REQUEST FOR QUOTATION (RFQ)
(Service)

To: All Interested Bidders	DATE: September 24, 2020
	REFERENCE: **RFQ/UNDP/ 114839 /053/2020 – Building Data Science Capacity for Marine and Fisheries Resources Surveillance**

Dear Sir / Madam:

We kindly request you to submit your quotation for **RFQ/UNDP/114839/053/2020 – Building Data Science Capacity for Marine and Fisheries Resources Surveillance**, as detailed in Annex 1 of this RFQ. When preparing your quotation, please be guided by the form attached here to as Annex 2.

Quotations may be submitted on or before October 1, 2020, 1700 hour (GMT+7) and via ⊠*e-mail t*o the address below:

United Nations Development Programme
Menara Thamrin Building, 7th Floor
Jl. M.H. Thamrin, Kav. 3, Jakarta 10250
Attn: Procurement Unit
Email: bids.id@undp.org

Quotations submitted by email must be limited to a maximum of 10 MB per transmission, virus-free and no more than 5 (five) email transmissions. They must be free from any form of virus or corrupted contents, or the quotations shall be rejected.

It shall remain your responsibility to ensure that your quotation will reach the address above on or before the deadline. Quotations that are received by UNDP after the deadline indicated above, for whatever reason, shall not be considered for evaluation. If you are submitting your quotation by email, kindly ensure that they are signed and in the .pdf format, and free from any virus or corrupted files.

Please take note of the following requirements and conditions pertaining to the supply of the abovementioned good/s:

Delivery Terms [INCOTERMS 2010] *(Pls. link this to price schedule)*	☐FCA ☐CPT ☐CIP ☒DAP ☐Other *[pls. specify]*
Customs clearance[1], if needed, shall be done by:	N/A
Exact Address/es of Delivery Location/s (identify all, if multiple)	ATSEA Phase 2 Project - NCU Indonesia Center for Fisheries Research, Ministry of Marine Affairs and Fisheries JL Pasir Putih II RT.11/RW.10, RT.3/RW.10, Ancol, Pademangan, North Jakarta City, Jakarta, 14430
UNDP Preferred Freight Forwarder, if any[2]	N/A
Distribution of shipping documents *(if using freight forwarder)*	N/A
Latest Expected Delivery Date and Time *(if delivery time exceeds this, quote may be rejected by UNDP)*	Please refer to Annex 1
Delivery Schedule	☒Required ☐Not Required
Packing Requirements	N/A

Mode of Transport	☐ AIR	☐LAND
	☐SEA	☒OTHER N/A

Preferred Currency of Quotation[3]	☒United States Dollars ☒Local Currency : IDR For local Bidders
Value Added Tax on Price Quotation[4]	☒ Must be exclusive of VAT and other applicable indirect taxes
After-sales services required	Mentorship support (1 month)

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[1] *Must be linked to INCO Terms chosen.*
[2]*Depends on INCO Terms. The suggestion to use a UNDP preferred courier is only for purposes of familiarity with procedures and documentary requirements applicable to the UNDP when clearing with customs.*
[3] *Local vendors must comply with any applicable laws regarding doing business in other currencies. Conversion of currency into the UNDP preferred currency, if the offer is quoted differently from what is required, shall be based only on UN Operational Exchange Rate prevailing at the time of UNDP's issuance of Purchase Order.*
[4] *This must be reconciled with the INCO Terms required by the RFQ. Furthermore, VAT exemption status varies from one country to another. Pls. tick whatever is applicable to the UNDP CO/BU requiring the goods.*

Deadline for the Submission of Quotation	*Thursday, October 01, 2020 at 1700 hour (GMT+7)*
All documentations, including catalogs, instructions and operating manuals, shall be in this language	☒ English ☒ Others Bahasa Indonesia or any language for any legal document / certificates issued by the local government
Documents to be submitted[5]	☒ Duly Accomplished Form as provided in Annex 2, and in accordance with the list of requirements in Annex 1; ☒ Latest Business Registration Certificate ; ☒ Latest Internal Revenue Certificate / Tax Clearance; ☒ Written Self-Declaration of not being included in the UN Security Council 1267/1989 list, UN Procurement Division List or other UN Ineligibility List; ☒ Others :All requirement as specified in Annex 1 i.e CV of the proposed personnel, providing portfolio (max. 5 pages) and two (positive) reference checks from the previous clients
Period of Validity of Quotes starting the Submission Date	☒ 60 days In exceptional circumstances, UNDP may request the Vendor to extend the validity of the Quotation beyond what has been initially indicated in this RFQ. The Proposal shall then confirm the extension in writing, without any modification whatsoever on the Quotation.
Partial Quotes	☒ Not permitted
Payment Terms[6]	☒ Others Please refer to the payment schedule in Annex 1
Liquidated Damages	N/A
Evaluation Criteria	☒ Technical responsiveness/Full compliance to requirements and lowest price[7] Comprehensiveness of after-sales services ☒ Full acceptance of the Professional Service Contract/Contract General Terms and Conditions Applicable Terms and Conditions are available at: http://www.undp.org/content/undp/en/home/procurement/business/how-we-buy.html
UNDP will award to:	☒ One and only one supplier
Type of Contract to be Signed	☒ Other Type/s of Contract Professional Service Contract

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[5] *First 2 items in this list are mandatory for the supply of imported goods*
[6] *UNDP preference is not to pay advanced amount upon signing of contract. If vendor strictly requires advanced payment, it will be limited only up to 20% of the total price quoted. For any higher percentage, or advanced payment of $30,000 or higher, UNDP shall require the vendor to submit a bank guarantee or bank checque payable to UNDP, in the same amount as the advanced payment made by UNDP to the vendor.*
[7] *UNDP reserves the right not to award the contract to the lowest priced offer, if the second lowest price among the responsive offer is found to be significantly more superior, and the price is higher than the lowest priced compliant offer by not more than 10%, and the budget can sufficiently cover the price difference. The term "more superior" as used in this provision shall refer to offers that have exceeded the pre-determined requirements established in the specifications.*

Conditions for Release of Payment	☒ Written Acceptance of service based on full compliance with RFQ requirements (Annex 1)
Annexes to this RFQ[8]	☒ Terms of Reference (Annex 1) ☒ Form for Submission of Quotation (Annex 2) ☒ General Terms and Conditions / Special Conditions Non-acceptance of the terms of the General Terms and Conditions (GTC) shall be grounds for disqualification from this procurement process.
Contact Person for Inquiries (Written inquiries only)[9]	Sestyo Ndaru Wicaksono / Yusef Saiful M. Procurement Unit Sestyo.wicaksono@undp.org / yusef.millah@undp.org Any delay in UNDP's response shall be not used as a reason for extending the deadline for submission, unless UNDP determines that such an extension is necessary and communicates a new deadline to the Proposers.

Goods offered shall be reviewed based on completeness and compliance of the quotation with the minimum specifications described above and any other annexes providing details of UNDP requirements.

The quotation that complies with all of the specifications, requirements and offers the lowest price, as well as all other evaluation criteria indicated, shall be selected. Any offer that does not meet the requirements shall be rejected.

Any discrepancy between the unit price and the total price (obtained by multiplying the unit price and quantity) shall be re-computed by UNDP. The unit price shall prevail and the total price shall be corrected. If the supplier does not accept the final price based on UNDP's re-computation and correction of errors, its quotation will be rejected.

After UNDP has identified the lowest price offer, UNDP reserves the right to award the contract based only on the prices of the goods in the event that the transportation cost (freight and insurance) is found to be higher than UNDP's own estimated cost if sourced from its own freight forwarder and insurance provider.

At any time during the validity of the quotation, no price variation due to escalation, inflation, fluctuation in exchange rates, or any other market factors shall be accepted by UNDP after it has received the quotation. At the time of award of Contract or Purchase Order, UNDP reserves the right to vary (increase or decrease) the quantity of services and/or goods, by up to a maximum twenty five per cent (25%) of the total offer, without any change in the unit price or other terms and conditions.

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[8] *Where the information is available in the web, a URL for the information may simply be provided.*
[9] *This contact person and address is officially designated by UNDP. If inquiries are sent to other person/s or address/es, even if they are UNDP staff, UNDP shall have no obligation to respond nor can UNDP confirm that the query was received.*

Any Purchase Order that will be issued as a result of this RFQ shall be subject to the General Terms and Conditions attached hereto. The mere act of submission of a quotation implies that the vendor accepts without question the General Terms and Conditions of UNDP herein attached as Annex 3.

UNDP is not bound to accept any quotation, nor award a contract/Purchase Order, nor be responsible for any costs associated with a Supplier's preparation and submission of a quotation, regardless of the outcome or the manner of conducting the selection process.

Please be advised that UNDP's vendor protest procedure is intended to afford an opportunity to appeal for persons or firms not awarded a purchase order or contract in a competitive procurement process. **In the event that** you believe you have not been fairly treated, you can find detailed information about vendor protest procedures in the following link:
http://www.undp.org/content/undp/en/home/operations/procurement/protestandsanctions/

UNDP encourages every prospective Vendor to avoid and prevent conflicts of interest, by disclosing to UNDP if you, or any of your affiliates or personnel, were involved in the preparation of the requirements, design, specifications, cost estimates, and other information used in this RFQ.

UNDP implements a zero tolerance on fraud and other proscribed practices, and is committed to identifying and addressing all such acts and practices against UNDP, as well as third parties involved in UNDP activities. UNDP expects its suppliers to adhere to the UN Supplier Code of Conduct found in this link : http://www.un.org/depts/ptd/pdf/conduct_english.pdf

Thank you and we look forward to receiving your quotation.

Sincerely yours,

Martin Stephanus Kurnia
Procurement Analyst
September 24, 2020

Annex 1

Terms of Reference

Building Data Science Capacity for Marine and Fisheries Resources Surveillance

A. General Information

Title	:	Building Data Science Capacity for Marine and Fisheries Resources Surveillance
Project No		**00100050 – ATSEA Phase 2**
Report to	:	National Project Coordinator ATSEA-2
Location	:	JL Pasir Putih II RT.11/RW.10, RT.3/RW.10, Ancol, Pademangan, North Jakarta City, Jakarta, 14430
Duration of contract	:	The expected duration of the contract is 2 months calculated based on the contract starting date
Location	:	Ministry of Marine Affairs and Fisheries, DKI Jakarta

B. Background

Indonesia has one of the world's highest marine biodiversity levels, and is the world's second-largest fish producer. Despite Indonesia is blessed with rich marine and fishery resources, having the second longest shorelines and the third largest exclusive economic zone (EEZ) in the world, there are a number of challenges such as illegal, unreported and unregulated (IUU) fishing, coordination between coastal and off-shore fishing, appropriate management of fishery yield that need to be addressed.

The President of Indonesia has estimated that 300 trillion rupiah, or US$ 23 billion, is lost annually due to IUU fishing, and in a bold move, allowed the Navy to sink illegal vessels. About 363 illegal fishing boats have been sunk to date. Unfortunately, the Government of Indonesia has stated that the economic damages and impacts of this illegal fishing operation are yet to be determined. The FAO has estimated that the effect of IUU fishing in Indonesia is US$ 10-US$ 23 billion annually, but it has lost more than US$ 80 billion annually because of poor fisheries management.

Indonesia has put IUU fishing as a top priority to be addressed since the Ministry of Marine Affairs and Fisheries (MMAF) was established in 2001. Indonesia also supports the FAO Fisheries Conduct and the FAO International IUU Fishing Plan of Action. MMAF's first move was to allow all fishing vessels with a capacity of more than 30 gross tons (GT) to install Vessel Monitoring System (VMS) transmitters for Indonesian waters to obtain a fishing licence. The second step was to set up law enforcement centers in fishing ports and to deploy patrol vessels within marine protected areas. The third group of actions was to combat illegal fishing in the Economic Exclusive Zone of Indonesia (EEZ), in cooperation with the Indonesian Navy. Indonesia's major challenges in fighting IUU Fishing are its vast region and lack of equipment and instruments.

Today, data science has extensive ramifications in numerous fields, i.e., in theoretical and applied research areas. Data Science influences the growth and improvements of the ogranization by providing a lot of intelligence about the operations, by using methods such as data mining and data analysis. In line with the development of the marine and fisheries resources survailance platform by the Indonesian government, big data management and in-depth analysis are needed to better understand the modus operandi of IUU fishing to improve its eradication strategy in Indonesia. In this case, data scientists are

expected to create statistical, network, path, and big data methodologies for predictive fraud propensity models (e.g. modus operandi of IUU Fishing) and use those to create alerts that help ensure timely responses when unusual data (IUU Fishing) is recognized.

As an effort to build capacity of data scientist in the MMAF organization that will handle big data on marine and fisheries resources survailance platform, **The Arafura and Timor Seas Ecosystem Action (ATSEA) Phase 2 Project** under MMAF and UNDP Indonesia will facilitate in-house training of data science with specific objective including:

- Build capacity of data scientist from MMAF including, but not limited to basic knowledge data science, basic skill data science with Python program, data analysis; spatial and temporal (e.g. statistic, machine learning, and data visualization).
- Build pilot system in analyzing patterns of IUU Fishing and its modus operandi, fisheries resources, and other data related to conservation in Indonesia waters (e.g. one of the case study in FMA 718 as a site project of ATSEA Phase 2).

Ultimately, all participants are expected to be familiar with the data structure in a Python Environment to conduct data cleaning, transformation, and exploratory processes and be able work in statistical environment to develop, evaluate, and describe various forecasting and predictive models both spatially and temporally.

Scope of work

The UNDP is seeking companies to provide in-house training of data science on **October 2020** in Ministry of Marine Affairs and Fisheries Jakarta. The service company is expected to provide:

a. In-house training of data science for 10 participants;
b. Training on basic knowledge data science, basic skill data science with Python program, data analysis; spatial and temporal modelling (e.g. statistic, machine learning, and data visualization);
c. with specific teaching syllabus as follows:
d.

1. PYTHON FOR DATA ANALYST (9 hrs)	2. EXPLORATORY DATA ANALYSIS (12 hrs)
- Python Programming Basic - Setting up Anaconda environment - Working with Jupyter Notebook - Python sintaxes and jargons - Introduction to Dataframes - Reading csv data - Python data types - Data frame structure - Categorical and Numerical variables - Using panda's built-in statistics summary - Indexing and subsetting in pandas	- Frequency table in pandas - Higher dimensional table - Data aggregation - using pivot table - Working with datetime data - Working with categorical data - Dealing with untidy data - Not a Number (NaN) - Checking NaN values - Missing values treatment - Removing duplicated value Exercise: Use a sample of vessel information file dataset to perform exploratory data analysis process. Extracting insights from the

	data in order to understand which area with a high percentage of IUU fishing.

3. **PRACTICAL STATISTICS (6 hours)**
 	
• Descriptive statistics
   o Understanding 5 number summary
   o Central tendency measure
   o Variability measure
   o Z-score and central limit theorem
• Inferential statistics
• Probability Density Function
• Confidence Intervals
• Hypothesis test
• Power Analysis
 	
Exercise: Formulate a question and derive statistical hypothesis test on IUU Fishing case study to make decision using data in a scientific manner.
	4. **REGRESSION MODELS (9 hrs)**
	
	• Linear Model
	   o Leas Square Regression
	   o Simple Linear Regression
	   o Levarage and Influence
	   o Linear model prediction
	• Model Interpretation
	   o Model interpretation - arriving at beta coefficient
	   o R-squared
	   o Confidence Interval
	• Multivariate Regression
	   o Feature Selection
	   o Model Diagnostics
	   o Limitation of Regression Model

5. **CLASSIFICATION FOR MACHINE LEARNING (15 hrs)**
 	
• Logistic Regression
   o Understanding Odds
   o Logistic Regression in Practice
   o Assumption and limitation
• K-nearest Neighbors
   o KNN from scratch
   o Non parametric model
   o Model Evaluation
   o Cross validation
   o Bias variance trade-off
   o Confusion Matrix
• Tree-based Model
   o Decision Tree
   o Application of Decision tree
   o Pre-prunng and Post-pruning
   o Splitting Criteria
   o Interpretation
   o Random Forest
   o Boostrap Aggregation
   o Feature selection
   o k-Fold cross validation
	6. **CAPSTONE PROJECT MACHINE LEARNING (15 hours)**
	
	Pilot project with case study:
	• Spatial and temporal of illegal fishing vulnerability (Data source: Vessel Monitoring System and Automatic Identification System)
	• Spatial and temporal analysis of the destructive fishing vulnerability in Indonesia (Data source: data mining from online platform such media social, news, and etc)
	• Spatial and temporal analysis of fisheries violations in conservation areas (Data source: Automatic Identification System and Visible Infrared Imaging Radiometer Suite)

e. Dataset and exercisebased on MMAF's data or case study; (develop pilot system in analyzing patterns of IUU Fishing and its modus operandi, fisheries resources, and other data related to

conservation in Indonesia waters e.g. one of the case study in Fisheris Management Area (FMA) 718 that covers Arafura Seas as a site project of ATSEA Phase 2;

List of case study:
- Spatial and temporal of illegal fishing vulnerability (Data source: Vessel Monitoring System and Automatic Identification System)
- Spatial and temporal analysis of the destructive fishing vulnerability in Indonesia (Data source: data mining from online platform such media social, news, and etc)
- Spatial and temporal analysis of fisheries violations in conservation areas (Data source: Automatic Identification System and Visible Infrared Imaging Radiometer Suite)

f. Print-out of handbook and course material for 10 training participants and 2 back up for UNDP;
g. Certificate of course completion for each participant;
h. One-month post training support to guidance participant for developing data analysis models based on the training material;
i. Provide progress card to track the capacity improvement for the all participant
j. Two coffee break and lunch per meeting class. The meeting venue will be provide by NCU ATSEA-2 in the Ministry of Marine and Fisheries Agency facilities.
k. Training with physical meeting require COVID 19 protocol

Qualification of Selected Provider

The UNDP is seeking an company, which can demonstrate:
- Experience in at least providing data science course with specific training topic that mentioned in point b above;
- Has a good track record in providing data science course by providing portfolio (max. 5 pages) and two (positive) reference checks from the previous clients;
- Valid license/certificate to provide the required service

Personel qualification
- Lead-Instructor
    1. Bachelor degree in Math,statistic, computer science or other relevant field.
    2. 3 years' experiences in teaching data science.
    3. Experience in providing data science course with specific training topic related to Python program, data analysis, spatial and temporal modelling

- **Teaching Assistant**
    1. Bachelor degree in Math,statistic, computer science or other relevant field
    2. 2 years' experiences in teaching data science.
    3. Experience in supporting data science course with specific training topic related to Python program, data analysis, spatial and temporal modelling

GENERAL OUTCOMES

Selected provider are expected to submit the followings:
- Teaching material (e.g. module, dataset, and exercise) based on MMAF's data case study:
- Final report of data science course, including training documentation, pre-post of knowldage evaluation from each participant, print-out of handbook and course material, and certificate of

course completion for each participant;
- Developing Question and Answer (QnA) report of one-month post training support to the paticipant .

Payment Schedule
The contract will be on lumpsum basis with payment schedule as follow:

Deliverables	Payment Termin	Due Dates
1st Payment will be made upon the submission and approval of following outputs: • Dataset and exercise based on MMAF's data or case study; (develop pilot system in analyzing patterns of IUU Fishing and its modus operandi, fisheries resources, and other data related to conservation in Indonesia waters e.g. one of the case study in Fisheris Management Area (FMA) 718 that covers Arafura Seas as a site project of ATSEA Phase 2; List of case study: • Spatial and temporal of illegal fishing vulnerability (Data source: Vessel Monitoring System and Automatic Identification System) • Spatial and temporal analysis of the destructive fishing vulnerability in Indonesia (Data source: data mining from online platform such media social, news, and etc) • Spatial and temporal analysis of fisheries violations in conservation areas (Data source: Automatic Identification System and Visible Infrared Imaging Radiometer Suite)	30%	4th Weeks of October 2020
2nd Payment will be made upon the submission and approval of following outputs: • Final report of data science course, including training documentation, pra-post of knowldage evaluation from each participant, print-out of handbook and course material, and certificate of course completion for each participant	60%	3rd November 2020
3rd Payment will be made upon the submission and approval of following outputs: • Report of one-month post training support • Provide progress card to track the capacity improvement for the all participant	10%	3rd December 2020

Annex 2

FORM FOR SUBMITTING SUPPLIER'S QUOTATION[10]
(This Form must be submitted only using the Supplier's Official Letterhead/Stationery[11])

We, the undersigned, hereby accept in full the UNDP General Terms and Conditions, and hereby offer to supply the items listed below in conformity with the specification and requirements of UNDP as per RFQ Reference No. _____:

TABLE 1 : Offer to Supply Goods Compliant with Technical Specifications and Requirements

Item No.	Description/Specification of Goods	Quantity	Latest Delivery Date	Unit Price (IDR)	Total Price per Item (IDR)
1	Lead-Instructor Specific requirement • Bachelor degree in Math,statistic, computer science or other relevant field. • 3 years' experiences in teaching data science. • Experience in providing data science course with specific training topic related to Python program, data analysis, spatial and temporal modelling	1 person			
2	Teaching Assistant Specific requirement • Bachelor degree in Math,statistic, computer science or other relevant field. • 2 years' experiences in teaching data science. • Experience in support data science course with specific training topic related to Python	2 persons			

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[10] *This serves as a guide to the Supplier in preparing the quotation and price schedule.*
[11] *Official Letterhead/Stationery must indicate contact details – addresses, email, phone and fax numbers – for verification purposes*

	program, data analysis, spatial and temporal modelling				
3	In-house training for data science Training on basic knowledge data science, basic skill data science with Python program, data analysis; spatial and temporal (e.g. statistic, machine learning, and data visualization); such as • Python for Data Analyst • Exploratory Data Analysis • Practical Statistics • Regression Models • Classification for Machine Learning • Capstone Project Machine Learning	10 participant			
4	Module on Science Fundamentals Data Analytics and Machine Learning in Python , with data or case study from MMAF	1 package			
5	Print-out of handbook and course material	10 exemplar			
6	One-month post training support	1 month			
7	Two coffee break and lunch per meeting	15 package for 11 days)			
	Total Prices				
	Add : Other Charges (pls. specify)				
	Total Final and All-Inclusive Price Quotation				

TABLE 3 : Offer to Comply with Other Conditions and Related Requirements

Other Information pertaining to our Quotation are as follows :	Your Responses		
	Yes, we will comply	*No, we cannot comply*	*If you cannot comply, pls. indicate counter proposal*
Delivery Lead Time October 2020			
Validity of Quotation for 60 days			
All Provisions of the UNDP General Terms and Conditions (Applicable Terms and Conditions are available at: http://www.undp.org/content/undp/en/home/procurement/business/how-we-buy.html)			
Latest Business Registration Certificate ;			

Latest Internal Revenue Certificate / Tax Clearance;			
Written Self-Declaration of not being included in the UN Security Council 1267/1989 list, UN Procurement Division List or other UN Ineligibility List;			
Experience in at least providing data science course with specific training topic that mentioned in point Annex 1, scope of work, point b;			
Has a good track record in providing data science course by providing portfolio (max. 5 pages) and two (positive) reference checks from the previous clients;			
CV lead-instructor and teaching assistant, with proved requirement that mentioned above.			
Valid license/certificate to provide the required service			
Comply to the requirement stated in Annex 1			

All other information that we have not provided automatically implies our full compliance with the requirements, terms and conditions of the RFQ.