TERM OF REFERENCE

Consultants in support for the YKAN Fisheries Program: Strengthening Technology and Data Collection for NORAD projects. Konsultan untuk mendukung program perikanan YKAN: Penguatan teknologi dan pengumpulan data untuk proyek NORAD

Procurement Process	:	RFP (Request for Proposal)
Work Location	:	FMA 712, FMA 718, and YKAN Bali office
Deadline for submitting proposal	:	21 June 2024
Development Area	:	Services
Budget (optional)	:	USD 71,658.2

Overview

The Yayasan Konservasi Alam Nusantara (YKAN) is currently in the planning stages of developing and implementing a private sector-oriented collaborative fisheries conservation program in Indonesia. The program will leverage innovative management approaches, particularly through the establishment of public-private partnerships, to facilitate the conservation of fisheries and ecosystems. It is also designed to support the Indonesian government in creating effective data-poor stock assessment methodologies by engaging the private sector in data collection. The incorporation of communication technology, notably the prevalent internet connectivity in Indonesia, is expected to significantly enhance traceability and data collection in a cost-effective manner.

To ensure the successful deployment of this program, YKAN is seeking individuals with the following expertise:

- Senior fisheries expert
- Senior fisheries technician
- Two (2) field technicians
- Fisheries database developer

These are the following deliverables for these services:

- Number and list of participating vessels per year in the YKAN CODRS program, assuming that each vessel participates for at least a full year.
- Technical reports with findings on exploitation status of snapper and tuna fisheries in Indonesia Fishery Management Areas (712 and 718), including # of online workshops completed (include workshops for drafting technical reports)
- Online dashboard (I-FISH) is updated based on the fishery data, with statistics on fishery and stock health to strengthen the governments e-logbook system

I. Background

Indonesia's marine capture fisheries are facing significant challenges attributed to destructive fishing practices. This situation arises from the "tragedy of the commons" phenomenon, wherein fishermen, lacking incentives for sustainable use, compete for the diminishing fish resources within open-access fishing grounds. Notably, both small-scale and industrial fishers have depleted several valuable fish stocks in Indonesia, including groupers and Southern bluefin tuna. The heightened competition for remaining fish has resulted in increased operational costs and extended transport routes to reach non-depleted fishing grounds, consequently elevating costs for consumers and diminishing product quality. Although rationalizing fishing fleets would benefit various stakeholders, the current scenario is exacerbated by fuel subsidies, misallocated development assistance, and governance shortcomings.

Amid this challenging landscape, there exist successful cases of sustainable fisheries and fishing communities. These successes are often realized through the active involvement of fishermen and fishing companies in governance. Strategies for incorporating the fishing sector range from cooperative management with the government to rights-based management, wherein the private sector assumes responsibility as a steward of the resource. Co-management and rights-based management present opportunities for enhancing fisheries management in Indonesia.

Given the urgency of the situation, it is imperative for the private sector to take proactive measures to prevent irreversible depletion of fish stocks. This presents an opportune moment for fishing companies, particularly those serving export markets, to assume a more prominent role in fisheries management in collaboration with government agencies. Furthermore, decentralization offers additional prospects for fishing companies to engage in partnerships with local governments.

It is noteworthy that collaborative and rights-based management serves to strengthen incentives for sustainable fisheries management, utilizing similar management tools as conventional government-driven models. These tools encompass effort control, gear regulations, catch regulations pertaining to species, size, and quantity, as well as area-specific regulations, particularly the establishment of no-take areas. The challenge lies in facilitating the private sector's adept utilization of these management tools, which necessitates their participation in data collection.

Notably, no-take areas (reserves) stand out as one of the most effective tools for rehabilitating fish populations, a practice that self-governing fishing communities have employed for centuries. The successful implementation of reserves hinges on effective enforcement, political will, and a supportive regulatory framework. Although these conditions are not uniformly met in Indonesia, avenues exist to secure private sector backing for reserve networks. For example, exclusive use of fishing grounds can be granted in exchange for adherence to reserve regulations. As a non-governmental, non-profit organization, YKAN is strategically positioned to support government agencies in establishing private sector-backed reserve networks.

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During the assignment of this contract, the consultant(s) may also need to travel to several project locations in FMA 712 and 718, including but not limited to, the following areas: Jakarta, Bali, Probolinggo, Lamongan, Surabaya, Sumbawa, Labuan Bajo, Flores, Ende, Maumere, Larantuka, Kupang, Rote, Sulawesi, Luwuk, Makassar, Galesong, Dobo, Tual, Sorong, Saumlaki, Tanimbar, Ambon, Banda, Raja Ampat, and Alor, Natuna, Tanjung Balai Karimun, Batam, Kepulauan Riau, Bintan, Bangka, Belitung, Padang, Bengkulu, Berau, Sanggata, Bontang, Balikpapan, Pontianak, Tangerang, Sidoarjo, Sumenep, Banyuwangi.

To achieve the objective of the project, the team should conduct the following functions and assignments:

II. GENERAL TASKS

1. STRATEGIC PLANNING AND TECHNICAL CONSULTATION

a. Provide technical support, research, regional knowledge about relevant fisheries, including, in special cases, ground-truthing fish stocks and abundance, data collection, knowledge transfer, analysis, and fisheries and scientific advice to YKAN Indonesia and partners.
b. Provide monthly progress and status reports to YKAN on how the program is progressing, what is working well and what project aspects need improvement.
c. Participate in person at monthly meetings with YKAN Indonesia and private sector or government officials, if needed, to coordinate roles and activities and communicate openly about how the team is functioning and plan effectively for future tasks.
d. Become familiar and fluent with the academic research and new fisheries concepts that YKAN and partners are/have developed - Examples include:

    - **“Data poor” stock assessments** that utilize an extension of the Beverton–Holt Life History Invariance principal to empirically specify size-based indicators of

Spawning Potential Ratio. Become familiar with the "decision tree" process for assessing stock status and setting harvest levels in these data poor situations, as well as the kinds and types of data and measurements that need to be collected by fishermen and the mini plants to inform these assessments and harvest scenarios. Help ensure that the data protocols and systems being utilized at the mini plants are rigorous and appropriate for eventual third-party review and analysis should certification be justified and desirable. And finally, work closely with private sector partners to analyze this fisheries data with the goal to recommend an annual harvest plan and scenario driven by biomass levels, life history knowledge, size structures, spawning seasons/locations, etc.

- **Spatial bio-economic modeling** that can be utilized to design effective systems of coupled MPAs with Territorial User Rights Fisheries (TURFs) or other responsible fishing zones. Become familiar with the models with an aim to co-lead a team to design and plan for a network of MPAs and TURFs in agreed upon places within the project area. Utilize the YKAN Indonesia report – "Scientific Design of a Resilient Network of MPAs for the Lesser SundaEcoregion" – March 2011 – as the guiding document for the design of coupling MPAs with TURFs.

- **Gears and Fishing Methodology**. Work with the team to advise on gear modifications and improvements and fishing techniques that help move the relevant fisheries towards a more sustainable, yet profitable, harvest regime.

- **Controlling harvest through private agreements**. Advise the team on how to craft, use and enforce private agreements with fishermen or groups of fishermen to guide them in targeting and catching the desired species, size and gender in the appropriate locations and seasons. In addition, advise on how to use private agreements as disincentives for fishermen to harvest unintended species and bycatch.

2. TECHNICAL FISHERIES MANAGEMENT SUPPORT

Tasks included in Technical Fisheries Management Support function include, but are not limited to:

1. Provide the YKAN Sustainable Fisheries Program with advice on fisheries management approaches, based on ecological and socio-economic perspectives.
2. Provide the YKAN Sustainable Fisheries Program with advice on data-poor stock assessment, considering status and developments in Indonesia's fisheries management framework.
3. In consultation with the Director of the YKAN Sustainable Fisheries Program, will participate in, and initiate fishing ground / supply line surveys of the YKAN Sustainable Fisheries Program
4. At the request of the Director of the YKAN Sustainable Fisheries Program, will co-facilitate visits of program partners.
5. Will represent the YKAN Sustainable Fisheries Program at meetings as requested by the Director.
6. Assist the Director with trainings (as a resource person), planning and reporting as requested.

III. SPECIFIC TASKS

1. **DATA COLLECTION**
   Tasks included in Data Collection function in FMA 712 and 718 include, but are not limited to:

   a. Providing technical support for programmatic activities of the YKAN Sustainable Fisheries Program
   b. Assist employees of private sector partners with data collection, including data entry at facilities of private sector partners.
   c. Coordinate trainings on data collection, coordinate events (donor visits, exchanges, etc) as tasked by the Director of the YKAN Sustainable Fisheries Program. Provide reports on facts and figures for each event (attendancy, expense reports, etc.).
   d. Sourcing of technical supplies for the YKAN Sustainable Fisheries Program. This may include computer hardware and software, weighing scales, measuring boards, GPS receivers, etc.

2. **ENCOURAGE PRIVATE SECTOR INVOLVEMENT**
   Tasks included in gathering Private Sector Involvement function include, but are not limited to:

   a. Generate site specific data collection protocol.
   b. Organize fish landing observations and monitoring, including but not limited to contacting fish companies to confirm landing date and time, informing the fisheries team on offloading details, and other logistics regarding landing and offloading activities.
   c. Learn fish identification by looking through the reference collection and other means.
   d. Distribute publications created by the program, including ID guides, assessment tool, cheat sheets, posters and other supporting materials and documentation.
   e. Assist in identifying unidentified species using taxonomic keys.
   f. Monitor fish landing and deploy vessel tracking system, including, and not limited to help graders conduct fish identification, help manage data collection during receiving, source materials to support the system such as barcode stickers, help take photographs of fish species, and other activities to ensure the accuracy of data.
   g. Monitor the usage and location of each Spot Trace device that have been deployed.
   h. Scout initial contact persons, local partners, and private sector partners in field sites
   i. Establish, maintain, and heighten relationship with partners in target area. Partners include, but not limited to companies, captains, workers, crew member, fish traders, and others involved in the supply chain of the program’s target fisheries.
   j. Arrange data collection program in project’s field sites. Arranging data collection program includes but not limited to looking for companies to establish

partnership with, creating and arranging cash for data contract, conducting training with graders to be able to collect data to our program's standards.

k. Establish collaboration with other NGOs especially in regard to data collection.
l. Create cheat sheets, including but not limited too, taking fish pictures, compiling key identifiers from taxonomic key.
m. Create supporting documentation for the program, including, but not limited to poster translation, promotional videos.
n. Create output materials on the fishery project, including but not limited to fish ID poster, cheat sheets, animations, videos, etc.
o. Regular and request based translation work, including but not limited to weekly update, fishery related documents, etc.
p. Maintain the project's google drive and update the documents, especially downloadables accordingly.
q. Organize meetings and trainings to villagers in field sites about the fisheries program or anything related to the program. Organize meetings includes identifying important people to invite, arranging food, preparing meeting materials and other logistics to ensure the efficacy of the meeting.
r. Organize meetings and trainings to government officials in field sites about the fisheries program or anything related to the program. Organize meetings includes identifying important people to invite, arranging food, preparing meeting materials and other logistics to ensure the efficacy of the meeting.
s. In case necessary, take part in fishing trip and observe on-board fishing activities.

3. **OPERATE CREW-OPERATED DATA RECORDING SYSTEM (CODRS)**
Tasks included in CODRS include, but are not limited to:

1. On-site research to identify areas with target species vessels and establish relationship with initial contact persons and local partners to identify captains/crews who are interested in involvement of data recording system with YKAN.
2. Initiate recruitment of captains to join CODRS program.
3. Deploy the equipments for CODRS consist of Spot Trace, Camera and measuring board.
4. Support on administration of YKAN contract with captains involved in CODRS program.
5. Conduct training for CODRS participants and regular monitor and evaluation on data collection processes including, but not limited to, maintain close relationship and communications with participants, regular visits and on-site meeting and provide feedback and enqueries on disputed data.
6. Serve as troubleshooter for any problems and conduct maintenance and replacement of equipments whenever its necessary.
7. Collecting data from participants, interpreting the pictures to record species and sizes, and input those data into the database.
8. Validate data and clarify with data sources for any confusion.
9. Maintain and store data collected at YKAN NAS.

4. **SET UP DATABASE PROGRAM**
   Tasks included in Set Up a Database Program function include, but are not limited to:

   1. Develop and maintain a web-based portal for entry of fisheries data, based on I-Fish (Postgresql, PHP, R).
   2. Maintain a cloud server that hosts I-Fish.
   3. Assist project staff with data entry, solve problems.
   4. Conduct trainings on data entry.
   5. Participate in I-Fish user meetings.
   6. Conduct high-level Data verification.
   7. Develop serial Reports by WPP, by fishing gear and guidelines such as Fish Identification and Assesment guideline.

IV. EXPECTED OUTPUT

Within contract period (1 year), consultant is expected to submit the deliverable below:

- Number and list of participating vessels per year in the YKAN CODRS program, assuming that each vessel participates for at least a full year.
- Technical reports with findings on exploitation status of snapper and tuna fisheries in
  Indonesia Fishery Management Areas (712 and 718), including # of online workshops completed (include workshops for drafting technical reports)
- Online dashboard (I-FISH) is created based on the fishery data, with statistics on fishery and stock health to strengthen the governments e-logbook system

V. CONTRACT PERIOD

This consulting activity will be carried out for one effective year, start from **July 1, 2024, to July 30, 2025,** and can be extended according to YKAN's needs. The contract value that will be given to the selected local consultant during the working period in total is **USD 71,658.2.**

VI. CONTACT PERSON

Interested applicant should send proposal to harxylen.purnomo@ykan.or.id with cc to gperdanahardja@ykan.or.id