

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

CONFIDENTIAL

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| <b>Ground-Truthing and Identification of Peatland Areas Outside Established Peat Hydrological Units in East and North Kalimantan Provinces</b> | <b>Project number/<br/>cost centre:<br/>22.2140.6-001.00</b> |
| 0. List of abbreviations .....   | 2  |
| 1. Context.....  | 3  |
| 2. Tasks to be performed by the contractor .....   | 3  |
| 3. Concept.....  | 5  |
| Technical-methodological concept .....   | 6  |
| Project management of the contractor (1.6) .....   | 6  |
| Further requirements (1.7).....  | 6  |
| 4. Personnel concept.....  | 6  |
| Team leader (1 Person) .....   | 6  |
| Field Coordinator (2 Persons) .....  | 7  |
| GIS Operator (1 Persons).....  | 8  |
| Administrative Officer (1 Persons).....  | 9  |
| Short-term expert pool (Surveyor) with 7 members .....   | 9  |
| 5. Costing requirements .....  | 10   |
| Assignment of personnel and travel expenses .....  | 10   |
| Sustainability aspects for travel .....  | 10   |
| 6. Inputs of GIZ or other actors.....  | 13   |
| 7. Requirements on the format of the tender .....  | 14   |
| 8. Option .....  | 14   |
| 9. Outsourced processing of personal data .....  | 14   |
| 10. Annexes .....  | 14   |

## **0. List of abbreviations**

|        |  |
|--------|--|
| AVB    | General Terms and Conditions of Contract for supplying services and work |
| GCP    | Ground Control Point   |
| GIS    | Geographic Information System  |
| Menlhk | Ministry of Environment and Forestry                                     |
| MoE    | Ministry of Environment  |
| OSM    | Open Street Map  |
| PHU    | Peat Hydrological Unit   |
| ToRs   | Terms of reference   |

## 1. Context

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 (ProMangrovePeat) 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 with focus on East and Kalimantan Provinces.

The Government of Indonesia, through the Minister of Environment and Forestry, has designated 13 Peat Hydrological Units (PHUs) in North Kalimantan Province and 16 PHUs in East Kalimantan Province through Ministerial Decree No. 129 of 2017. However, field observations and information from other mapping sources indicate the presence of peatlands outside the designated PHU areas.

Peatland areas located outside the established Peat Hydrological Units (PHUs) need to be ground-truthed and documented to serve as input for future regulation by the Government of Indonesia. This activity represents one of the key outputs of the ProMangrovePeat Project.

Ground-truthing and identification of peatland areas outside established Peat Hydrological Units (PHU) in East and North Kalimantan Provinces is planned to be carried out in East and North Kalimantan Provinces:

| Province         | Regency / District | Observation Points / GCP | Total Observation Points / GCP |
|------------------|--------------------|--------------------------|--------------------------------|
| East Kalimantan  | Berau              | 80                       | 655                            |
|                  | Kutai Barat        | 178                      |                                |
|                  | Kutai Kartanegara  | 17                       |                                |
|                  | Kutai Timur        | 348                      |                                |
|                  | Mahakam Ulu        | 32                       |                                |
| North Kalimantan | Kota Tarakan       | 43                       | 126                            |
|                  | Malinau            | 29                       |                                |
|                  | Nunukan            | 33                       |                                |
|                  | Tana Tidung        | 21                       |                                |
| Grand Total      |                    |                          | 781                            |

The ground-truthing technical procedure will be based on 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.

## 2. Tasks to be performed by the contractor

The contractor is responsible for providing the following services:

- The contractor is responsible for selecting, preparing, training and steering the personnels assigned to perform the ground-truthing tasks.

- The contractor provides equipment and material supplies, see annex 1 for equipment and materials specifications.
- The contractor manages costs and expenditures, accounting processes and invoicing in line with the requirements of GIZ.
- The contractor reports regularly to GIZ in accordance with the current AVB of the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH.
- 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. Coordinate of nearest rivers
  - b. Database Output
    1. Database of ground-truthing result, compiled through field surveys (see attached tally sheet for parameters), in shapefile and Excel table formats
    2. Database of nearest rivers with names of the rivers, compiled through field surveys, in shapefile and Excel table formats.
  - c. Report (hardcopy and softcopy).
    1. Preliminary report
    2. Final report
    3. Executive summary
    4. Presentation materials, prepared based on the final report (concise and informative)
- The contractor is responsible for selecting, preparing, training and steering the short-term experts assigned to perform the tasks.
- The contractor provides equipment and supplies (consumables) and assumes the associated operating and administrative costs.
- The contractor manages costs and expenditures, accounting processes and invoicing in line with the requirements of GIZ.
- The contractor reports regularly to GIZ in accordance with the current AVB of the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH.

| Milestones/partial works  | Deadline/place/person responsible            | Criteria for acceptance   |
|---|--|---|
| <b>Output 1</b> <ul style="list-style-type: none"> <li>• Initial meeting with GIZ</li> <li>• Equipment and materials are ready</li> <li>• Final workplan</li> </ul> | 1 week after contract start<br>(15.09.2025)  | <b>Preliminary Report</b> <ul style="list-style-type: none"> <li>• Final workplan</li> <li>• Approved list of personnel</li> <li>• Approved list of equipment and material</li> <li>• Minutes of initial meeting with GIZ</li> </ul> <b>Schedule of payment:</b><br>40% after preliminary report is accepted. |
| <b>Output 2</b>   | 9 weeks after contract start<br>(18.11.2025) | <b>Final Report</b> <ol style="list-style-type: none"> <li>1. Result of field survey</li> </ol>   |

|   |  |   |
|---|--|---|
| <ul style="list-style-type: none"> <li>• All observation points have been surveyed.</li> <li>• All field survey results verified by GIZ.</li> </ul> |  | <ul style="list-style-type: none"> <li>• Distribution map of sample points (survey results at a 1:50,000 scale)</li> <li>• Listing of observation point coordinates.</li> <li>• Listing of nearest rivers coordinates and their names.</li> <li>• GPS tracking log of survey routes.</li> <li>• Tally sheet of field data and information.</li> <li>• Documentation (photos and videos at each sampling point, organized in folders per sample point in HD format with geotagging)</li> <li>• Updated canal/drainage network map for 2024 (OpenStreetMap/OSM) based on field survey results.</li> </ul> <p>2. Final database Output (saved on external hard disk).</p> <ul style="list-style-type: none"> <li>• Database of ground-truthing result, compiled through field, in shapefile and Excel table formats</li> <li>• Database of nearest rivers and their names in shapefile and Excel table formats.</li> </ul> <p>3. Report (hardcopy and softcopy).</p> <ul style="list-style-type: none"> <li>• Preliminary report</li> <li>• Final report</li> <li>• Executive summary</li> <li>• Presentation materials, prepared based on the final report (concise and informative)</li> </ul> |
|---|--|---|

Period of assignment: from October 2025 until 30.03.2026.

### 3. Concept

In the tender, the tenderer is required to show *how* the objectives defined in Chapter 2 (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 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

- a. Responsible for leading the team in managing, coordinating, and supervising the implementation team.
- b. Act as the team leader in coordinating, discussing, assisting, presenting, and reporting activities.
- c. Develop schedules and monitor work progress.
- d. Coordinate team members in preparing concepts and planning methods, drafting reports, and organizing and conducting discussions/presentations.

- e. Overall responsibility for the advisory packages of the contractor (quality and deadlines)
- f. Coordinating and ensuring communication with GIZ and others involved in the project.

#### Qualifications of the team leader

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

#### **Field Coordinator 1 (East Kalimantan)**

##### Tasks of the field coordinator

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

##### Qualifications of the field coordinator

- a. Education/training (2.2.1): Bachelor degree in Soil Science/Agrotechnology/Land Resource Management/Agricultural Technology/Agriculture/Forestry/Geodesy/Geography/Geology.
- b. Language (2.2.2): C2 -level language proficiency in Bahasa Indonesia and A2-level in English.
- c. General professional experience (2.2.3): 3 years of professional experience in the land suitability survey.
- d. Specific professional experience (2.2.4): 2 years of professional experience in peatland ecosystem survey.
- e. Leadership/management experience (2.2.5): 2 years of professional experience in coordinating field survey.
- f. Regional experience (2.2.6): 2 years of experience in projects in Indonesia.

## **Field Coordinator 2 (North Kalimantan)**

### Tasks of the field coordinator

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

### Qualifications of the field coordinator

- a. Education/training (2.3.1): Bachelor degree in Soil Science/Agrotechnology/Land Resource Management/Agricultural Technology/Agriculture/Forestry/Geodesy/Geography/Geology.
- b. Language (2.3.2): C2 -level language proficiency in Bahasa Indonesia and A2-level in English.
- c. General professional experience (2.3.3): 3 years of professional experience in the land suitability survey.
- d. Specific professional experience (2.3.4): 2 years of professional experience in peatland ecosystem survey.
- e. Leadership/management experience (2.3.5): 2 years of professional experience in coordinating field survey.
- f. Regional experience (2.3.6): 2 years of experience in projects in Indonesia.

## **GIS Operator (1 Persons)**

### Tasks of the GIS Operator

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

### Qualifications of the GIS Operator

- a. Education/Training (2.4.1): Bachelor or associate degree in Agriculture, Agricultural Technology, Forestry, Geodesy, Geography, Geology.
- b. Language (2.4.2): C2 -level language proficiency in Bahasa Indonesia and A2-level in English.
- c. General professional experience (2.4.3): 3 years of experience as general GIS Operator
- d. Specific professional experience (2.4.4): 1 years of experience in processing field survey data.



## **Administrative Officer (1 Persons)**

### Tasks of the Administrative Officer

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

### Qualifications of the Administrative Officer

- a. Education/Training (2.5.1): Associate degree (D3 in Indonesia) Secretary, Management, Accounting, Finance, Economics
- b. Language (2.5.2): C2 -level language proficiency in Bahasa Indonesia and A2-level in English.
- c. General professional experience (2.5.3): 1 year of professional experience in project administration
- d. Specific professional experience (2.5.4): 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:

- a. Team skills
- b. Initiative
- c. Communication skills
- d. Socio-cultural skills
- e. Efficient, partner- and client-focused working methods
- f. Interdisciplinary thinking

## **Short-term expert pool (Surveyor) with 7 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)

- a. Education/Training (2.6.1): Bachelor in Soil Science, Agrotechnology, Resource Management, Agriculture, Agricultural Technology, Forestry, Geodesy, Geography, Land Geology.
- b. Language (2.6.2): C2 -level language proficiency in Bahasa Indonesia and A2-level in English.

- c. General professional experience (2.6.3): 2 years of experience as a land suitability surveyor.
- d. Specific professional experience (2.6.4): 1 year of experience as peatland ecosystem surveyor
- e. Regional experience (2.6.5): 2 years of experience in projects in Indonesia
- f. Other (2.6.7) 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 (CO<sub>2</sub> 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 CO<sub>2</sub> efficiency. For short distances, travel by train (second class) or e-mobility should be the preferred option.

CO<sub>2</sub> 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 days                                | Number of experts | Number of days per expert | Total        | Comments                |
|---|-------------------|---------------------------|--------------|-------------------------|
| <b>Designation of Team Leader</b>       | 1                 | 2 months                  | 1 x 2 months | Monthly basis, lump sum |
| <b>Designation of Field Coordinator</b> | 2                 | 2 months                  | 2 x 2 months | Monthly basis, lump sum |
| <b>Designation of Surveyors</b>         | 7                 | 40 days                   | 7 x 40 days  | Daily basis, lump sum   |
| <b>Designation of GIS Operator</b>      | 1                 | 2 months                  | 1 x 2 months | Monthly basis, lump sum |

|  |   |  |                           |                         |
|--|---|--|---------------------------|-------------------------|
| <b>Designation of Administrative Officer</b>                           | 1   | 2 months   | 1 x 2 months              | Monthly basis, lump sum |
| <b>Travel expenses</b>   | <b>Quantity</b>   | <b>Number per expert</b>   | <b>Total</b>              | <b>Comments</b>         |
| <b>Overnight allowance in country of assignment (Province Capital)</b> | 1 Team Leader<br>2 Field Coordinators<br>7 Surveyors<br>1 GIS Operators | 2 nights   | 2 nights x 11 persons     | Lump sum                |
| <b>Overnight allowance in country of assignment (on site / field)</b>  | 1 Team Leader<br>2 Field Coordinators<br>7 Surveyors<br>1 GIS Operators | 38 days  | 38 days x 11 persons      | Lump sum                |
| <b>Per-diem allowance in country of assignment (Province Capital)</b>  | 1 Team Leader<br>2 Field Coordinators<br>7 Surveyors<br>1 GIS Operators | 2 days   | 2 days x 11 persons       | Lump sum                |
| <b>Per-diem allowance in country of assignment (on site / field)</b>   | 1 Team Leader<br>2 Field Coordinators<br>7 Surveyors<br>1 GIS Operators | 38 days  | 38 days x 11 persons      | Lump sum                |
| <b>Transport</b>   | <b>Quantity</b>   | <b>Number per expert</b>   | <b>Total</b>              | <b>Comments</b>         |
| <b>Domestic flights</b>  | 1 Team Leader   | 1 one-way trip to East Kalimantan<br>1 one-way trip from East Kalimantan | 3 flight trips x 1 person | Lump sum                |

|   |  |  |                            |  |
|---|--|--|----------------------------|--|
|   |  | to North Kalimantan<br>1 one-way trip return to origin   |                            |  |
|   | 1 GIS Operator                         | 1 one-way trip to East Kalimantan<br><br>1 one-way trip from East Kalimantan to North Kalimantan<br><br>1 one-way trip to return to origin | 3 flight trips x 1 person  | Lump sum   |
|   | 1 Field Coordinator (North Kalimantan) | 1 return trip from origin to North Kalimantan  | 2 flight trips x 1 person  | Lump sum   |
|   | 3 Surveyors (North Kalimantan)         | 1 return trip from origin to North Kalimantan  | 2 flight trips x 3 persons | Lump sum   |
|   | 1 Field Coordinator (East Kalimantan)  | 1 return trip from origin to East Kalimantan   | 2 flight trips x 1 person  | Lump sum   |
|   | 4 Surveyors (East Kalimantan)          | 1 return trip from origin to East Kalimantan   | 2 flight trips x 4 persons | Lump sum   |
| <b>CO<sub>2</sub> compensation for air travel</b>         | 11 persons                             | 14 flight trips (see detail for domestic flight above)   | 11 persons                 | A fixed budget of IDR 7,730,000 is earmarked for settling carbon offsets against evidence. |
| <b>Travel expenses</b><br>• Car rental in East Kalimantan | 2 units                                | 6 days   | 3 units x 6 days           | Lump sum   |

| <ul style="list-style-type: none"> <li>Car rental in North Kalimantan</li> </ul>  | 1 unit                     | 4 days                        | 1 unit x 4 days           | Lump sum   |
|---|----------------------------|-------------------------------|---------------------------|--|
| <ul style="list-style-type: none"> <li>Public speed boat Tarakan – Tanung selor return trip (North Kalimantan)</li> </ul> | 6 persons                  | 1 return trip for each person | 6 persons x 1 return trip | Lump sum   |
| <ul style="list-style-type: none"> <li>Motorcycle rental in the site / field location</li> </ul>                          | 15 units                   | 38 days                       | 15 units x 38 days        | Lump sum   |
| <ul style="list-style-type: none"> <li>Boat rental in the site / field location (East and North Kalimantan)</li> </ul>    | 10 unit                    | 2 days                        | 10 units x 2 days         | Lump sum   |
| Other costs   | Number                     | Price                         | Total                     | Comments   |
| <b>Flexible remuneration</b>  | 1                          | IDR 20,000,000                | Up to IDR 20,000,000      | A budget of IDR 20,000,000 is foreseen for flexible remuneration. Please incorporate this budget into the price schedule.<br><br>Use of the flexible remuneration item requires prior written approval from GIZ and need evidence. |
| <b>Procurement and rental of materials and equipment</b>  | 1 package                  | IDR 78,125,000                | IDR 78,125,000            | Lump sum   |
| <b>Local support labours</b>  | 1 package (for 20 persons) | IDR 128,000,000               | IDR 128,000,000           | Lump sum   |

## 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.
- Meetings for activities preparation and verification of results 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 organized 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. Ground -truthing locations in East and North Kalimantan Provinces
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 9 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 9 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 9 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 9 applications   | photo objects are clearly visible (sharpness, color contrast, etc.) |
|             |   | Flexible Whiteboard & black marker  | -                                 |  | Minimum 9 units  | Size: A5 (~ 20 cm x 15 cm)  |
|             | Peat Drill / Peat Auger (Wing+Stick)                        |   | -                                 | -  | Minimum 9 sets   | each set of Peat Drill length minimum for a depth of 14 meters      |
|             | pH meter  |   | Calibrated                        | Digital pH meter digital + calibration solution  | Minimum 14 sets  | -   |
|             | EC meter dan TDS meter                                      |   | Calibrated                        | Digital EC calibration solution  | Minimum 14 sets  | -   |
|             | Field Equipment (Field Shoes/Boots, Raincoat and Field Hat) |   |                                   |  | Minimum 30 sets  | -   |
|             | Report  | Form Survey Form (Field Tally Sheet)  | Softcopy, base on format provided | -  | Same amount of survey points/ inventory of the characteristics of the Peat Ecosystem | -   |
|             |   | Work Map/ Peat Ground-truthing Transect Points Maps                             |                                   | -  |  | -   |
|             |   | GPS tracking logs   |                                   | -  |  | -   |
|             | External hard disk  |   |                                   | 2 Terra bytes  | 1 units  | Password protected  |

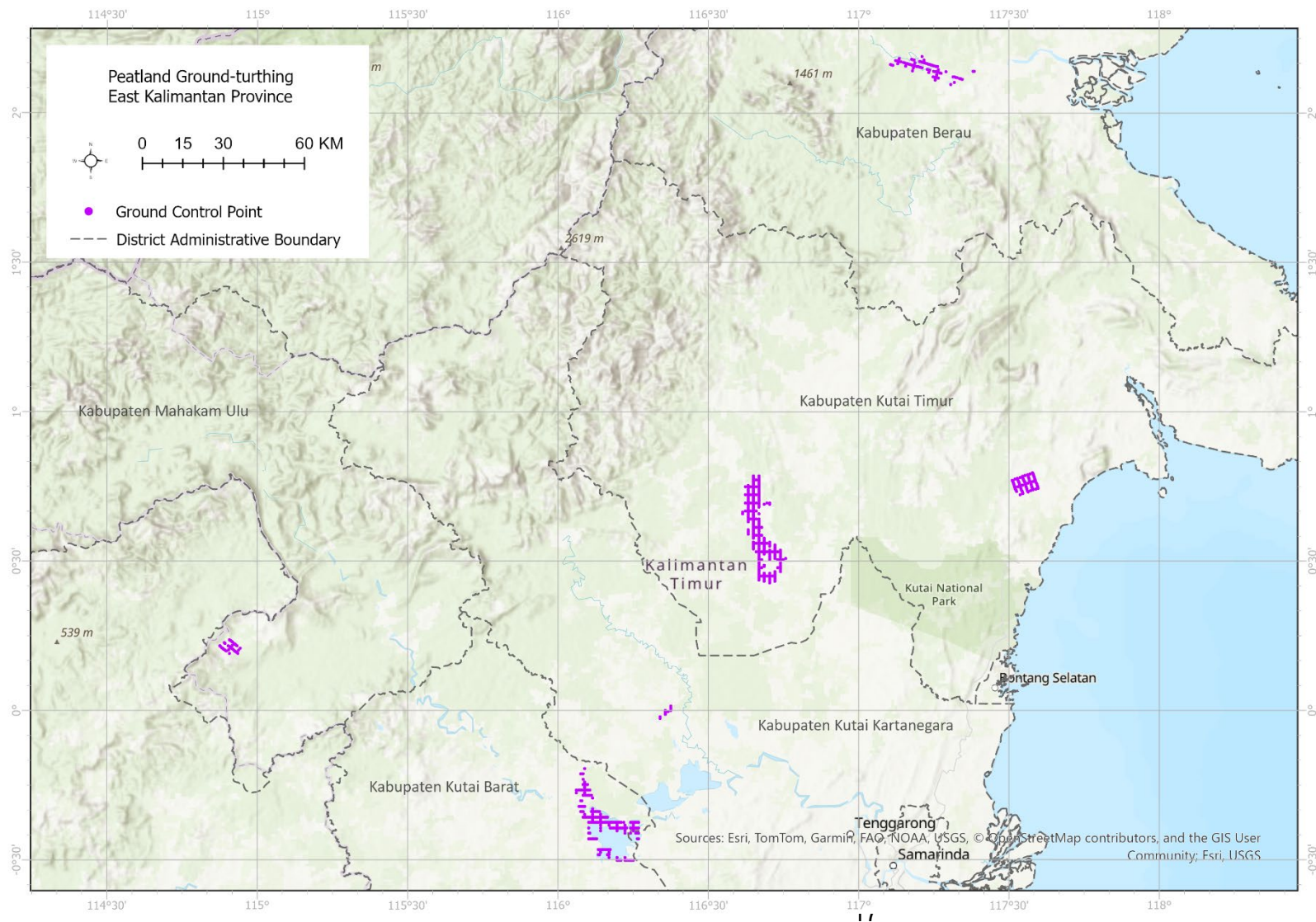
## Annex 2: Schedule Gantt Chart

| No | Activities   | Week |   |   |   |   |   |   |   |   |    |    |    |    |    |    |
|----|--|------|---|---|---|---|---|---|---|---|----|----|----|----|----|----|
|    |  | 1    | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| 1  | Preparation  |      |   |   |   |   |   |   |   |   |    |    |    |    |    |    |
|    | Consultation with GIZ  |      |   |   |   |   |   |   |   |   |    |    |    |    |    |    |
|    | a. Secondary data compilation  |      |   |   |   |   |   |   |   |   |    |    |    |    |    |    |
|    | b. Preparation of Work Maps  |      |   |   |   |   |   |   |   |   |    |    |    |    |    |    |
|    | c. Preparation of preliminary report   |      |   |   |   |   |   |   |   |   |    |    |    |    |    |    |
|    | d. Final planning meeting with GIZ   |      |   |   |   |   |   |   |   |   |    |    |    |    |    |    |
|    | Conduct a briefing / training program for surveyors                            |      |   |   |   |   |   |   |   |   |    |    |    |    |    |    |
| 2  | Coordination local governance with Province, District and Villages governments |      |   |   |   |   |   |   |   |   |    |    |    |    |    |    |
| 3  | Field survey   |      |   |   |   |   |   |   |   |   |    |    |    |    |    |    |
| 4  | Compilation of field survey data   |      |   |   |   |   |   |   |   |   |    |    |    |    |    |    |
| 5  | Preparation and discussion of the final report                                 |      |   |   |   |   |   |   |   |   |    |    |    |    |    |    |
| 6  | Finalization of Report   |      |   |   |   |   |   |   |   |   |    |    |    |    |    |    |



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

## Annex 3: Ground-truthing location in East Kalimantan Province



### Annex 3: Ground-truthing location in East 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 Kabupaten : .....  
[Desa] - [Kabupaten]

| No | KETERANGAN   |   |
|----|--|---|
| 1. | Koordinat Titik Survey (Ko:<br>- Latitude : ..... [Koord X]<br>- 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<br>Ketinggian air [F3C_Tinggi]: ..... cm<br>Sumber air genangan: ( ) hujan, ( ) limpasan sungai, [F3C_Sumber] ( ) kiriman dari hulu, ( ) lainnya .....                              |
| 4. | Tutupan lahan, penggunaan lahan dan kondisinya<br>Keterangan:<br>- jenis tanaman [F4_Jenis]: .....<br>- status [F4_Status]:<br>( ) masyarakat, ( ) perusahaan Nama Perusahaan [F4_NamaPT]: .....<br>Luas konsesi HTI/HGU [F4_LK]: ..... Ha | Tutupan lahan dan penggunaan lahan [F4_Tuplah] :<br>( ) hutan (Ht) ( ) sawah (Sw)<br>( ) perkebunan (Pb) ( ) mangrove<br>( ) kebun campuran (Kc) ( ) tanah terbuka<br>( ) semak belukar (Sb).<br>( ) ladang/tegalan (Ld)<br>( ) tambak/empang |
| 5. | Keberadaan flora dan fauna yang dilindungi   | Flora : ( ) Tidak ada ( ) Ada, [F5_Flora]<br>Yaitu : .....<br>Fauna : ( ) Tidak ada ( ) Ada, [F5_Fauna]<br>Yaitu : .....  |
| 6. | Kondisi drainase alami dan buatan [F6_Draenase]  | Drainase Alami : ( ) Tidak ada ( ) Ada Drainase<br>Buatan : ( ) Tidak ada ( ) Ada<br>Bila ada [F6_Saluran]: ( ) saluran terbuka, ( ) saluran terkontrol<br>Tinggi muka air dalam saluran [F6_TMASAL] : ..... cm                               |

| No.                          | KETERANGAN  |   |
|------------------------------|---|---|
| 7.                           | Kualitas air tanah (AT) dan saluran (AS)<br><b>Catatan :</b> Pengukuran pengambilan sampel dilakukan pada kedalaman 0 – 50 cm di lahan Gambut dan Non Gambut. | <p>Keasaman (pH) :<br/>AT = _____ [F7_PH_AT], AS = _____ [F7_PH_AS]</p> <p>Daya Hantar Listrik (EC) :<br/>AT = _____ [F7_EC_AT], AS = _____ (μS) [F7_EC_AS]<br/>TDS : AT = _____ [F7_TDS_AT], AS = _____ (ppm) [F7_TDS_AS]</p>  |
| 8.                           | Karakteristik substratum tanah liat (bahan induk)   | <p>Keasaman (pH) : _____ [F8_PH]<br/>Daya Hantar Listrik (EC) : _____ (μS) [F8_EC]</p>  |
| 9.                           | Tipe Luapan (wawancara) musim kemarau dan hujan   | <p>Kemarau: ( ) A, ( ) B, ( ) C, ( ) D [F9_KMR]<br/>Hujan : ( ) A, ( ) B, ( ) C, ( ) D [F9_HJN]</p>   |
| 10.                          | Ketebalan gambut  | <p>_____ cm, [F10_KGBT]<br/>Tingkat perombakan di 0 – 50 cm :<br/>( ) saprik, ( ) hemik, ( ) fibrik [F10_TINGKT]</p>  |
| 11.                          | Karakteristik substratum dibawah lapisan gambut [F11_Subtra]  | <p>( ) Pasir kwarsa, ( ) Clay/sedimen sungai,<br/>( ) Sedimen berpirit, ( ) Granit,<br/>( ) Lainnya _____</p>   |
| 12.                          | Perkembangan kondisi atau tingkat kerusakan lahan gambut  | <p>( ) Terdapat drainase buatan [F12_DB]<br/>( ) Tereksposnya sedimen berpirit / kwarsa [F12_SDMPirit]<br/>( ) Kondisi tanaman: ( ) tidak normal, ( ) tidak produktif [F12_Kontan],<br/>( ) miring/tumbang, ( ) terjadi subsiden _____ cm [F12_SUBSDEN]<br/>( ) Kerapatan tajuk : (rapat / sedang / jarang). [F12_KTJUK]</p>  |
| 13.                          | Informasi kejadian kebakaran lahan dan hari hujan (sebelumnya)  | <p><b>Kebakaran lahan:</b><br/>Kejadian tahun _____ [F13A_THN], Bulan _____ [F13A_BLN], Tgl _____ [F13A_TGL]<br/>Lama kejadian _____ hari/minggu [F13B_Lama]<br/>Upaya pemadaman [F13_Umaya]: ( ) swadaya masyarakat<br/>( ) bantuan pemerintah</p> <p><b>Kejadian hari hujan:</b><br/>Terakhir kejadian hujan _____ [F13D_TGL]<br/>Lama kejadian hujan _____ jam/hari [F13D_LAMA]<br/>Intensitas curah hujan [F13E_Inten] :<br/>( ) Tinggi, ( ) Sedang, ( ) Rendah</p> |
| Keterangan / Sketsa Lokasi : |   |   |

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

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

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.