Area (ha)** | **Number of Production Ponds Plot** | | | |
| District 1 | | | | | | | | |
| District 2 | | | | | | | | |
| | | | | | | | | |
| District 26 | | | | | | | | |
| **TOTAL** | | | | | | | | |

Source: {provide source of information with full title of the document and links}

Table 3. General Progress in Safeguard Document Implementations (Irrigation Canal)

| **Project Component/Location [District] (*Please segregated by district, sub-district, and villages name)*** | **Land Utilization Surrounding the Irrigation Canal** | | | | | **POKLINA Name** | **Statement Letter on Free from Dispute and Not Asking Compensation** |
|---|---|---|---|---|---|---|---|
| | **Number Pond Plot** | **Number of Pond Owner** | **Pond Utilization** | **…** | **….** | | |
| District 1 | | | | | | | |
| District 2 | | | | | | | |
| | | | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| District 26 | | | | | | | |
| **TOTAL** | | | | | | | |

Source: {provide source of information with full title of the document and links}

Table 4. General Progress in Safeguard Document Implementations (Farmer Pond and WWTP)

| **Project Component/Location [District] (*Please segregated by district, sub-district, and villages name)*** | **Land Tenure in Farmer Pond** | | | | | | **Availability of Land Status Statement Letter** | **Availability of Power Line** |
|---|---|---|---|---|---|---|---|---|
| | **Overall (ha)** | **Owner (ha)** | **Tenant (ha)** | **Production Pond Area (ha)** | **Number of Production Ponds Plot** | **WWTP area (ha)** | | |
| District 1 | | | | | | | | |
| District 2 | | | | | | | | |
| | | | | | | | | |
| District 26 | | | | | | | | |
| **TOTAL** | | | | | | | | |

Source: {provide source of information with full title of the document and links}

**Monitoring Tables on Community Development Plan Implementation**

Table 5. SADP-MHADP Preparation and Implementation Status

| **Subproject Location** | **SADP Preparation status** | **MHADP Preparation Status** | **SADP Implementation Status** | **MHADP Implementation Status** |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |

Source: {provide source of information with full title of the document and links}

Provide the land status (the owner or tenant) for project activities, land provision arrangements and the required adjustment during implementation, if any.

Table 6. Number of Affected Households

| **Location District – Sub-district** | **Subproject component/ activities** | **Land Ownership Status** | **Number of 180eporting involved** | **Land provision agreement** | **Adjustment during implementation** | **Change in Number of participating households Compared to Updated SADP** |
|---|---|---|---|---|---|---|
| | | | | | | |
| | | | | | | |
| | | | | | | |

Source: {provide source of information with full title of the document and links}

Table 7. Implementation Status of Social Inclusion Activity in the Project (for each Subproject)

| **Mitigation Measures Action** | **Indigenous People (HHs)** | **Land (pond) less (HHs)** | **Poor (HHs)** | **Female Headed Households** | **Other (add as needed)** |
|---|---|---|---|---|---|
| Civil Works Component | | | | | |
| 1 | | | | | |
| 2. | | | | | |
| n. | | | | | |
| Non-Civil Work Component | | | | | |
| 1. | | | | | |
| 2. | | | | | |
| n. | | | | | |
| | | | | | |

Source: {provide source of information with full title of the document and links}

Table 8. Implementation Status of Voluntary Land Use and Sharing

| Cluster Location | Actual completion date | Scheduled completion date | Current Status (Briefly describe status of completion of 181eporting 181ture, etc.) | No. of plots allocated for project | No. of AHs to be allocated plots | No. of plots agreed to be share in cluster areas | # Ahs issued title | # Ahs received reconstruction of sustainable shrimp pond | # Ahs living in cluster areas as of 181eporting period |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

* Include also separate residential plots to be provided to Ahs even if these are not included in shrimp aquaculture cluster sites.

Source: {provide source of information with full title of the document and links}

**Capacity Building and Training Provided**

Capacity development training provided: type and number of trainings, number of staff/officers trained (disaggregated by gender).

Activities of community-based organizations (CBOs)/mass organizations (as applicable)

Table 9. List of Training Program Implemented

| **No** | **Type of Training** | **Date** | **Location** | | **Number of Participant** | | | **Degree of Satisfaction with Their Skill** |
|---|---|---|---|---|---|---|---|---|
| | | | **District** | **Subdistrict** | **Male** | **Female** | **Vulnerable** | |
| | | | | | | | | |
| | | | | | | | | |

Source: {provide source of information with full title of the document and links}

**Monitoring Progress in *Masyarakat Hukum Adat* Development Plan (MHADP) Implementation**

Table 10. The Progress Status of MHADP Action Plan

| Project Component/Location [District] | List of MHA Living in the Area | MHA Development Activities | Implementation Status | Remarks |
|---|---|---|---|---|
| District 1 | | | | |
| District 2 | | | | |
| | | | | |
| | | | | |
| District 26 | | | | |
| **TOTAL** | | | | |

Source: {provide source of information with full title of the document and links}

**MHA and Vulnerable Group Participations**
(Describe issues identified along with planned and completed development actions. Also provide additional information regarding delays/obstacles in completing the agreed actions, if any, including remedial actions to be taken)

Table 11. Program Participation Activity

| Name of Subproject | Location | Project Impact/benefits to MHAs | MHA Participation | | Total Participation | Of which vulnerable[52] | Participation Issues |
|---|---|---|---|---|---|---|---|
| | | | Male | Female | | | |
| | Village 1 | | | | | | |
| | Village 2 | | | | | | |
| | | | | | | | |
| | | | | | | | |

Source: {provide source of information with full title of the document and links}

**Project Disclosure and Public Consultation**
(Describe progress of information disclosure, and public consultation activities during the project implementation as agreed in the plan. This includes final consultations with affected farmers during SADP finalization after the completion of detail design; the numbers of activities conducted; issues raised during consultations and responses provided by the project team, implementing NGOs, project supervision consultants, contractors, etc. This is to show how the social safeguards document (i.e., CDF, IPPF, SADP, MHADP, and SMR) has been disclosed to affected farmers and/or affected MHAs.)

**Disclosure**
Table 12. Means of Disclosure of Social Safeguards Document by Location

| Location | Translated approved CDF/IPPF/SADP/MHADP/SMR disseminated to village office? (yes/no) | PIB disseminated to Ahs (date/ method*) | PIB posted in public place? | Public meeting to present approved CDF/IPPF/SADP/MHADP/SMR (date) | Target date to complete disclos | Community board support required (Yes/No) |
|---|---|---|---|---|---|---|

[52] E.g., No. of female-headed with dependents, no. of poor;

| | | | (yes/no) | | ure (date) | |
|---|---|---|---|---|---|---|
| Village 1 | | | | | | |
| Village 2 | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

* Dissemination method such as handed out in public meeting, distributed house-to-house, etc.
Source: {provide source of information with full title of the document and links}

**Participation**

Table 13. Status of Community Participation for SADP – MHADP Preparation

| Subproject Location | Number of general meetings conducted (for both men and women). | Percentage of women out of total participants. | Number of meetings exclusively with women, exclusively with vulnerable groups and IP members | Major Issues and concern raised and discussed | Project Response and decision made |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |

Source: {provide source of information with full title of the document and links}

**Consultations**

Provide text in the below table that summarizes the Public Consultation activities and outcomes during the monitoring period. Attendance will be disaggregated by gender and ethnicity member of customary community (CC) or not as indicated in the screening guide of the CDF and IPPF.

Table 14. Consultation/Information Dissemination Meetings Conducted During Reporting Period

| Date | Venue | Participants [Disaggregated by gender] | Participants from MHAs Group | | Consultation Content | Issue raised and discussed | Meeting Minutes with PMU |
|---|---|---|---|---|---|---|---|
| | | | Ethnicity | Name of MHAs institution | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

Source: {provide source of information with full title of the document and links}

**Grievance Redress Mechanism (GRM)**

This is to describe the implementation of project GRM as design in the approved SADP/MHADP. This includes evaluations of its effectiveness, procedures, complaints receive, timeliness to resolve issues/ complaints and resources provided to solve the complaints. Special attentions should be given if there are complaints received from the affected people or communities.

Table 15. Summary of Grievance Cases by Level of GRM

| Location | No. of pending grievance from previous reporting period | No. of new grievance cases for reporting period | Total no. of cases received | No. of cases resolved | No. of cases progressed to next level |
|---|---|---|---|---|---|
| Level 1 (MMAF) | | | | | |
| | | | | | |
| Level 2 (UPT) | | | | | |
| | | | | | |
| Level 3 (Farmer Group, Village) | | | | | |

Source: {provide source of information with full title of the document and links}

Table 16. Status of Overall Grievance Redress (Date, Month, Year)

| Subproject | Safeguards Document | Grievance | | | Elevated to Court: # of complaints |
|---|---|---|---|---|---|
| | | Grievance Topic | # Of complaints | # Of satisfied Ahs | |
| Subproject 1 | | | | | |
| Subproject 2 | | | | | |
| | | | | | |
| | | | | | |

Source: {provide source of information with full title of the document and links}

**Budget and Timeframe**

Funds disbursement refers to handing over safeguard document implementation cost per stipulated social safeguard document budget allocation.

Table 17. Disbursement of Funds as of (Date, Month, Year)

| Subproject | Safeguards Document | Social Safeguards Budget | Funds Disbursed this Monitoring Period | Comment/s |
|---|---|---|---|---|
| Subproject | | | | |
| Subproject | | | | |
| | | | | |
| | | | | |
| **Total** | - | - | | |

Source: {provide source of information with full title of the document and links}

**Overall Progress, Issues, Concern, and Proposed Actions**

The sample tables below provide information on identified issues impacting the implementation and social safeguards compliance.

Complete the table 20 below, with the estimated percentage of work accomplished reflecting cumulative achievements per subproject based on the current monitoring period.

Table 18. Social Safeguards Implementation Progress as of (Date, Month, Year)

| **Social Safeguards Activities** | **Subproject "A" (name of the location)** | **Subproject "B"** | **Subproject "C"** | **Subproject D** | **Etc.** |
|---|---|---|---|---|---|
| Activities mentioned in CDF: | | | | | |
| Activities 1 | | | | | |
| Activities 2 | | | | | |
| Etc. | | | | | |
| Activities mentioned in MHADF: | | | | | |
| Activities 1 | | | | | |
| Activities 2 | | | | | |
| etc. | | | | | |

Source: {provide source of information with full title of the document and links}

For Table 19, indicate the issues and concerns per subproject as indicated in the headings and the way forward to overcome issues and concerns.

Table 19. Social Safeguards Issues, Concerns and Proposed Actions as of (Date, Month, Year)

| **Subproject** | **Safeguards Document** | **Issues and Concerns** | | **Proposed Action/s** |
|---|---|---|---|---|
| | | **New/Current** | **Pending issues from previous monitoring report** | |
| Subproject | | | | |
| Subproject | | | | |
| | | | | |
| | | | | |

## Outline Quarterly Progress Report

All information will be provided for quarter preceding issuance of report.

**Section A: Implementation Progress**
General data on progress in implementation
Problems encountered and resolved
Other issues pending
Other information or data relevant for project
Safeguard compliance on projects
GAP implementation progress
Risk mitigating action plan implementation progress
Updated implementation progress

**Section B: Procurement Information**

1. Detailed report on procurement activities
a. Status of bidding documents
b. Status of bids in progress
c. Contracts awarded
d. Contracts closed
e. Contracts with issues
2. Procurement plan for next quarter (or updated procurement plan spreadsheet)

**Section C: Financial Information**

1. Disbursement status
2. Special account status
3. Loan and Grant commitments
4. Contract payments
5. Status of audits
6. Other financial management issues

**Section D: Other Information**
Major/minor change in scope
Cost escalations
Revision in cost category
Change in implementation procedures
2 Major activities planned for next quarter

**Attachments:**

1. **PPR:** The quarterly report will be accompanied by an updated Project Performance Review (PPR) spreadsheet comprising (i) updated project implementation plan, (ii) contract awards and disbursement graphs and (ii) contract awards and disbursement plan.
2. **GAP:** GAP monitoring will accompany the quarterly report and provide information on progress achieved to meet each target identified in the GAP.

**Stakeholder Communication Strategy:** At inception, the government and ADB will agree on a strategy and action plan to disseminate information on the project's objective, outcome, and outputs. The quarterly report will provide details on activities and progress towards project outcome.

## Stakeholder Communication Strategy

1. Understanding stakeholder group dynamics and identifying their interests is important to improve project design and lead to more sustainable development outcomes. The initial stakeholder analysis will be refined to better understand different stakeholders' characteristics, motivations, and expectations. Stakeholder analysis and consultation ensures inclusion of views from a range of interested parties in developing and reviewing policies, programs, and projects. It helps resolve complex issues, gain consensus and support from stakeholders, reduce problems in implementation, and increase impact. A stakeholder analysis is an important tool to understand specific issues of different stakeholders which underpins a communications strategy, messages, and activities.

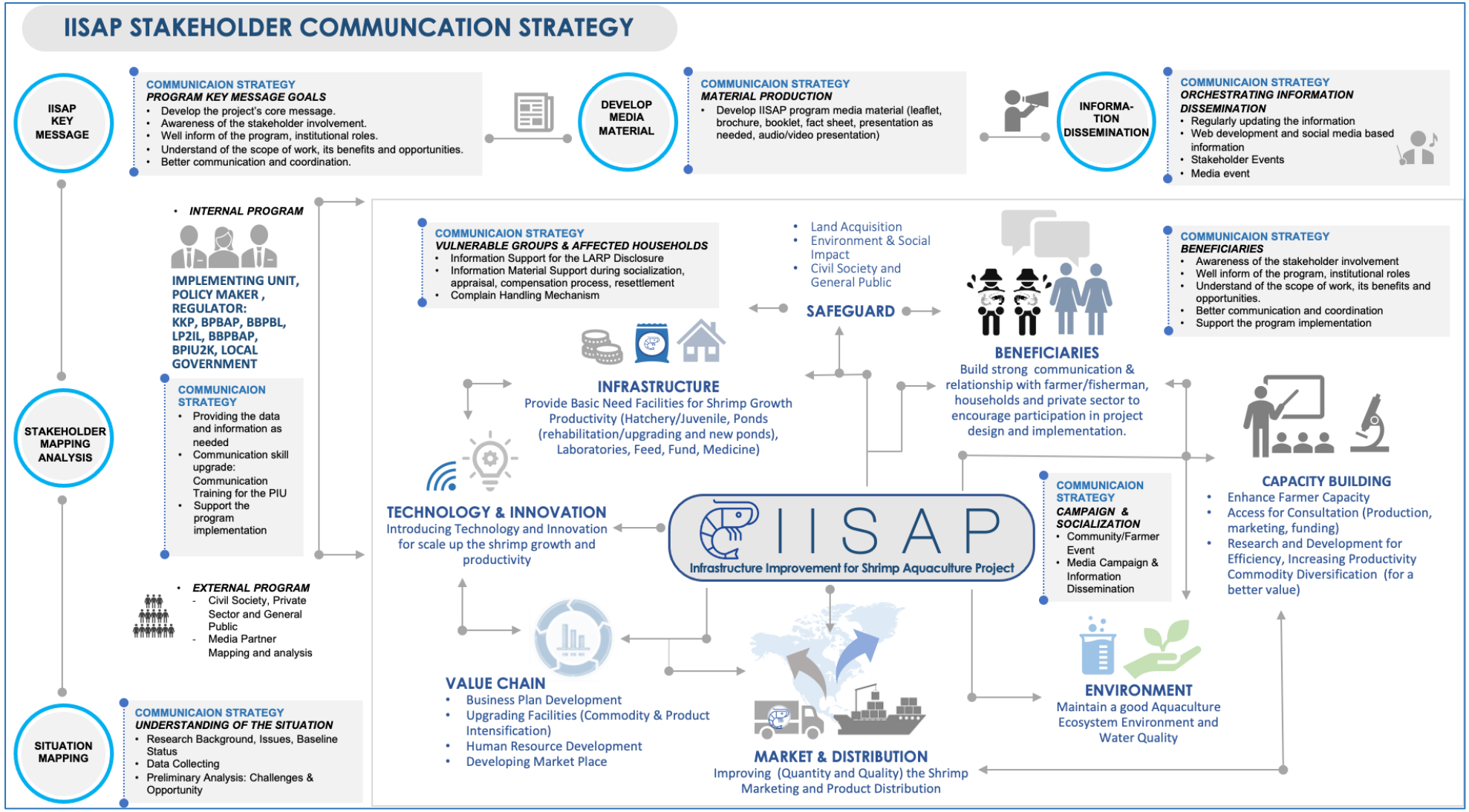
2. The stakeholders in the Infrastructure Improvement for Shrimp Aquaculture Project (IISAP- the project) are numerous and diverse: (i) national and regional policy/planning institution; (ii) provincial and local governments; (iii) nongovernment organizations (NGOs), civil society organization (CSOs) and professional organizations; (iv) beneficiaries, households, and farmer associations, (v) private sector partners; and (vi) vulnerable groups and affected households by land acquisition during project implementation.

3. Stakeholder analysis and consultation shall continue throughout the project cycle to maximize participation in the design and monitoring framework and feed into the participation plan and communications strategy. The stakeholder consultation/participation utilized three approaches: (i) formal public consultation workshops to present/discuss assessment of issues, project identification/prioritization criteria, and feasibility study recommendations; (ii) focus group discussion with stakeholders in key parts of the targeted areas impacted by the project; and (iii) meetings/interviews with government officials (national, provincial and district levels) and key informants (NGOs, CSOs, personnel working on related projects). The aim was to generate wide ownership of the project concept/design among multiple stakeholders at all levels.

4. A Stakeholder Communication Strategy (SCS) is a strategic plan of action that aims to reach key stakeholders by executing an interactive communication model as a consensus perspective on the project's relevance, key features, target benefits, and roles and responsibilities of the proponents and stakeholders. The SCS was developed during project's concept and design phases when the forms and levels of participation of stakeholders were defined. The formulation of the SCS and the participation plan is mandatory when (i) the social safeguards issues are significant, and (ii) the project requires medium or high-level participation of stakeholders. A stakeholder analysis and consultation is expected to improve the quality of decisions and minimize disruption during implementation.

5. The integration of the stakeholder analysis and communication strategy matrix below summarizes the key aspects of each specific strategy. The strategy's objectives are to have (i) appropriate and effective institutional arrangements in place for the infrastructure improvement for shrimp aquaculture; (ii) effective partnerships between government agencies at national, provincial, and district level in place to implement the infrastructure improvement for shrimp aquaculture; (iii) the community empowered and capable to play a vital role in the infrastructure improvement for shrimp aquaculture; and (iv) implementing agencies and other relevant stakeholders effectively participate in setting the direction of the project.

**Figure 1. Infrastructure Improvement for Shrimp Aquaculture Project Stakeholders Communication Strategy**




Source: Asian Development Bank.

**Table 1. Infrastructure Improvement for Shrimp Aquaculture Project Stakeholders Communication Strategy**

| No | STAKEHOLDER GROUP | MANDATE/INTEREST | ENGAGEMENT/ COMMUNICATION MEANS | ACTIVITIES | IMPLEMENTATION LEVEL |
|---|---|---|---|---|---|
| **A.** | **National and regional policy/planning institution** | | | | |
| 1. | Ministry of National Development Planning (BAPPENAS) | Oversee progress and provide guidance on project implementation<br>Monitor and evaluate the overall project performance and outcomes<br>Review and endorse annual work plans | (i) Understanding of Infrastructure Improvement on Shrimp Aquaculture Project (IISAP), including benefits and opportunities<br><br>(ii) Developing the message of IISAP implementation<br>The core message is addressed to all stakeholders<br>The customized message is designed for each stakeholder based on the results of the stakeholder analysis<br><br>Providing institutional support for the implementation of IISAP | Conduct a participatory stakeholder analysis<br>Develop the project's core and customized messages for each stakeholder group, and effectively communicate these messages based on the results of the stakeholder analysis<br>Facilitate the development of communication materials and holding of stakeholder events to convey core (general public) and customized (each stakeholder) messages of the project<br>Train the staff of project implementation units (PIUs) in the effective implementation of the stakeholders communication strategy (SCS) and in effective communication skills as specified in the guidance note<br>As necessary, train the representatives of primary and secondary stakeholders in effective participation in the project<br>Allocate an adequate budget (to be specified in the PAM) for the full implementation of the SCS<br>Periodically assess and update the stakeholder analysis and the SCS<br>Disseminate the information through community meetings, seminars, workshops, | PIUs supported by the Communication Team/Specialist |
| 2. | Ministry of Marine Affairs and Fisheries (MAFF): and its regional technical units (BPBAP, BBPBL, LP2IL, BBPBAP, BPIU2K) | Responsible for overall implementation of subprojects | | | |

| No | STAKEHOLDER GROUP | MANDATE/INTEREST | ENGAGEMENT/ COMMUNICATION MEANS | ACTIVITIES | IMPLEMENTATION LEVEL |
|---|---|---|---|---|---|
| | | | | socialization, various digital media platform, and social media<br>Ensure the availability of the project brief information by developing basic media materials (leaflet, brochure, booklet, fact sheet, presentation as needed, audio/video presentation) | |
| **B.** | **Provincial and local governments** | | | | |
| 1. | Provincial Fisheries Department | The provincial and district agencies will support the MAFF in the implementation of IISAP | Understanding of IISAP, including benefits and opportunities<br>Supporting the implementation of IISAP and integrating the project in the Regional Long Term Development Plan (RPJMD) | - Make available the information of stakeholder involvement in the project, institutional roles, and mandates<br><br>Ensure the availability of the project brief information by developing basic media materials (leaflet, brochure, booklet, fact sheet, presentation as needed, audio/video presentation)<br><br>Disseminate the information through community meetings, seminars, workshops, socialization, various digital media platform and social media | PIUs supported by the Communication Team/Specialist |
| 2. | District Fisheries Department | | | | |
| **C.** | **Nongovernment organizations (NGOs), civil society organizations (CSOs), and professional organizations** | | | | |
| 1. | Indonesian Shrimp Forum (FUI) | Stakeholders from upstream to downstream associations in shrimp value chain play a strategic role in analyzing the main obstacles and challenges, as well as formulating priority policy recommendations for development of a sustainable shrimp industry in Indonesia | Encouraging NGOs, CSOs, and professional organizations to participate in IISAP and get benefit from the project | Ensure the availability of the project brief information by developing basic media materials (leaflet, brochure, booklet, fact sheet, presentation as needed, audio/video presentation)<br><br>Disseminate the information through community meetings, | PIUs in provincial and local governments supported by the Communication Team/Specialist |

| No | STAKEHOLDER GROUP | MANDATE/INTEREST | ENGAGEMENT/ COMMUNICATION MEANS | ACTIVITIES | IMPLEMENTATION LEVEL |
|---|---|---|---|---|---|
| 2. | Association of Indonesian Fisheries Product Processing and Marketing Entrepreneurs (AP5I) | Build the Indonesian fisheries products processing industry that can compete and thrive in the global marketplace | | seminars, workshops, socialization, various digital media platform and social media. | |
| 3. | Shrimp Club Indonesia (SCI) and (Indonesian Young Shrimp Farmer (PMI) | SCI is an organization where shrimp farmers gather in Indonesia. With a platform like SCI, every shrimp farmer can follow and stay informed about the development of the shrimp industry both in Indonesia and the world. In addition, shrimp farmers can help each other and exchange ideas to deal with all problems in the shrimp industry and ask the experts who have joined SCI. Interest: sustainable shrimp production increase for members. | | | |
| 4. | Sustainable Fisheries Partnership (SFP) - NGO | SFP programs and initiatives tackle the major challenges to seafood sustainability, with a focus on increasing industry capacity and leadership to ensure widespread adoption of best practices and long-term change, engage with retailer, brand, and foodservice company | | | |
| 5. | The Sustainable Trade Initiative (IDH) - NGO | IDH is an organization that works with businesses, financers, governments, and civil society to realize sustainable trade in global value chains. IDH aquaculture program in Indonesia is focused on bringing the gap between financial institutions and the aquaculture sector and write | | | |

| No | STAKEHOLDER GROUP | MANDATE/INTEREST | ENGAGEMENT/ COMMUNICATION MEANS | ACTIVITIES | IMPLEMENTATION LEVEL |
|---|---|---|---|---|---|
| | | Investment guidelines for sustainable aquaculture. | | | |
| 6. | Asean Seafood Improvement Collaborative (ASIC) - NGO | Aquaculture Improvement Program for the implementation of sustainability standards in two standards for environmental (technical cultivation) and social & gender | | | |
| 7. | World Wide Fund (WWF) Seafood Saver Initiative – NGO | WWF Indonesia Foundation initiated a Seafood Savers Initiative to encourage the sustainable aquaculture development in Indonesia | | | |
| **D.** | **Beneficiaries, Households, and Farmer Associations** | | | | |
| 1. | Farmers/Fishermen Group (KTNA, *Kelompok Tani Nelayan Andalan,*) | Providing coordination between farmers group at village level in the same forum<br>Bridging the promotion and guidance to trading aquaculture products in market at district level | Encouraging participation/involvement from the households, farmer associations, women farmer groups to in the IISAP areas | Ensure the availability of the project brief information by developing basic media materials (leaflet, brochure, booklet, fact sheet, presentation as needed, audio/video presentation)<br>Disseminate information through community meetings, seminars, workshops, and socialization | PIUs in provincial and local governments supported by the Communication Team/Specialist |
| 2. | Farmers Groups | Organizing farmer community to conduct their activities in aquaculture<br>Preparing farmer communities to receive the sustainable aquaculture knowledge | | | |
| 3. | Community/Customary leaders | Supporting farmer communities to improving their lives<br>Supporting village offices in improving aquacultureaqualture activity | | | |

| No | STAKEHOLDER GROUP | MANDATE/INTEREST | ENGAGEMENT/ COMMUNICATION MEANS | ACTIVITIES | IMPLEMENTATION LEVEL |
|---|---|---|---|---|---|
| 4. | Women farmers groups | Ensuring access of women participation in aquaculture program at village level | | | |
| **E.** | **Private Sector Partners** | | | | |
| 1. | Village-owned Enterprises (BUMDes) | Supporting farmer communities to get credit from bank and grant from local governments<br>Facilitating farmer communities to get micro venture capital | Understanding IISAP overall program (including benefits and opportunities)<br>Encouraging participation/involvement of private sector partners in IISAP and get beneficiaries to the project | Build strong relationships with the private sector partner and other funders by providing a regular flow of information about the IISAP overview and progress implementation | PIUs in provincial and local governments supported by the Communication Team/Specialist |
| 2. | Exporters | Providing services to sell or distribute the shrimp commodity to a buyer abroad. The shrimp exporter shall comply with the importing country regulation and international market for food safety, environment sustainability and traceability. | | | |
| 3. | Aggregators | Providing exporters with shrimp raw material and facilitating shrimp post-harvest logistics services for farmers | | | |
| 4. | Feed Companies | Providing sustainable shrimp feed and technical assistance in shrimp farming to farmers | | | |
| 5. | Hatcheries | Providing disease resilient and fast growth shrimp seeds/ fry to shrimp farmers with SPF status. | | | |
| 6. | Multiplication Breeding Center | Providing disease resilient and fast growth broodstock to hatcheries with SPF status. | | | |
| **G.** | **Vulnerable Groups and Affected Households by Land Acquisition** | | | | |

| No | STAKEHOLDER GROUP | MANDATE/INTEREST | ENGAGEMENT/ COMMUNICATION MEANS | ACTIVITIES | IMPLEMENTATION LEVEL |
|---|---|---|---|---|---|
| 1. | A person, household, firm, private or public institution that, were affected as a result of the project | Asian Development Bank (ADB) policy requires that particular attention must be paid to the needs of the poorest affected people, and these are a distinct group of people who may be at high risk of impoverishment. Vulnerable sector will include for households headed by women, elderly household heads, land less, poor households, and indigenous peoples. | The vulnerable groups and affected households are not disproportionately impacted by the process of land acquisition and the implementation of the program. Generating CSO assistance in supporting the land acquisition and resettlement process, and making sure the affected people get the appropriate compensation based on asset assessment | Provide information support and media materials in the consultation and participation requirements of an environmental or social safeguards Disclose information on resettlement plan (RP) and/or resettlement framework, and resettlement monitoring reports. The information will be disclosed when the RP is updated, and clear implementation status established Develop a summary brochure or project information booklet containing relevant information on the land acquisition Together with safeguard specialist, develop a mechanism on handling complains. | PIUs supported by the Safeguard Team/Specialist and Communication team/specialist |
| 2. | CSOs | | | | |

Source: Asian Development Bank.

## Capacity Development Plan

1. Capacity building is a key component of the project and will be conducted at different levels: farmers, micro small and medium enterprises, other value chain stakeholders, and government staff. The primary objective of the trainings is to provide all stakeholders with the latest knowledge and tools to strengthen shrimp farming systems and ensure sustainable shrimp production in Indonesia.

**Trainings under output 1 (Quality and sustainability of inputs for shrimp production increased)** will target services which will play a key role in (a) operating and maintaining broodstock and multiplication centers, including equipment; (b) conducting training on seed production to small-scale hatcheries, including marketing strategy to promote the centers to farmers, (c) providing training (Training of Trainers) to Ministry of Marine Affairs and Fisheries (MMAF) staff; (d) conducting training on laboratory management and operations, and disease surveillance and monitoring for technical operating units (UPTs); (e) training farmers, including small-scale hatheries, on biosafety, monitoring water quality, disease, and residue; (f) socializing broodstock breeding protocols to small and medium seed hatcheries and suppliers, and Good Hatchery Practice (CPIB) to farmers; and (g) increasing farmers capacity in Good Feed Manufacturing (CPPIB) and self-sufficient feed systems (GERPARI).

**Trainings under output 2** (**Sustainable and climate adaptive aquaculture infrastructure and services developed**) will target farmers and will cover (a) financial literacy, business development, good aquaculture practices, social and environment safeguards, sustainable aquaculture, coastal and mangrove management, farmer group strengthening and institutional empowerment; (b) sustainable aquaculture ponds and irrigation canals, drains and road, including pond equipment; (c) INDOGAP implementation, including Good Aquaculture Practice (CBIB), involving women; and (d) pond water quality and wastewater management and cleaning technology, feed management, disease, and biosecurity. This output will also train UPTs and MMAF staff to better manage aquaculture assets and operation and maintenance.

**Trainings under output 3 (Shrimp aquaculture supply chain strengthened)** will target government institutions: Directorate General of Aquaculture at central level, UPT, regional technical operating units, extension officers in project provinces and districts, and project management and technical staff of project implementation units. This output will increase institutional capacity to support project activities and the aquaculture sector in general. At farm level, support will increase farmers' capacity in applying sound protocols for postharvest including shrimp handling, traceability (STELINA), and certification processes.

2. **Approach.** Trainings will be provided by trainers from MMAF or research institutions/universities, as relevant. The field school method, using demonstration facilities as the object of direct practice, will be applied by trainers/facilitators to core farmers. The same method will be applied by core farmers to expansion farmers as a form of knowledge transfer that has been obtained. Follow-up monitoring surveys will be conducted a few months later to assess the actual training effectiveness (% of adoption) and improve the delivery of future trainings based on lessons learned. When required, training need assessments can be conducted in advance to help design the curriculum. When applicable, the training needs assessments can eventually be used as pre-tests. The training program is presented in the table below.

## Table 1: Training Program

| Topics | UPT/ UPTD staff | HSRT | MMAF trainers | Shrimp farmers | Stakeholders | Duration | Location | Trainers/ Service Providers |
|---|---|---|---|---|---|---|---|---|
| **Output 1: Quality and Sustainabality of Inputs Production Increased** | | | | | | | | |
| Operating and maintaining broodstock and multiplication centers, including training on equipment | ≥ 30 | | | | | | Hawaii, USA; Bali, Aceh, South Sulawesi | Oceanic Institute |
| Seed production and broodstock management | | ≥ 140 core farmers, and 350 expansion farmers | | | | | Aceh, Lampung, South Sulawesi, East Java, Bali | UPTs in Aceh, Lampung, Situbondo, Bali, Takalar |
| ToT programs | ≥ 25 | | | | | | Aceh, Lampung, South Sulawesi, East Java, Bali | DGA |
| Broodstock breeding protocols | | ≥ 140 core farmers, and 350 expansion farmers | | | | | Aceh, Lampung, South Sulawesi, East Java, Bali | UPTs in Aceh, Lampung, Situbondo, Bali, Takalar |
| Good Hatchery Practice | | ≥ 140 core farmers, and 350 expansion farmers | | | | | Aceh, Lampung, South Sulawesi, East Java, Bali | UPTs in Aceh, Lampung, Situbondo, Bali, Takalar |
| Requirements to access markets of the Seafood Task Force | | | | | | | GEF | |
| Laboratory management and operations | | 70 | | | | | Aceh, Lampung, Serang, Jepara, | UPTs in Aceh, Lampung, Serang, Jepara, Situbondo, Bali, |

| Topics | UPT/ UPTD staff | HSRT | MMAF trainers | Shrimp farmers | Stakeholders | Duration | Location | Trainers/ Service Providers |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | Situbondo, South Sulawesi, Bali | Takalar |
| Disease surveillance and monitoring | | 70 | | | | | Aceh, Lampung, Serang, Jepara, Situbondo, South Sulawesi, Bali | |
| Biosecurity and biosafety, and monitoring water quality, disease, and residue | | 70 core farmers and 350 expansion farmers | | 30% of the traditional farmers population (equivalent to 35,000 farmers from the core and expansion groups of which at 10% are women) | | | Aceh, Lampung, West Java, East Java, South Sulawesi (22 districts) | UPTs in Aceh, Lampung, Serang, Jepara, Situbondo, Bali, Takalar |
| Harmonization of testing methodology, validation/ verification of test methods, and AMR control | 70 | | | | | | Aceh, Lampung, Banten, Central Java, East Java, South Sulawesi, Bali | UPTs in Aceh, Lampung, Serang, Jepara, Situbondo, Bali, Takalar |
| Shrimp breeding bioinformatics | 70 | | | | | | Aceh, South Sulawesi, and Bali | UPTs in Aceh, Bali, Takalar |
| **Output 2: Sustainable Aquaculture Infrastructure and Services Developed** | | | | | | | | |
| Financial literacy, farmer-based enterprise, access to finance, and small-scale farmer group strengthening and | | | | 30% of the traditional farmers population (equivalent to 35,000 farmers | | | Aceh, Lampung, West Java, East Java, South Sulawesi (22 | UPTs in Aceh, Lampung, Serang, Jepara, Situbondo, Bali, Takalar |

| Topics | UPT/ UPTD staff | HSRT | MMAF trainers | Shrimp farmers | Stakeholders | Duration | Location | Trainers/ Service Providers |
|---|---|---|---|---|---|---|---|---|
| farmer institutional empowerment | | | | from the core and expansion groups of which 10% are women) | | | districts) | |
| Establishment and strengthening of farmer-based enterprises | | | | 521 farmers groups | | | Aceh, Lampung, West Java, East Java, South Sulawesi (22 districts) | UPTs in Aceh, Lampung, Serang, Jepara, Situbondo, Bali, Takalar |
| Good and sustainable aquaculture practices in international forum (ToT) | 25 | | | | | | West Java, Banten, East Java, South Sulawesi | DGA |
| Good and sustainable aquaculture practices | | | 125 | 30% of the traditional farmers population (equivalent to 35,000 farmers from the core and expansion groups of which 10% are women) | | | Aceh, Lampung, West Java, East Java, South Sulawesi (22 districts) | UPTs in Aceh, Lampung, Serang, Jepara, Situbondo, Bali, Takalar |
| INDOGAP implementation, including CBIB | | | 125 | 30% of the traditional farmers population (equivalent to 35,000 farmers from the core and expansion groups of which 10% are women) | | | Aceh, Lampung, West Java, East Java, South Sulawesi (22 districts) | UPTs in Aceh, Lampung, Serang, Jepara, Situbondo, Bali, Takalar |

| Topics | UPT/ UPTD staff | HSRT | MMAF trainers | Shrimp farmers | Stakeholders | Duration | Location | Trainers/ Service Providers |
|---|---|---|---|---|---|---|---|---|
| INDOGAP implementation, including CPPIB | | | | | 140 feed companies (20 companies per province) | | | UPTs in Aceh, Lampung, Serang, Jepara, Situbondo, Bali, Takalar |
| INDOGAP implementation, including CBIB, CPIB, CPPIB (ToT) | | | 150 district agencies | | | | | UPTs in Aceh, Lampung, Serang, Jepara, Situbondo, Bali, Takalar |
| Sustainable integrated shrimp farming | 25 | | | | | | | DGA |
| Aquaculture asset management | 50 | | | | | | DGA | DGA |
| Shrimp farming technology including pond water quality, wastewater management and cleaning technology, feed management, disease and biosecurity, mangrove management and replanting[53] | | | 125 | 30% of the traditional farmers population (equivalent to 35,000 farmers from the core and expansion groups of which 10% are women) | | | Aceh, Lampung, West Java, East Java, South Sulawesi (22 districts) | UPTs in Aceh, Lampung, Serang, Jepara, Situbondo, Bali, Takalar |
| **Output 3: Shrimp Aquaculture Supply Chain Strengthened** | | | | | | | | |

[53] The training on mangrove will include capacity building on how to change perceptions on mangroves being regarded as nuisance or firewood. *Mangroves (mangrovealliance.org)*

| Topics | UPT/ UPTD staff | HSRT | MMAF trainers | Shrimp farmers | Stakeholders | Duration | Location | Trainers/ Service Providers |
|---|---|---|---|---|---|---|---|---|
| Good shrimp post-harvest handling to add value, food safety and quality assurance | | | 95 | 30% of the traditional farmers population (equivalent to 35,000 farmers from the core and expansion groups of which 10% are women) | 60 aggregators | | Aceh, Lampung, West Java, East Java, South Sulawesi (22 districts) | UPTs in Aceh, Lampung, Serang, Jepara, Situbondo, Bali, Takalar |
| CBIB, CPPIB certification processes | | | 95 | 30% of the traditional farmers population (equivalent to 35,000 farmers from the core and expansion groups of which 10% are women) | 140 feed companies | | Aceh, Lampung, West Java, East Java, South Sulawesi (22 districts) | UPTs in Aceh, Lampung, Serang, Jepara, Situbondo, Bali, Takalar |
| INDOGAP, STELINA, and traceability | | 150 | 95 | 30% of the traditional farmers population (equivalent to 35,000 farmers from the core and expansion groups of which 10% are women) | 140 feed companies, 60 aggregators, 100 exporters | | Aceh, Lampung, West Java, East Java, South Sulawesi (22 districts) | UPTs in Aceh, Lampung, Serang, Jepara, Situbondo, Bali, Takalar |

AMR = antimicrobial resistance, CBIB = Good Aquaculture Practice, CPIB = Good Hatchery Practice, CPPIB = Good Feed Manufacturing, DGA = Directorate General of Aquaculture, HSRT = small-scale hatchery, INDOGAP = Good Agricultural Practices, MMAF = Ministry of Marine Affairs and Fisheries, STELINA = National Fish Traceability and Logistics System, ToT = training of trainers, UPT = technical operating unit, UPTD = regional technical operating unit.
Note: Follow-up training (refresher courses) will be conducted a few months later or the following year.
Source: Asian Development Bank.

# Monitoring And Evaluation Framework

Monitoring and Evaluation (M&E) in the project will have a **management and accountability function**. Three different types of M&E will be carried out under the project: (i) implementation and financial progress monitoring (by the finance staff), (ii) social and environment safeguard monitoring (by the safeguards staff), and (iii) outcome and impact evaluation (by the M&E team).

## M&E Guidelines

In the first 6 months of the project, the M&E consultant will prepare the M&E guidelines which will describe the overall M&E system. The M&E system will be built around two main pillars:

> **Monitoring of implementation progress** (number of farmers/micro small and medium enterprises (MSMEs)/farmer organizations reached, number of infrastructures built, number of trainings facilitated, etc.).
> **Monitoring and evaluation of the project outcomes/impact** (increase in production, productivity, sales, adoption of improved practices, etc.). In the Results Framework and the Design Monitoring Framework (DMF),[54] this refers to indicators at project goal level, development objectives level, and output level.

The M&E guidelines will describe the mechanisms for implementation of the different M&E activities, including: (i) list of data to be stored in the Management Information System (MIS) and guidance for development of the MIS; (ii) data collection mechanisms (data flow, responsibilities, timeline, templates for data collection); (iii) a review/update of the result framework and DMF; (iv) an outline of the terms of reference (ToR) for the baseline, mid-term and completion surveys; and (v) a reporting schedule for M&E aligning with key Project reporting mechanisms. The guideline will be practical and short to ensure it remains a handy document for all project stakeholders.

## Results Framework

The results framework comprises a comprehensive list of (i) tracking indicators on project implementation progress, and (ii) outcome/impact level indicators. Data will be disaggregated by component/output and, wherever possible, by district, gender, youth, and other dimensions. The indicators selected include key indicators from the 2020-2024 midterm development plan (RPJMN) and mandatory indicators from the Asian Development Bank (ADB). For each indicator, guidance is provided on means of verification, timeline, defining the indicator and how to compute it. Each indicator has also been assigned a baseline value and end target. Both of these will need to be revisited after completion of the baseline survey.

It is the responsibility of the M&E team to regularly update the results framework based on information gathered through the MIS, relevant surveys, and project team members.

[54] The Design and Monitoring Framework presents selected indicators from the result framework.

## Management Information System

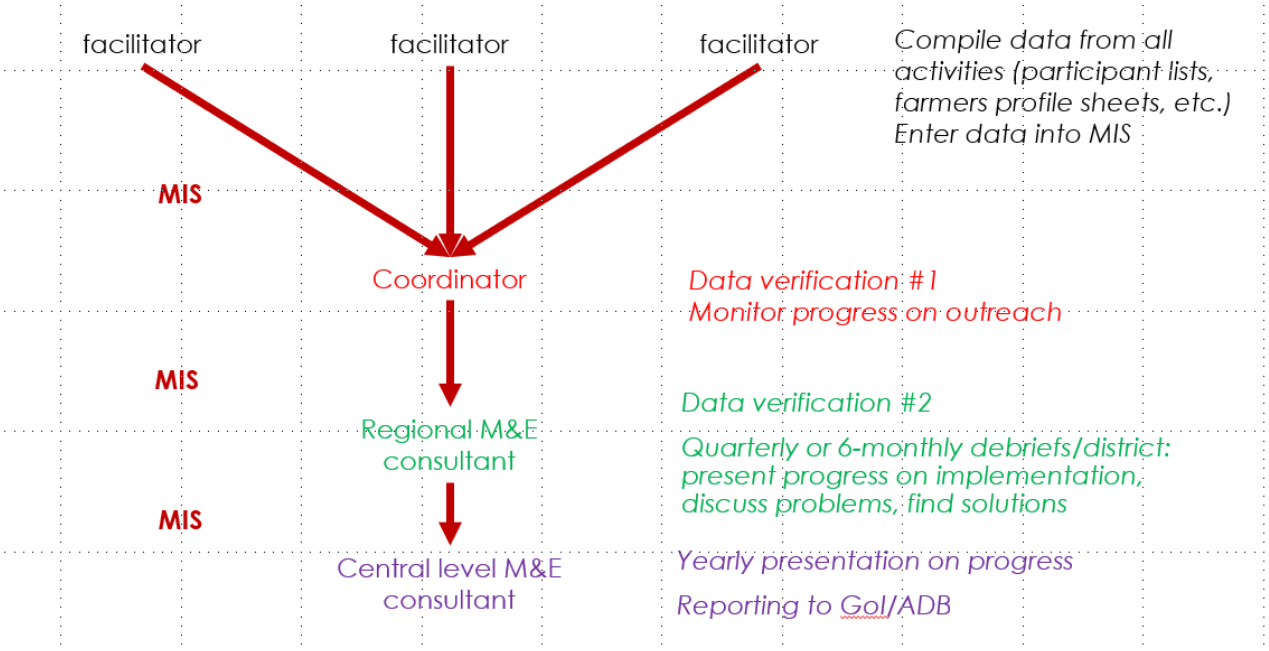
A geospatial web-based MIS will be established to regularly track and update gender-disaggregated data on project outreach, activities, outcomes, and impact. A service provider will set up the system which will be operational in the first 6 months of the project and will be used as the main source of information to update the results framework. Key features of the MIS will be:

To cover data on a wide range of stakeholders and activities: farmers, MSMEs, farmer organizations, infrastructures built, production data, etc.
To generate monthly dashboards showing progress on key outputs and objectives, and profiling performance of project implementation units (PIUs). Dashboards will be generated at different levels (field facilitators, coordinators, regional, and central M&E consultant) to enable each of these resource persons to verify and monitor data relevant to their respective level of responsibility.
To centralize data around each farmer, farmer organization, MSME, etc. using unique identification numbers. These identification numbers will be provided to each of these entities and will be recorded when participating in project activities. This will simplify data computation.
To include a "verification button" to be used by coordinators and regional M&E consultants at key steps of the data flow. This will help enforce accountability among project staff.
Ease in use through a simple and intuitive layout.

Annex 1 provides a first overview of the data to be stored in the MIS.

## Implementation Responsibilities and Data Flow

**Figure 1. M&E data flow**




Source: Asian Development Bank.

The primary sources of information will be the field facilitators in charge of populating the MIS. External service providers will also be accountable for activities they implement and will regularly feed data to the coordinators. Similarly, supported structures such as MSMEs and farmer organizations will be required to keep records on expenses, volumes sold, and value of sales. Their data will also be included in the MIS.

Complying with the predefined data flow will be key to mainstream accountability and avoid data inconsistency. While data compilation and verification will mostly be the responsibility of the M&E team, all team members will be in charge of supporting the overall process by monitoring data within their respective areas.

**Safeguards Monitoring**

The Central Project Management Unit (CPMU), with the support of consultants, will supervise the preparation and implementation of social and environment safeguards requirements (involuntary resettlement and indigenous people screening, due diligence reports, capacity development plans, indigenous people plans, and initial environment examination) and will monitor and report on all safeguards activities. Project progress reports will indicate subprojects requirements based on screening in each aquaculture cluster and the status of implementation. Semi-annual monitoring reports on the implementation of the social and environment safeguards will be submitted to ADB for review and will be disclosed on the ADB and project websites. Safeguards monitoring will be the responsibility of the social and environmental safeguards team.

**Gender monitoring**

The CPMU, with support from a national Gender Consultant and PIU gender focal persons, will oversee the Gender Action Plan (GAP) implementation, monitoring, and reporting. Gender sensitive indicators from the results framework and GAP will be integrated in the Project Performance Monitoring System (PPMS). Special attention will be given on collection and analysis of sex-disaggregated data. The GAP will be regularly reviewed and updated and will be included in quarterly progress reports.

**Reviewing and Reporting**

Drawing on the data collected through the dashboards, the CPMU and PIUs will review project performance each quarter, while the CPMU and ADB will jointly assess project implementation at least once every year. The CPMU will provide ADB with: (i) quarterly progress reports in a format consistent with ADB's project performance reporting system; (iii) consolidated annual reports including progress achieved by output as measured through the indicator's performance targets, key implementation issues and solutions, an updated procurement plan, and updated implementation plan for next 12 months; and (iv) a project completion report within 6 months of physical completion of the Project. To ensure project investments continue to be both viable and sustainable, the audited project financial statements (APFS) together with the associated auditor's report will be adequately reviewed. The CPMU will ensure that findings and recommendations inferred from the gender analysis are included in the quarterly progress reports.

**Post-Training Surveys**

Teams of 5 students in each district will be recruited (under the regional M&E team) in year 2, 3, and 4 to conduct 20 days of data collection for post-training surveys. Data collection will be conducted using tablets and will provide a rapid snapshot of the efficiency of specific trainings and enable adjustments of these trainings where necessary. Trainings to be monitored will include trainings in production, value chain, financial literacy, and management of farmer organizations/MSMEs. Surveys and data will be collected in a disaggregated manner (e.g., by sex, disability, ethnicity, age, etc.).

Such surveys should be conducted about 6 months after a training was implemented and will be no longer than 1-2 pages (15 minutes interview). Questions will help verify if (i) beneficiaries did receive the said training, (ii) trainees understood the topics taught, and (iii) trainees did put into practice their learnings. Post-training survey reports will be prepared by the M&E teams and will not be longer than 2-3 pages.

**Outcome Level Surveys**

Outcome level surveys will be implemented at baseline, midterm, and completion of the project to provide an in-depth understanding of the project's results. The baseline survey will help adjust the end-of-program targets (established at design stage) to realistic objectives. The midterm survey will provide recommendations to improve implementation strategies and ensure end-of-program targets can be achieved.

Outcome level surveys will comprise of a household survey (including core and expansion group farmers) and a representative sample of MSMEs and farmer organizations. These surveys will report on key indicators defined in the results framework.

Questionnaires will be prepared with the support of ADB since questions for a number of core outcome indicators will need to follow ADB M&E guidelines and will need to be contextualized after consultation with project technical consultants.

## RESULTS FRAMEWORK

| Target Indicator | Indicator baseline value (2022) | Target value | Source (baseline/target) |
|---|---|---|---|
| | | | |
| **Outcome:** Productivity, profitability, and environmental sustainability of shrimp aquaculture increased (by 2028) | | | |
| Yield of shrimp farming increased for farms upgraded by the project | 0.6 tons/hectares (ha)/year | 3 tons/ha/year | Project baseline and impact evaluation surveys, Ministry of Marine Affairs and Fisheries (MMAF) and Ministry of National Development Planning (BAPPENAS) annual reports |
| Exchange rate for farmers benefiting from infrastructure support increased | 2020 baseline: 100 | 107 | Project baseline and impact evaluation surveys, MMAF and BAPPENAS annual reports |
| Additional hectares of traditional shrimp aquaculture upgraded to sustainable aquaculture | 0 | 5,260 ha[a] | Project baseline and impact evaluation surveys, MMAF and BAPPENAS annual reports |
| **Output 1: Quality and sustainability of inputs for shrimp production increased (by 2027)** | | | |
| **1.1 Broodstock and Multiplication Centers Capacity Increased** | | | |
| Broodstock center for high quality genetic established | 0 | A modern broodstock center with climate and disaster proofing, and gender responsive and inclusive features with a capacity of 500,000 brood stock/year operationalized | Project baseline and impact evaluation surveys, MMAF and BAPPENAS annual reports |
| Multiplication centers capacity increased | 0 | Two multiplication centers with climate and disaster proofing, and gender responsive and inclusive features with a capacity of 2 billion shrimp nauplii/year established | Project baseline and impact evaluation surveys, MMAF and BAPPENAS annual reports |
| Knowledge for operating and maintaining modern broodstock and multiplication centers improved | 0 | At least 30 MMAF staff (at least 20% of whom are women) report having advance competence for operating broodstock and multiplication centers | Project baseline and impact evaluation surveys, MMAF and BAPPENAS annual reports |
| Training for improved broodstock breeding protocols, seed production, and Good Hatchery Practice provided to small and medium | 0 | At least 140 small-scale hatcheries from the core group (at least 20% of whom are women) and 350 seed farmers from the expansion group[b] (at least 20% of whom are women) report having improved | Project baseline and impact evaluation surveys, MMAF and BAPPENAS annual reports |

| Target Indicator | Indicator baseline value (2022) | Target value | Source (baseline/target) |
|---|---|---|---|
| scale hatcheries (HSRT) and seed farmers | | competence for broodstock breeding protocols, seed production, and Good Hatchery Practice (CPIB) | |
| Number of CPIB certified hatcheries increased | 69 shrimp hatcheries already certified | Additional 70 CPIB registered hatcheries | Project baseline and impact evaluation surveys, MMAF and BAPPENAS annual reports |
| Broodstock provided to selected HSRTs | 0 | broodstock packages (600 broodstock per package) provided to 20 HSRTs | Project baseline and impact evaluation surveys, MMAF and BAPPENAS annual reports |
| Inputs provided to HSRT | 0 | Nauplii packages (5 million nauplii per package) provided to 50 HSRTs | Project baseline and impact evaluation surveys, MMAF and BAPPENAS annual reports |
| **1.2 Sustainable Feed Capacity Increased** | | | |
| Small and medium feed suppliers and farmers trained on feed self-sufficiency protocols and Self-Sufficient Feed Systems (GERPARI) | 0 | At least 35,000 farmers (at least 20% of whom are women) report having basic competence for feed self-sufficiency protocols and GERPARI | Project baseline and impact evaluation surveys, MMAF and BAPPENAS annual reports |
| **1.3 Disease and Environment Control Enhanced** | | | |
| Modern laboratories including climate and disaster proofing, and gender responsive inclusive features constructed and equipped | 0 | Seven modern laboratories newly constructed including climate and disaster proofing, and gender responsive inclusive features and modern equipment | Project baseline and impact evaluation surveys, MMAF and BAPPENAS annual reports |
| Technical operating unit (UPT) staff report having advance competence for operating laboratories and disease surveillance and monitoring | 0 | At least 70 MMAF staff (at least 20% of whom are women) report having advance competence for operating laboratories and disease surveillance and monitoring | Project baseline and impact evaluation surveys, MMAF and BAPPENAS annual reports |
| HSRTs and farmers/groups competence for biosecurity and biosafety, and monitoring water quality, disease, and residue increased | 0 | At least 70 HSRTs (at least 20% of whom are women) and 350 farmers from the expansion group (at least 20% of whom are women) report having basic competence for biosecurity and biosafety, and monitoring water quality, disease, and residue | Project baseline and impact evaluation surveys, MMAF and BAPPENAS annual reports |
| **Output 2: Sustainable and climate adaptive aquaculture infrastructure and services developed (by 2027)** | | | |
| **2.1 Farmer-Based Enterprises Development and Strengthening** | | | |

| Target Indicator | Indicator baseline value (2022) | Target value | Source (baseline/target) |
|---|---|---|---|
| Extension workers/facilitators trained on sustainable aquaculture principles to farmers | 0 | At least 23 extension workers and 69 facilitators (at least 20% of whom are women) report having advance competence for project implementation | Project baseline and impact evaluation surveys, MMAF and BAPPENAS annual reports |
| Farmer-based enterprises established and/or strengthened | 0 farmers groups Less than 5% women headed in average | At least 521farmers groups established and strengthened of which at least 20% are women-headed | Project baseline and impact evaluation surveys, MMAF and BAPPENAS annual reports |
| Farmers capacity in financial literacy, good aquaculture practices, social and environment safeguards, sustainable aquaculture, mangrove management, coastal and mangrove management improved | 0 | 30% of the traditional farmers population (equivalent to 35,000 farmers from the core and expansion groups), at least 20% of whom are women, report having basic competence for financial literacy, good aquaculture practices, social and environment safeguards, climate resilient and sustainable aquaculture, mangrove management, coastal and mangrove management | Project baseline and impact evaluation surveys, MMAF and BAPPENAS annual reports |
| Sustainable aquaculture development plans for farmer-based enterprises and farmers groups benefiting from infrastructure support prepared | 0 | At least 521 sustainable aquaculture development plans developed with specific measures for female farmers | Project baseline and impact evaluation surveys, MMAF and BAPPENAS annual reports |
| **2.2 Sustainable Aquaculture Production Facilities Developed** | | | |
| Sustainable aquaculture cluster facilities established | 0 | 22[c] sustainable aquaculture cluster facilities established | Project baseline and impact evaluation surveys, MMAF and BAPPENAS annual reports |
| Farmer individual ponds facilities upgraded to sustainable aquaculture production facilities | 0 | 42 farmer ponds upgraded to sustainable aquaculture production facilities | Project baseline and impact evaluation surveys, MMAF and BAPPENAS annual reports |
| Wastewater treatment plant developed | 0 | 4,620 individual wastewater treatment plants constructed | Project baseline and impact evaluation surveys, MMAF and BAPPENAS annual reports |
| Guidelines for operation and maintenance of ponds (clusters/individual), irrigation | None | Guidelines for operation and maintenance of ponds (clusters/individual), irrigation canals and drains, and communal WWTPs developed | Project baseline and impact evaluation surveys, MMAF and BAPPENAS annual reports |

| Target Indicator | Indicator baseline value (2022) | Target value | Source (baseline/target) |
|---|---|---|---|
| canals and drains, and communal WWTPs developed | | | |
| Farmers groups capacity in managing tertiary blocks increased | 0 | At least 5,210 farmers (at least 20% of whom are women) report increased knowledge in water management and canal management including vegetative management | Project baseline and impact evaluation surveys, MMAF and BAPPENAS annual reports |
| Aquaculture asset management information system improved | Basic aquaculture asset management information system developed | Aquaculture asset management information system operationalized with its android application for field surveys | Project baseline and impact evaluation surveys, MMAF and BAPPENAS annual reports |
| Aquaculture asset information registered in the asset management information system | 2,200 ha of aquaculture asset registered in Sulawesi | 10,000 ha of aquaculture asset registered in the asset management information system | Project baseline and impact evaluation surveys, MMAF and BAPPENAS annual reports |
| **2.3 Sustainable Aquaculture Production Practices Introduced** | | | |
| Farmers capacity improved in adhering to Indonesia Good Agriculture Practices (INDOGAP), Good Aquaculture Practice (CBIB), Good Feed Manufacturing (CPPIB), pond water quality and wastewater management and cleaning technology, mangrove management and replanting | 0 | 30% of the traditional farmers population (equivalent to 35,000 farmers from the core and expansion groups) (at least 20% of whom are women) report having basic competence for INDOGAP, CBIB, CPPIB, pond water quality and waste water management and cleaning technology; and mangrove management and replanting | Project baseline and impact evaluation surveys, MMAF and BAPPENAS annual reports |
| Coastal ecosystem restored | None | 50,000 mangrove saplings planted in canals | Project baseline and impact evaluation surveys, MMAF and BAPPENAS annual reports |
| **Output 3: Shrimp aquaculture supply chain strengthened** | | | |
| **3.1 Shrimp Handling and Traceability Improved** | | | |
| Farmers capacity in handling, traceability, certification, food safety strengthened | 0 | 30% of the traditional farmers population (equivalent to 35,000 farmers from the core and expansion groups), at least 20% of whom are women, report having basic competence for good practices for | Project baseline and impact evaluation surveys, MMAF and BAPPENAS annual reports |

| Target Indicator | Indicator baseline value (2022) | Target value | Source (baseline/target) |
|---|---|---|---|
| | | handling, certification and traceability (STELINA), certification processes, quality assurance system and food safety of aquaculture products, CBIB, CPIB, CPPIB | |
| Number of certified farms (CBIB, CPIB, CPPIB) increased | 0 | 20 broodstock, 23 aggregators, and 23 processors are certified | Project baseline and impact evaluation surveys, MMAF and BAPPENAS annual reports |
| Broodstock centers (BC), multiplication broodstock centers (MBC), hatcheries, feed companies, farmers, aggregators and processors registered into INDOGAP system and using STELINA for traceability from upstream to downstream | None | BC and MBC (20), hatcheries (10), feed companies (10), farmers (244), aggregators and processors (10) registered into INDOGAP system and using STELINA for traceability from upstream to downstream | Project baseline and impact evaluation surveys, MMAF and BAPPENAS annual reports |
| **3.2 Regulatory Framework and Systems for Shrimp Aquaculture Improved** | | | |
| Guidelines and regulations rationalized and issued | None | Regulation for the use of domestic superior shrimp broodstock and application of CPPIB in all feed mills issued<br><br>Regulations and incentive system (i.e., Hatchery with CPIB for seed, INDOGAP consist of CBIB [farmer], CPIB [hatchery] and CPPIB [feed] only), hatchery zonation area rationalized | Project baseline and impact evaluation surveys, MMAF and BAPPENAS annual reports |
| National action plans for shrimp aquaculture adopting Aquaculture Management Area (AMA) approach including climate change mitigation and resiliency developed | None | National action plans for shrimp aquaculture adopting AMA approach including climate change mitigation and resiliency developed | Project baseline and impact evaluation surveys, MMAF and BAPPENAS annual reports |
| **3.3 Project Management and Capacity Building** | | | |
| MMAF geospatial database upgraded, and sex- | Not applicable | MMAF geospatial database upgraded, and sex-disaggregated data and checklist of | Project baseline and impact evaluation surveys, MMAF and BAPPENAS annual reports |

| Target Indicator | Indicator baseline value (2022) | Target value | Source (baseline/target) |
|---|---|---|---|
| disaggregated data and checklist of information related to human welfare including gender integrated | | information related to human welfare including gender integrated | |

[a] This includes (i) clusters in UPT area (50 ha), (ii) clusters in farmers area (170 ha), and (iii) 2,350 ha of individual farmers ponds.
[b] Through training of trainers.
[c] Five in UPT areas and 22 in farmers areas.
[d] This covers UPT assets in the 7 provinces and assets upgraded through the project.
Source: Asian Development Bank.

## Annex: Outline of Data to be Stored in the MIS

This is a draft list and should be updated as per information required in the MIS and by the project.

**Sustainable Aquaculture Development Plan:** Unique reference number, hectares of ponds benefiting from water work, private sector partner details, INDOGAP certification, and reference number of MSMEs.
**Infrastructures** (irrigation, roads, ponds, hatcheries, laboratories, etc.): Location, size, status, rehabilitation/new, and community contribution.
**Farmers:** Unique reference number, location, name/age/gender, core or expansion group, gender, number of household members, other household member benefiting from project (relationship and reference number of family member), trainings joined (topic, duration, date), part of other project interventions or not (MSME/farmer organization/post-harvest facility, etc.) – provide reference number of other interventions.
**MSMEs:** Unique reference number, type, name, location/GPS, main activity, new or existing, number of persons working (gender/age/full-time or recurrent seasonal/family member or not/started to work before/after project support started), manager's details, and support received.
**Farmer Organization:** Unique reference number, type, name, location/GPS, number of members by gender/age, leader's details, woman/youth in management committee, relationship with public or private sector, number of persons employed (gender/age/full-time or recurrent seasonal/started to work before/after project support started), and support received.
**Post-harvest facilities:** Unique reference number, type, name, location/GPS, main activity/crop, number of persons employed by the facility (gender/age/full-time or recurrent seasonal/started to work before/after project support started), facility manager details, support received, and reported post-harvest loss % (from total volume).