

Terms of reference (ToR) for the procurement of services below the EU threshold

[CONFIDENTIALITY]

Service contract for Inventory of Peat Ecosystem Characteristics in the 2 KHG (Peat Hydrological Unit) of 1. Sungai Buluh Besar and 2. Sungai Buluh Besar – Sungai Seruyan (Scale 1:50,000) in Central Kalimantan Province, Indonesia (Package 1)	Project number/ cost centre: 22.2140.6-001.00
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0. List of abbreviations

AVB	General Terms and Conditions of Contract for supplying services and work
GCP	Ground Control Point
GIS	Geographic Information System
MoE	Ministry of Environment
PHU	Peat Hydrological Unit
RT/RW	Rukun Tetangga (Neighborhood) / Rukun Warga (Community Unit)
ToRs	Terms of reference

1. Context

The peatlands of Indonesia extend over about 134,000 square kilometres and are largely spread over the three islands of Sumatra, Kalimantan and Papua. The peatlands in Kalimantan cover about 45,400 sq. km or 33.8% of Indonesia's peatlands, with the majority located in Central Kalimantan. Indonesia has one of the largest shares of terrestrial carbon storage, with about 57.4 gigatons or about 65% of tropical peatland carbon (Centre for International Forest Research, CIFOR, 2023). In order to implement the 2030 Agenda, Indonesia has committed itself in its FOLU Net Sink 2030 Policy to reduce greenhouse gas emissions from forest use and other forms of land use (e.g. peatland conversion) by 60%.

The peatlands and mangrove stands are unique ecosystems that provide numerous ecosystem services. They are able to ensure water regulation, climate regulation, biomass production and biodiversity habitat at the same time. In Kalimantan, more than 37 endemic bird species and 44 endemic mammal species occur in the bog areas. In addition, peatlands make an important contribution to the water cycle due to their high porosity and serve as water reservoirs. Under saturated conditions, peatlands can store up to 850% of their volume in water, proving their ability to mitigate floods.

Kalimantan's peatlands are threatened by drainage for conversion to palm oil and pulpwood plantations, fires, and illegal logging and mining, resulting in emissions, carbon losses, subsidence, and biodiversity loss. Together with the over-exploitation of neighbouring mangrove forests for shrimp and fish farming, the dramatic environmental changes are leading to degraded ecosystems. In addition to the ecological and economic damage, the population in the region suffers from serious health problems caused by numerous peatland fires and the associated persistent smoke and haze pollution. Peatland fires are among the largest CO₂ emitters in Indonesia.

Indonesia is addressing these problems with a variety of different measures. In addition to the fight against corruption and an emerging sensitivity to gender issues, various successive peatland ordinances provide that peatlands with a thickness of 3 m or more are protected, while peatlands with a thickness of less than 3 m can be used for agricultural cultivation. The regulations also stipulate that the groundwater level of peatland areas must be kept at a depth of no more than 40 cm to prevent fires. In order to counteract the devastating consequences of the destruction of peatland ecosystems, integrated land use planning and land use policies at national, provincial and district levels are also needed.

In order for peatlands to be protected, the affected areas must be inventoried and mapped. In addition, their protection must be submitted for ministerial approval. To this end, there is a lack of capacity to plan and implement effective concepts and approaches for the management and restoration of peatlands at village, district and PHU level. Furthermore, there is a lack of specialist and process knowledge on evidence-based, participatory and integrated development for the preservation of peatlands. This can be changed within the framework of the planned module.

The result of the peatland characteristics inventory and maps serve as the main input to the protection and management of peatland ecosystems (RPPEG) for providing the necessary information for the implementation of the measures through the sectoral development plans at provincial, district and village level.

The Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH is an international cooperation enterprise for sustainable development with worldwide operations on behalf of the German Government. The Restoration and Management of Peatlands

Project is part of Forest and Climate Protection in Indonesia program, on behalf of the German Federal Ministry for Economic Cooperation and Development (BMZ). The objective of the project is to Improve the sustainable land use of peatland ecosystems in Kalimantan.

The project is contracting a service provider to support activities for achieving project's indicator related to peatland ecosystem characteristics inventory, based on Minister of Environment and Forestry Regulation P.14/Menlhk/Setjen/Kum.1/2/2017 regarding the Procedures for Inventory and Determination of Peat Ecosystem Functions and Regulation of the Director General of Pollution and Environmental Damage Control Number: P.1/PPKL/PKL/PKG/PKL.0/1/2019 regarding the Implementation Guidelines for the Regulation of the Minister of Environment and Forestry Number P.14/Menlhk/Setjen/Kum.1/2/2017 Concerning Procedures for the Inventory and Determination of Peat Ecosystem Functions.

The peatland characteristics inventory is planned to be carried out for one PHU (KHG / Kesatuan Hidrologis Gambut / Peat Hydrological Unit): **1. KHG Sungai Buluh Besar and 2) Sungai Buluh Besar - Sungai Seruyan with scale 1:50,000 in Central Kalimantan Province, Indonesia.**

No	Peat Hydrological Unit	Area (Ha)	Number of observation points	Number of Laboratory Test Sample Points
1	KHG Sungai Buluh Besar (Kotawaringin Barat and Seruyan District)	134.783	1.572	157
2	KHG Sungai Buluh Besar – Sungai Seruyan ((Kotawaringin Barat and Seruyan District)	342.852	4001	400
Total		477.634	5.573	557

The inventory activity for Peat Ecosystem characteristics is conducted through field verification at designated Peat Hydrological Unit (PHU) locations. This process results in a database of Peat Ecosystem characteristics, which serves as the basis for developing a peat ecosystem characteristics map and a peat ecosystem functions map, comprising conservation functions and cultivation functions.

2. Tasks to be performed by the contractor

The contractor is responsible for providing the following services:

1. The contractor is responsible for selecting, preparing, training and steering the experts and personnels assigned to perform the advisory tasks.
2. The contractor provides equipment and material supplies, see annex 1 for equipment and materials specifications.
3. The contractor manages costs and expenditures, accounting processes and invoicing in line with the requirements of GIZ.
4. The contractor reports regularly to GIZ in accordance with the current AVB of the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH.
5. Preparation phase:
 - a. Consult MoE and GIZ in preparation for the implementation of the peat ecosystem characteristics inventory activities.
 - b. Compile secondary data related to the PHUs.
 - c. Prepare work / field maps for survey.

- d. Submit preliminary report.
- e. Final planning meeting with MoE and GIZ.
- f. Conduct a briefing / training program on peat ecosystem inventory, covering inventory procedures, standard equipment used, and reporting standards required for surveyors who are part of the team.
6. Implementation phase:
 - a. Conduct and host coordination meeting / workshop with local governance (focused group discussion with Province and District governments)
 - b. Conduct field survey. The service provider shall have a digital survey and inventory system (online system) that allows for periodic weekly reporting.
 - c. Compilation of field survey data and laboratory analysis according to the guideline.
 - d. Providing secure cloud storage as an online data repository with a capacity of more than 100 GB to store all designated data and documents. The secure cloud storage will be used to monitor the progress and success of the work carried out. The service provider shall grant access to the cloud storage containing the uploaded data for up to one year after the completion of the project.
 - e. Appoint personnel responsible for providing information regarding challenges, progress achievements, and plans for accelerating the implementation of fieldwork, including the final activity report.
7. Reporting phase:
 - a. Prepare and consult the final report with MoE and GIZ
 - b. Finalization of final report and printing of PHUs survey's observation points with scale of 1:50,000.
8. Provide following deliverables:
 - a. Result of field survey
 1. Distribution map of sample points (survey results at a 1:50,000 scale)
 2. Listing of observation point coordinates.
 3. GPS tracking log of survey routes.
 4. Tally sheet of field data and information.
 5. Documentation (photos and videos at each sampling point, organized in folders per sample point in HD format with geotagging)
 6. Updated canal/drainage network map for 2024 (OpenStreetMap/OSM) based on field survey results.
 7. Conflict risk map (if potential conflicts exist in the survey area)
 8. Burned area verification map for the 2015–2024 period (based on field tally sheets and interviews with local communities)
 9. Administrative boundary map of districts/villages (if there are updates)
 10. Socioeconomic conditions of local communities (based on village/district statistical data)
 - b. Database Output (saved on external hard disk).
 1. Database of peat ecosystem characteristics in PHU, compiled through inventory and field surveys (13 parameters), in shapefile and Excel table formats
 2. Laboratory test results for moisture content and porosity parameters (2 parameters) in accordance with Minister of Environment and Forestry Regulation No. 10 of 2019.
 3. All secondary data
 - c. Report (hardcopy and softcopy).
 1. Preliminary report
 2. Interim report
 3. Laboratory analysis data
 4. Final report
 5. Executive summary

6. Presentation materials, prepared based on the final report (concise and informative)

Certain milestones, as laid out in the table below, are to be achieved during the contract term:

Milestones/process steps/partial services	Deadline/place/person responsible	Criteria for acceptance	Schedule of payment
Output 1 <ul style="list-style-type: none"> • Workplan finalized. • Consultation meeting with MoE and GI is carried out. • Briefing / training program on peat ecosystem inventory, covering inventory procedures, standard equipment used, and reporting standards required for surveyors who are part of the team conducted • Secondary data related to the PHUs are compiled. • Field maps for survey are ready. • Equipment and materials are ready. • Final preparation meeting with MoE and GIZ conducted. 	1 week after contract start. (14.08.2025)	Preliminary Report (Report 1): <ul style="list-style-type: none"> • Workplan, secondary data, field maps, list of personnel. • Documentation of briefing / training program for personnel. • Proof of equipment and materials availability. • Documentation of preparation meeting with MoE and GIZ. 	40% after preliminary report 1 is accepted.
Output 2 <ul style="list-style-type: none"> • Coordination meetings / workshops with local governance (focused group discussions with Province and District governments prior to field survey are implemented. • 75% of the inventory / observation points have already been surveyed in the field. 	6 weeks after contract start. (18.09.2025)	Interim Report (Report 2): <ul style="list-style-type: none"> • The database draft based on 75% of the assessed points for peat characteristics is ready. • GPS tracking log of survey routes of 75% surveyed observation points is available. • Tally sheet of field data and information from the 75% surveyed observation points is available. • Documentation (photos and videos at each sampling point, organized in folders per sample point in HD format with geotagging) from the 75% of the surveyed observation points is available. 	30% after report 2 is accepted.

<p>Output 3</p> <ul style="list-style-type: none"> • All observation points have been surveyed. • All field survey results verified by MoE and GIZ. • Laboratory test results for moisture content and porosity parameters (2 parameters) in accordance with Minister of Environment and Forestry Regulation No. 10 of 2019 are available. 	<p>15 weeks after contract start. (20.11.2025)</p>	<p>Final Report (Report 3):</p> <ol style="list-style-type: none"> 1. Result of field survey <ul style="list-style-type: none"> • Distribution map of sample points (survey results at a 1:50,000 scale) • Listing of observation point coordinates. • GPS tracking log of survey routes. • Tally sheet of field data and information. • Documentation (photos and videos at each sampling point, organized in folders per sample point in HD format with geotagging) • Updated canal/drainage network map for 2024 (OpenStreetMap/OSM) based on field survey results. • Conflict risk map (if potential conflicts exist in the survey area) • Burned area verification map for the 2015–2024 period (based on field tally sheets and interviews with local communities) • Administrative boundary map of districts/villages (if there are updates) • Socioeconomic conditions of local communities (based on village/district statistical data) • Account for secure cloud storage submitted to MoE and GIZ and all digital data uploaded. 2. Final database Output (saved on external hard disk). <ul style="list-style-type: none"> • Database of peat ecosystem characteristics in PHU, compiled through inventory and field surveys (13 parameters), in shapefile and Excel table formats 	<p>30% after final report is accepted.</p>
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		<ul style="list-style-type: none"> • Laboratory test results for moisture content and porosity parameters (2 parameters) in accordance with Minister of Environment and Forestry Regulation No. 10 of 2019 • All secondary data <p>3. Report (hardcopy and softcopy).</p> <ul style="list-style-type: none"> • Preliminary report • Laboratory analysis data • Final report • Executive summary • Presentation materials, prepared based on the final report (concise and informative) 	
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Period of assignment: from 7 August 2025 until 7 April 2026.

3. Concept

In the tender, the tenderer is required to show *how* the objectives defined in Chapter 1 (Tasks to be performed) are to be achieved, if applicable under consideration of further method-related requirements (technical-methodological concept). In addition, the tenderer must describe the project management system for service provision.

Note: The numbers in parentheses correspond to the lines of the technical assessment grid.

Technical-methodological concept

Strategy (1.1): The tenderer is required to consider the tasks to be performed with reference to the objectives of the services put out to tender (see Chapter 1 Context) (1.1.1). Following this, the tenderer presents and justifies the explicit strategy with which it intends to provide the services for which it is responsible (see Chapter 2 Tasks to be performed) (1.1.2).

The tenderer is required to present the actors relevant for the services for which it is responsible and describe the **cooperation (1.2)** with them.

The tenderer is required to present and explain its approach to **steering (1.3)** the measures with the project partners.

The tenderer is required to describe the key **processes** for the services for which it is responsible and create an **operational plan** or schedule (1.4.1) that describes how the services according to Chapter 2 (Tasks to be performed by the contractor) are to be provided. In particular, the tenderer is required to describe the necessary work steps and, if applicable, take account of the milestones and **contributions** of other actors (partner contributions) in accordance with Chapter 2 (Tasks to be performed) (1.4.2).

Project management of the contractor (1.6)

The tenderer is required to explain its approach for coordination with the GIZ project. In particular, the project management requirements specified in Chapter 2 (Tasks to be performed by the contractor) must be explained in detail.

The tenderer is required to draw up a **personnel assignment plan** with explanatory notes that lists all the experts proposed in the tender; the plan includes information on assignment dates (duration and expert days) and locations of the individual members of the team complete with the allocation of work steps as set out in the schedule.

Further requirements (1.7)

-not applicable-

4. Personnel concept

The tenderer is required to provide personnel who are suited to filling the positions described, on the basis of their CVs (see Chapter 7), the range of tasks involved and the required qualifications.

The below specified qualifications represent the requirements to reach the maximum number of points in the technical assessment.

Team leader (1 Person)

Tasks of the team leader

- Responsible for leading the team in managing, coordinating, and supervising the implementation team.
- Act as the team leader in coordinating, discussing, assisting, presenting, and reporting activities.
- Develop schedules and monitor work progress.
- Coordinate team members in preparing concepts and planning methods, drafting reports, and organizing and conducting discussions/presentations.
- Overall responsibility for the advisory packages of the contractor (quality and deadlines)
- Coordinating and ensuring communication with GIZ, partners and others involved in the project.

Qualifications of the team leader

- Education/training (2.1.1): Master degree in Soil Science/ Agrotechnology/Land Resource Management/Agricultural Technology/Agriculture/Forestry/Geodesy/Geography/Geology
- Language (2.1.2): C2-level language proficiency in Bahasa Indonesia and B2-level in English.
- General professional experience (2.1.3): 7 years of professional experience in the land evaluation survey sector.
- Specific professional experience (2.1.4): 3 years in peatland ecosystem characteristics inventory.
- Leadership/management experience (2.1.5): 3 years of management/leadership experience as project team leader or manager in a company.
- Regional experience (2.1.6): 3 years of experience in related projects in Kalimantan, Indonesia.

Field Coordinator (2 Persons)

Tasks of the field coordinator

- Oversee the execution and outcomes of the field survey.
- Lead the team in managing, coordinating, and supervising the field survey team.
- Develop schedules and monitor work progress.
- Act as a field coordinator in conducting coordination, discussions, assistance, presentations, and reporting of field activities.
- Liaise with local government authorities, sub-districts, villages, community leaders (RW/RT), and residents to facilitate the survey team's work in the field.
- Collect and input field data.
- Conduct socio-economic surveys.
- Validate field data from the inventory of peat ecosystem characteristics conducted by the survey team.

Qualifications of the field coordinator

- Education/training (2.2.1): Bachelor degree in Soil Science/Agrotechnology/Land Resource Management/Agricultural Technology/Agriculture/Forestry/Geodesy/Geography/Geology.
- Language (2.2.2): C2 -level language proficiency in Bahasa Indonesia and B1-level in English.
- General professional experience (2.2.3): 3 years of professional experience in the land suitability survey.
- Specific professional experience (2.2.4): 2 years of professional experience in peat characteristics inventory survey.
- Leadership/management experience (2.2.5): 2 years of professional experience in coordinating field survey.
- Regional experience (2.2.6): 2 years of experience in projects in Indonesia.

GIS Operator (2 Persons)

Tasks of the GIS Operator

- Conducting field data entry.
- Assisting in integrating sample point positions and field tracking data into the base map.

Qualifications of the GIS Operator

- Education/Training (2.3.1): Bachelor or associate degree in Agriculture, Agricultural Technology, Forestry, Geodesy, Geography, Geology.
- Language (2.3.2): C2 -level language proficiency in Bahasa Indonesia and A2-level in English.
- General professional experience (2.3.3): 3 years of experience as general GIS Operator
- Specific professional experience (2.3.4): 1 years of experience in processing field survey data.

Administrative Officer (1 Persons)

Tasks of the Administrative Officer

- Carrying out correspondence, documentation, and archiving activities.
- Managing financial administration and financial report.
- Preparing administrative documents for financial accountability.

Qualifications of the Administrative Officer

- Education/Training (2.4.1): Associate degree (D3 in Indonesia) Secretary, Management, Accounting, Finance, Economics
- Language (2.4.2): C2 -level language proficiency in Bahasa Indonesia and A2-level in English.
- General professional experience (2.4.3): 1 year of professional experience in project administration
- Specific professional experience (2.4.4): 1 year of professional experience in project finance administration

Soft skills of team members

In addition to their specialist qualifications, the following qualifications are required of team members:

- Team skills
- Initiative
- Communication skills
- Socio-cultural skills
- Efficient, partner- and client-focused working methods
- Interdisciplinary thinking

Short-term expert pool (Surveyor) with 35 members

For the technical assessment, an average of the qualifications of all specified members of the expert pool is calculated. Please send a CV for each pool member (see below Chapter 7 Requirements on the format of the bid) for the assessment.

Tasks of the short-term expert pool (surveyor)

- Responsible for the implementation and outcomes of field surveys.
- Conducting data entry in the field.
- Evaluating field survey data.

Qualifications of the short-term expert pool (surveyor)

- Education/Training (2.6.1): Bachelor in Soil Science, Agrotechnology, Resource Management, Agriculture, Agricultural Technology, Forestry, Geodesy, Geography, Land Geology.

- Language (2.6.2): C2 -level language proficiency in Bahasa Indonesia and A2-level in English.
- General professional experience (2.6.3): 2 years of experience as a land suitability surveyor.
- Specific professional experience (2.6.4): 1 year of experience as peat characteristics inventory surveyor
- Regional experience (2.6.5): 2 years of experience in projects in Indonesia
- Other (2.6.7) At least 50% of all surveyors must have an educational background in Soil Science, Agrotechnology, or Land Resource Management.

The tenderer must provide a clear overview of all proposed short-term experts and their individual qualifications.

5. Costing requirements

Assignment of personnel and travel expenses

Per-diem and overnight accommodation allowances are reimbursed as a lump sum based on the places of performance stipulated in Chapter 2 and list the expenses.

Accommodation allowances are reimbursed as detailed in the specification of inputs below.

With special justification, additional Accommodation costs up to a reasonable amount can be reimbursed against evidence.

All business travel must be agreed in advance by the officer responsible for the project.

Sustainability aspects for travel

GIZ has undertaken an obligation to reduce greenhouse gas emissions (CO₂ emissions) caused by travel. When preparing your tender, please incorporate options for reducing emissions, such as selecting the lowest-emission booking class (economy) and using means of transport, airlines and flight routes with a higher CO₂ efficiency. For short distances, travel by train (second class) or e-mobility should be the preferred option.

CO₂ emissions caused by air travel must be offset. GIZ specifies a budget for this, through which the carbon offsets can be settled against evidence.

Specification of inputs

Fee month/days	Number of experts	Number of month/days per expert	Total	Comments
Designation of Team Leader	1	2 months	1 x 2 months	Monthly basis, lump sum
Designation of Field Coordinator	2	2 months	2 x 2 months	Monthly basis, lump sum

Designation of Surveyors	35	40 days	35 x 40 days	Daily basis, lump sum
Designation of GIS Operator	2	2 months	2 x 2 months	Monthly basis, lump sum
Designation of Administrative Officer	1	2 months	1 x 2 months	Monthly basis, lump sum
Travel expenses	Quantity	Number per expert	Total	Comments
Per-diem allowance in country of assignment (Province Capital)	1 Team Leader 2 Field Coordinators 35 Surveyors 2 GIS Operators	2 days	2 days x 40 persons	Lump sum
Per-diem allowance in country of assignment (on site / field)	1 Team Leader 2 Field Coordinators 35 Surveyors 2 GIS Operators	38 days	38 days x 40 persons	Lump sum
Overnight allowance in country of assignment (Province Capital)	1 Team Leader 2 Field Coordinators 35 Surveyors 2 GIS Operators	2 nights	2 nights x 40 persons	Lump sum
Overnight allowance in country of assignment (on site / field)	1 Team Leader 2 Field Coordinators 35 Surveyors 2 GIS Operators	37 nights	37 nights x 40 persons	Lump sum
Transport	Quantity	Number per expert	Total	Comments
Domestic flights	1 Team Leader 2 Field Coordinators 35 Surveyors 2 GIS Operators	1 return trip	1 return trip x 40 persons	Lump sum

CO₂ compensation for air travel	40 persons	1 return trip	40 persons return trip	A fixed budget of IDR 18.625.901 is earmarked for settling carbon offsets against evidence.
Travel expenses <ul style="list-style-type: none"> Car rental Motorcycle rental in the field / PHU location Boat rental in the field / PHUs location 	13 units 60 units 30 units	1 return trip 38 days 2 days	13 units x 1 return trip 60 units x 38 days 30 units x 2 days	Lump sum
Other costs	Number of items	Price	Total	Comments
Flexible remuneration	1	IDR 110,000,000	Up to IDR 110,000,000	Subject to approval and against evidence.
Workshop	1	IDR 43,319,000	Up to IDR 43,319,000	Lump sum against proof of performance. Prior to conducting the field survey, a meeting is held with the provincial and districts governments where the PHU is located. This meeting is conducted in the form of a focus group discussion (FGD) involving all relevant stakeholders, including representatives from licensed companies and local communities within the surveyed PHUs area.
Local support labours	1 package	IDR 512,000,000	Up to IDR 512,000,000	Lump sum

Laboratory fees for samples testing including samples delivery costs	1 package	IDR 110,418000	Up to IDR 110,418,000	Lump sum
Procurement and rental of materials, supplies and equipment	1 package	IDR 918,786,000	Up to IDR 918.786.000	Lump sum For the list of materials, equipment, specifications and quantities, see Annex 1.

Workshops, events and trainings

The contractor implements the following workshops/study trips/training courses:

- Meeting / workshop with the provincial and districts governments where the PHU is located. This meeting is conducted in the form of a focus group discussion (FGD) involving all relevant stakeholders, including representatives from licensed companies and local communities within the surveyed PHU area.

The budget provided by GIZ for implementing these workshops and trainings amounts up to IDR 43,319,000 (Lump sum against proof of performance).

Flexible remuneration item

Up to IDR 110,000,000,- for budgetary implications or other contingencies. Based on a written request with justification and to be authorized by GIZ (not to be budgeted with).

6. Inputs of GIZ or other actors

GIZ and/or other actors are expected to make the following available:

- A supervisor who will coordinate and supervise the activities (from GIZ and MoE).
- Information letter of the activities from MoE to local government.
- Meetings for activities preparation and verification of results with MoE held by GIZ.

7. Requirements on the format of the tender

The structure of the tender must correspond to the structure of the ToR. In particular, the detailed structure of the concept (Chapter 3) should be organised in accordance with the positively weighted criteria in the assessment grid (not with zero). The tender must be legible (font size 11 or larger) and clearly formulated. It must be drawn up in English (language).

The complete tender must not exceed 20 pages (excluding CVs and other attachments). If one of the maximum page lengths is exceeded, the content appearing after the cut-off point will not be included in the assessment. External content (e.g. links to websites) will also not be considered.

The CVs of the personnel proposed in accordance with Chapter 4 of the ToRs must be submitted using the format specified in the terms and conditions for application. The CVs shall not exceed 4 pages each. They must clearly show the position and job the proposed person held in the reference project and for how long. The CVs can also be submitted in English (language).

Please calculate your financial tender based exactly on the parameters specified in Chapter 5 Quantitative requirements. The contractor is not contractually entitled to use up the days, trips, workshops or budgets in full. The number of days, trips and workshops and the budgets will be contractually agreed as maximum limits. The specifications for pricing are defined in the price schedule.

8. Option

- Not applicable -

9. Outsourced processing of personal data

- Not applicable -

10. Annexes

1. List of equipment's and materials to be provided and their specification.
2. Schedule Gannt Chart.
3. Peat Ecosystem Characteristics Inventory Plan Map in KHG Sungai Buluh Besar and Sungai Buluh Besar - Sungai Seruyan with scale 1:50,000 in Central Kalimantan Province, Indonesia.
4. Tally sheet (in Bahasa Indonesia).

Annex 1: List of equipment's and materials specifications to be provided

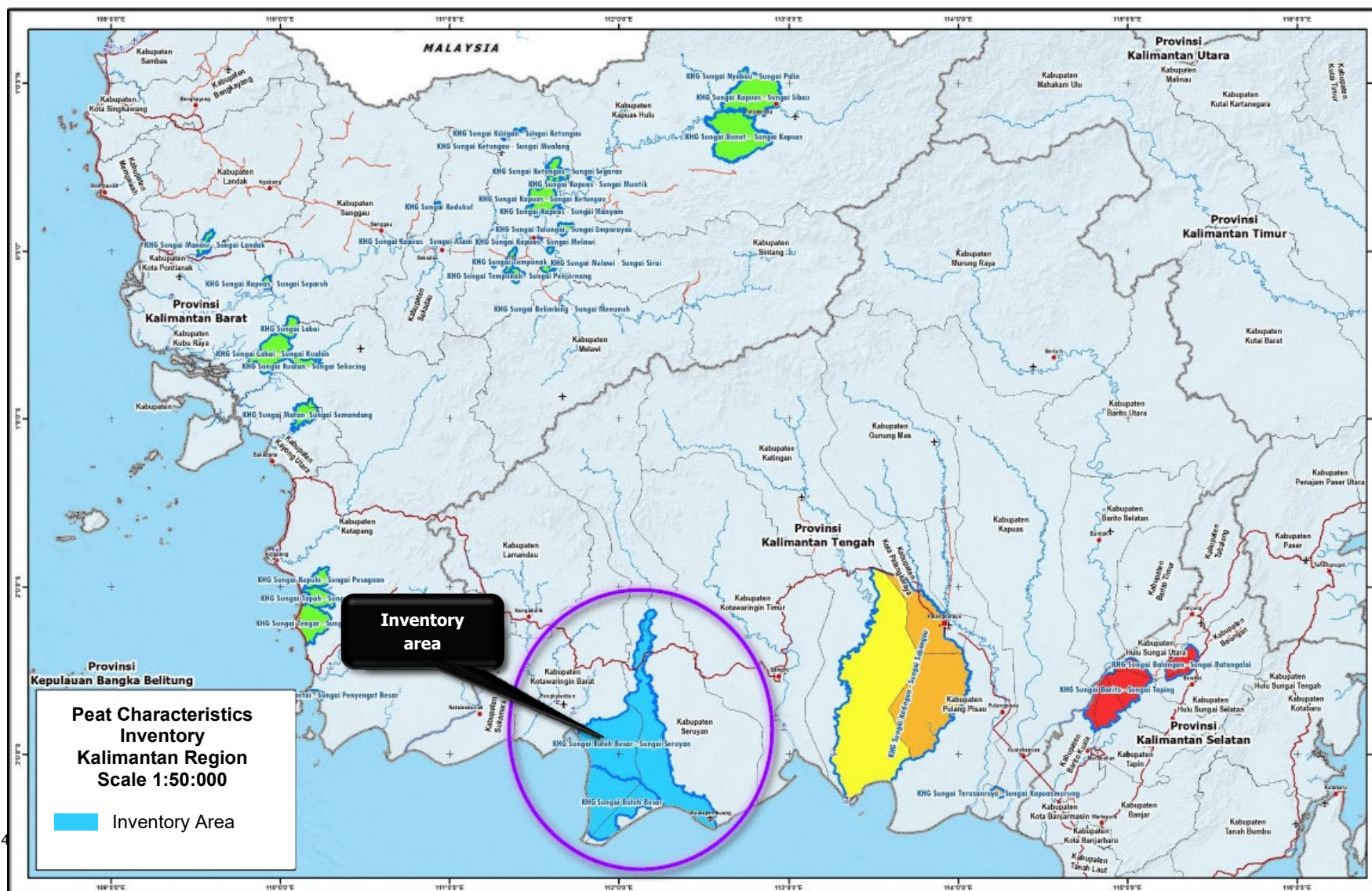
Item			Standard	Technical Specification	Amount	Performance Specification
Operational	GPS	GPS Handheld Navigation Map	Calibrated	3D Nav EPE 3 meter (3D Navigation GPS with Minimum field accuracy of 3 meter)	Minimum of 40 sets	-
		e.g Avenza or similar mapping application (as backup / comparisson of GPS data)	-	Using the Work Map prepared by the Directorate of Peat Ecosystem Protection and Management	Minimum 40 applications	-
	Photos (for each GCP and each 13 parameters)	Digital camera	-	High resolution camera (Minimum 20 mega pixel); Displays coordinates and capture time information.	Minimum 40 units	photo objects are clearly visible (sharpness, color contrast, etc.)
		e.g Open Camera, Timestamp or similar application	-	Minimum Photo Result Resolution 720p; Displays coordinates and time of capture information	Minimum 40 applications	photo objects are clearly visible (sharpness, color contrast, etc.)
		Flexible Whiteboard & black marker	-		Minimum 80 units	Size: A5 (~ 20 cm x 15 cm)
	Peat Drill (Wing+Stick)		-	-	Minimum 80 sets	each set of Peat Drill length minimum for a depth of 14 meters
	pH meter		Calibrated	Digitasl pH meter digital + calibration solution	Minimum 80 sets	-
	EC meter dan TDS meter		Calibrated	Digital EC calibration solution	Minimum 80 sets	-
	Field Equipment (Field Shoes/Boots, Raincoat and Field Hat)				Minimum 120 sets	-
	Report	Form Survey Form (Field Tally Sheet)		Base Softcopy provided by the Directorate of Peat Ecosystem Protection and Management	-	Same amount of survey points/ inventory of the characteristics of the Peat Ecosystem
Work Map/ Peat Ecosystem Inventory Transect Points Maps		-	-			
GPS tracking logs		-	-			
	External hard disk			4 Terra bytes	2 units	Password protected

Annex 2: Schedule Gantt Chart

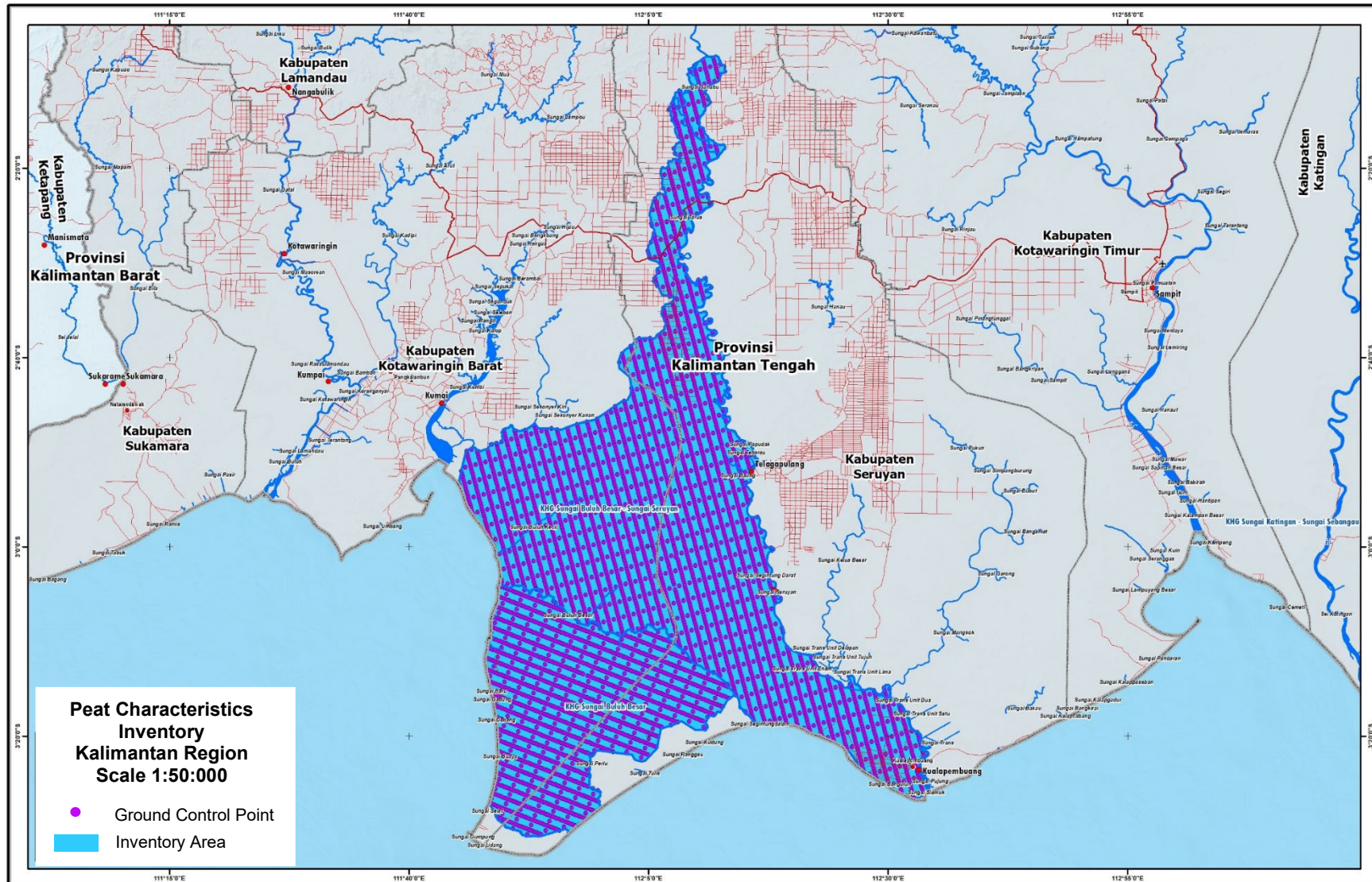
No	Activities	Week														
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	Preparation															
	Consultation with MoE (Directorate of Peat Ecosystem Protection and Management) and GIZ															
	a. Secondary data compilation															
	b. Preparation of Work Maps															
	c. Preparation of preliminary report															
	d. Final planning meeting with MoE and GIZ															
	Conduct a briefing / training program for surveyors															
2	Coordination meeting / workshop with local governance (focused group discussion with Province and District governments at province / district)															
3	Field survey															
4	Compilation of field survey data and laboratory analysis															
5	Preparation and discussion of the final report															
6	Finalization of Report and Printing of PHU Characteristic Observation Point Map on a scale of 1:50,000															

Terms of reference (ToR) for the procurement of services below the EU threshold

Annex 3: 1. Peat Ecosystem Characteristics Inventory Plan Map in KHG Sungai Buluh Besar and Sungai Buluh Besar – Sungai Seruyan (scale 1:50,000) in Central Kalimantan Province



**Annex 3: 2. Peat Ecosystem Characteristics Inventory Plan Map in KHG Sungai Buluh Besar and Sungai Buluh Besar – Sungai Seruyan
(scale 1:50,000) in Central Kalimantan Province**



Terms of reference (ToR) for the procurement of services below the EU threshold

Annex 4: Tally sheet (in Bahasa Indonesia)

TALLY SHEET

INVENTARISASI KARAKTERISTIK EKOSISTEM GAMBUT (SKALA 1:50.000)

KHG [Titik GCP]

Pelaksana : [Pelaksana]

TAHUN [Tahun]

Nomor Titik Survey : [Titik GCP]

Hari/Tanggal/Waktu : [Tanggal Survey]

Nama Surveyor : [Surveyor]

Administrasi Wilayah :

a Dusun : c Kecamatan :
[Dusun] - [Kecamatan]

b Desa : d Kabupate :
[Desa] - [Kabupaten]

No	KETERANGAN	
1.	Koordinat Titik Survey (Ko: - Latitude : [Koord X] - Longitude : [Koord Y]	
2.	Elevasi Lahan (mdpl) : [F2_Elevasi]	
3.	a. Kedalaman Air Tanah / Tinggi Muka Air (TMAT) saat ini cm [F3A_TMAT]
	b. Genangan (diatas permukaan tanah) cm [F3B_Genang]
	c. Banjir (wawancara/data Sekunder/pengamatan)	Bulan [F3C_Genang] :, lamanya [F3C_Hari] hari Ketinggian air [F3C_Tinggi]: cm Sumber air genangan: () hujan, () limpasan sungai, [F3C_Sumber] () kiriman dari hulu, () lainnya
4.	Tutupan lahan, penggunaan lahan dan kondisinya Keterangan: - jenis tanaman [F4_Jenis]: - status [F4_Status]: () masyarakat, () perusahaan Nama Perusahaan [F4_NamaPT]: Luas konsesi HTI/HGU [F4_LK]: Ha	Tutupan lahan dan penggunaan lahan [F4_Tuplah] : () hutan (Ht) () sawah (Sw) () perkebunan (Pb) () mangrove () kebun campuran (Kc) () tanah terbuka () semak belukar (Sb). () ladang/tegalan (Ld) () tambak/empang
5.	Keberadaan flora dan fauna yang dilindungi	Flora : () Tidak ada () Ada, [F5_Flora] Yaitu : Fauna : () Tidak ada () Ada, [F5_Fauna] Yaitu :
6.	Kondisi drainase alami dan buatan [F6_Draenase]	Drainase Alami : () Tidak ada () Ada Drainase Buatan : () Tidak ada () Ada Bila ada [F6_Saluran]: () saluran terbuka, () saluran terkontrol Tinggi muka air dalam saluran [F6_TMASAL] : cm

No.	KETERANGAN	
7.	Kualitas air tanah (AT) dan saluran (AS) Catatan : Pengukuran pengambilan sampel dilakukan pada kedalaman 0 – 50 cm di lahan Gambut dan Non Gambut.	<p>Keasaman (pH) : AT = _____ [F7_PH_AT], AS = _____ [F7_PH_AS]</p> <p>Daya Hantar Listrik (EC) : AT = _____ [F7_EC_AT], AS = _____ (μS) [F7_EC_AS] TDS : AT = _____ [F7_TDS_AT], AS = _____ (ppm) [F7_TDS_AS]</p>
8.	Karakteristik substratum tanah liat (bahan induk)	<p>Keasaman (pH) : _____ [F8_PH] Daya Hantar Listrik (EC) : _____ (μS) [F8_EC]</p>
9.	Tipe Luapan (wawancara) dimusim kemarau dan hujan	<p>Kemarau: () A, () B, () C, () D [F9_KMR] Hujan : () A, () B, () C, () D [F9_HJN]</p>
10.	Ketebalan gambut	<p>_____ cm, [F10_KGBT] Tingkat perombakan di 0 – 50 cm : () saprik, () hemik, () fibrik [F10_TINGKT]</p>
11.	Karakteristik substratum dibawah lapisan gambut [F11_Subtra]	<p>() Pasir kwarsa, () Clay/sedimen sungai, () Sedimen berpirit, () Granit, () Lainnya _____</p>
12.	Perkembangan kondisi atau tingkat kerusakan lahan gambut	<p>() Terdapat drainase buatan [F12_DB] () Tereksposnya sedimen berpirit / kwarsa [F12_SDMPiHt] () Kondisi tanaman: () tidak normal, () tidak produktif [F12_Kontan], () miring/tumbang, () terjadi subsiden _____ cm [F12_SUBSDEN] () Kerapatan tajuk : (rapat / sedang / jarang). [F12_KTJUK]</p>
13.	Informasi kejadian kebakaran lahan dan hari hujan (sebelumnya)	<p><u>Kebakaran lahan:</u> Kejadian tahun _____ [F13A_THN], Bulan _____ [F13A_BLN], Tgl _____ [F13A_TGL] Lama kejadian _____ hari/minggu [F13B_Lama] Upaya pemadaman [F13_Upaya]: () swadaya masyarakat () bantuan pemerintah</p> <p><u>Kejadian hari hujan:</u> Terakhir kejadian hujan _____ [F13D_TGL] Lama kejadian hujan _____ jam/hari [F13D_LAMA] Intensitas curah hujan [F13E_Inten] : () Tinggi, () Sedang, () Rendah</p>
ANALISIS LABORATORIUM (Sampel Porositas & Kelengasan)		
14.	Porositas (Hanya 10% dari total titik sampel yang tersebar merata dan mewakili kelas kedalaman)	<p>a. Kedalaman 0-50 cm : _____ (%) [F14A_POR] b. Kedalaman 50-100 cm : _____ (%) [F14B_POR]</p>
15.	Kelengasan (Hanya 10% dari total titik sampel yang tersebar merata dan mewakili kelas kedalaman)	<p>a. Kedalaman 0-50 cm : _____ (%) [F14A_KEL] b. Kedalaman 50-100 cm : _____ (%) [F14B_KEL]</p>
Keterangan / Sketsa Lokasi :		

FOTO LAPANGAN	
1. Air tanah, genangan, atau banjir :	
<p>Foto 1 Kondisi Air tanah, genangan, atau banjir</p> <p>(Bila tidak terdapat dilokasi, kolom ini diberi penjelasan, jangan dikosongkan saja, Contoh keterangan : Tidak terdapat Genangan atau bajir atau kanal..., dll)</p>	<p>Foto 2 Kondisi Air tanah, genangan, atau banjir</p> <p>(Bila tidak terdapat dilokasi, kolom ini diberi penjelasan, jangan dikosongkan saja, Contoh keterangan : Tidak terdapat Genangan atau bajir atau kanal..., dll)</p>
2. Tutupan lahan, penggunaan lahan, dan kondisinya	
<p>Foto 1. Tutupan lahan, penggunaan lahan, dan kondisinya</p> <p>(Bila tidak terdapat dilokasi, kolom ini diberi penjelasan, jangan dikosongkan saja, Contoh keterangan : Tidak terdapat Genangan atau bajir atau kanal..., dll)</p>	<p>Foto 2. Tutupan lahan, penggunaan lahan, dan kondisinya</p> <p>(Bila tidak terdapat dilokasi, kolom ini diberi penjelasan, jangan dikosongkan saja, Contoh keterangan : Tidak terdapat Genangan atau bajir atau kanal..., dll)</p>
3. Keberadaan flora dan fauna yang dilindungi	
<p>Foto 1. Keberadaan flora dan fauna yang dilindungi</p> <p>(Bila tidak terdapat dilokasi, kolom ini diberi penjelasan, jangan dikosongkan saja, Contoh keterangan : Tidak terdapat Genangan atau bajir atau kanal..., dll)</p>	<p>Foto 2. Keberadaan flora dan fauna yang dilindungi</p> <p>(Bila tidak terdapat dilokasi, kolom ini diberi penjelasan, jangan dikosongkan saja, Contoh keterangan : Tidak terdapat Genangan atau bajir atau kanal..., dll)</p>
4. Kondisi drainase alami (Sungai Alami) dan buatan/kanal	
Drainase Alami (sungai alami)	Drainase Buatan/ Kanal
<p>Foto 1. Drainase Alami (sungai alami)</p> <p>(Bila tidak terdapat dilokasi, kolom ini diberi penjelasan, jangan dikosongkan saja, Contoh keterangan : Tidak terdapat Genangan atau bajir atau kanal..., dll)</p>	<p>Foto 2. Drainase Buatan/Kanal</p> <p>(Bila tidak terdapat dilokasi, kolom ini diberi penjelasan, jangan dikosongkan saja, Contoh keterangan : Tidak terdapat Genangan atau bajir atau kanal..., dll)</p>
5. Kualitas Air Tanah	
EC dan TDS Air Tanah	PH Air Tanah
<p>Foto 1. Drainase Air Air Tanah</p> <p>(Bila tidak terdapat dilokasi, kolom ini diberi penjelasan, jangan dikosongkan saja, Contoh keterangan : Tidak terdapat Genangan atau bajir atau kanal..., dll)</p>	<p>Foto 2. Drainase Air Tanah</p> <p>(Bila tidak terdapat dilokasi, kolom ini diberi penjelasan, jangan dikosongkan saja, Contoh keterangan : Tidak terdapat Genangan atau bajir atau kanal..., dll)</p>
6. Kualitas Air Kanal	
EC dan TDS Air Kanal	PH Air Kanal
<p>Foto 1. EC dan TDS Air Kanal</p> <p>(Bila tidak terdapat dilokasi, kolom ini diberi penjelasan, jangan dikosongkan saja, Contoh keterangan : Tidak terdapat Genangan atau bajir atau kanal..., dll)</p>	<p>Foto 2. PH Air Kanal</p> <p>(Bila tidak terdapat dilokasi, kolom ini diberi penjelasan, jangan dikosongkan saja, Contoh keterangan : Tidak terdapat Genangan atau bajir atau kanal..., dll)</p>
7. Pengukuran Tinggi Muka Air (TMAT) pada lubang bor titik pengamatan	

<p>Foto 1. Proses Pengukuran Tinggi Muka Air (TMAT) pada lubang bor titik pengamatan</p> <p>(Bila tidak terdapat dilokasi, kolom ini diberi penjelasan, jangan dikosongkan saja, Contoh keterangan : Tidak terdapat Genangan atau bajir atau kanal..., dll)</p>	<p>Foto 2. Hasil Pengukuran Tinggi Muka Air (TMAT) pada lubang bor titik pengamatan</p> <p>(Bila tidak terdapat dilokasi, kolom ini diberi penjelasan, jangan dikosongkan saja, Contoh keterangan : Tidak terdapat Genangan atau bajir atau kanal..., dll)</p>
<p>8. Ketebalan Gambut</p>	<p>Substratum dibawah lapisan gambut</p>
<p>Foto 1. Proses Pengeboran Ketebalan Gambut</p> <p>(Bila tidak terdapat dilokasi, kolom ini diberi penjelasan, jangan dikosongkan saja, Contoh keterangan : Tidak terdapat Genangan atau bajir atau kanal..., dll)</p>	<p>Foto 2. Penampang Substratum dibawah lapisan gambut</p> <p>(Bila tidak terdapat dilokasi, kolom ini diberi penjelasan, jangan dikosongkan saja, Contoh keterangan : Tidak terdapat Genangan atau bajir atau kanal..., dll)</p>
<p>9. Karakteristik substratum dibawah lapisan gambut</p>	
<p>EC dan TDS</p>	<p>PH</p>
<p>Foto 1. Proses Pengukuran EC dan TDS dgn menampilkan angka pada alat</p> <p>(Bila tidak terdapat dilokasi, kolom ini diberi penjelasan, jangan dikosongkan saja, Contoh keterangan : Tidak terdapat Genangan atau bajir atau kanal..., dll)</p>	<p>Foto 2. Proses Pengukuran PH dgn menampilkan angka pada alat</p> <p>(Bila tidak terdapat dilokasi, kolom ini diberi penjelasan, jangan dikosongkan saja, Contoh keterangan : Tidak terdapat Genangan atau bajir atau kanal..., dll)</p>
<p>9. Perkembangan kondisi atau tingkat kerusakan lahan gambut (Lindung / Budidaya)</p>	
<p>Foto 1. Kondisi atau tingkat kerusakan lahan gambut (Lindung / Budidaya)</p> <p>(Bila tidak terdapat dilokasi, kolom ini diberi penjelasan, jangan dikosongkan saja, Contoh keterangan : Tidak terdapat Genangan atau bajir atau kanal..., dll)</p>	<p>Foto 2. Kondisi atau tingkat kerusakan lahan gambut (Lindung / Budidaya)</p> <p>(Bila tidak terdapat dilokasi, kolom ini diberi penjelasan, jangan dikosongkan saja, Contoh keterangan : Tidak terdapat Genangan atau bajir atau kanal..., dll)</p>
<p>10. Identifikasi Keberadaan Sedimen Berpirit</p>	
<p>Foto 1. Proses Identifikasi Keberadaan Sedimen Berpirit menggunakan H2O2</p> <p>(Bila tidak terdapat dilokasi, kolom ini diberi penjelasan, jangan dikosongkan saja, Contoh keterangan : Tidak terdapat Genangan atau bajir atau kanal..., dll)</p>	<p>Foto 2. Hasil Identifikasi Keberadaan Sedimen Berpirit menggunakan H2O2</p> <p>(Bila tidak terdapat dilokasi, kolom ini diberi penjelasan, jangan dikosongkan saja, Contoh keterangan : Tidak terdapat Genangan atau bajir atau kanal..., dll)</p>
<p>Kolom Foto – Foto Tambahan</p>	
<p>Foto 1. Infomasi tambahan lain</p> <p>(Bila tidak terdapat dilokasi, kolom ini diberi penjelasan, jangan dikosongkan saja, Contoh keterangan : Tidak terdapat Genangan atau bajir atau kanal..., dll)</p>	<p>Foto 2. Infomasi tambahan lain</p> <p>(Bila tidak terdapat dilokasi, kolom ini diberi penjelasan, jangan dikosongkan saja, Contoh keterangan : Tidak terdapat Genangan atau bajir atau kanal..., dll)</p>

ATURAN PENTING SURVEY :

1. Pastikan Tally Sheet, Peta Kerja/Transek dan alat-alat survey terbawa dan dalam kondisi baik dan sudah dikalibrasi.
2. Pastikan GPS Tracking dalam posisi Menyala (On) dari awal survey sampai akhir survey dan sudah dikalibrasi.
3. Pastikan Lokasi Titik Suvey bukan berada pada Tanah Timbunan, Sungai, Danau, Kanal/Saluran, Rumah Penduduk, Makam dan Sarang Hewan Buas. Kondisi tersebut diberikan toleransi untuk menggeser maksimal 200 meter dari titik yang seharusnya.
4. Pastikan Point-Point Tally Sheet terisi semua saat identifikasi di lokasi titik survey sesuai kondisi di lapangan.
5. Apabila ditemukan titik sampel tanah Mineral maka tally sheet tetap **wajib diisi semua kecuali point nomor : 8,10,11, 12, 14 dan 15.**
6. Pastikan telah terdokumentasikan (Foto dan Video) pada setiap tahapan kegiatan identifikasi di lokasi titik pengamatan. Untuk dokumentasi foto diwajibkan terdapat informasi koordinat dan kode titik.
7. Untuk lokasi titik-titik survey yang tidak dapat diambil wajib menyertakan bukti-bukti dalam bentuk Foto, Video, data-data dan atau Surat Pernyataan yang dikeluarkan dari daerah lokasi tersebut.
8. Apabila pada titik sampling P10 (berdasarkan titik rencana) merupakan tanah mineral dan terdapat di tengah/di pinggir sungai, maka dilakukan perpindahan pengambilan sampel P10 pada titik sampel P14 terdekat yang teridentifikasi tanah gambut.