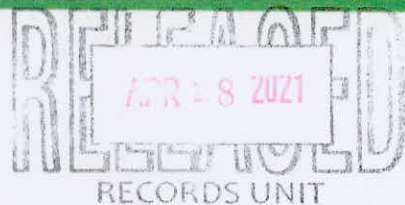




FOREST MANAGEMENT BUREAU



MEMORANDUM

FOR : The Regional Executive Director
DENR – MIMAROPA Region
1515 L&S Bldg., Roxas Blvd., Ermita, Manila

FROM : The Assistant Secretary for Policy, Planning, and Foreign Assisted and
Special Projects, and Director, in concurrent capacity

SUBJECT : **CY 2020 ANNUAL ACCOMPLISHMENT REPORT ON THE
RESURVEYED EXISTING CBFMA_s WITHIN THE AREA OF
JURISDICTION OF CENRO SABLAYAN, OCCIDENTAL
MINDORO**

DATE : **APR 27 2021**

This pertains to your Memorandum submitting the annual accomplishment report on the conducted resurvey of existing CBFMA_s within the jurisdiction of CENRO Sablayan, Occidental Mindoro for CY 2020.

Per review of the submitted report, this Office noted the following comments and observations:

1. Only three (3) POs namely Mendiola Cataluhan Peoples Organization, Carindan Forest Farmers Association and Samahang Magsasaka ng Kabangkalan para sa Kaunlaran have attached Annex 4 – Review and Concurrence Form. However, attached forms were not signed by the tenure holder. Please be informed that per FMB Technical Bulletin No. 21-A, the Review and Concurrence Form should be duly signed individually by the team leader, RO/PENRO/CENRO representative and tenure holder/authorized representative and not just the summary sheet of findings, recommendations and agreements;
2. There is inconsistency in the name of one (1) CBFMA holder. In the submitted list, the name indicated is “Forest Conserver and Developers Association” while in the map, it is “Kalibon-Libonan Forest Conserver Developers Association Inc.”. Please be informed that consistency in the use of CBFMA holder’s name is very important as this will have legal implications if not used properly. It should follow the existing/latest registered name of the PO with SEC/CDA. In case there is a change of name with the name indicated in CBFM Agreement, the original name should be written after the new name in open and close parenthesis e.g. Forest Conserver and Developers Association (formerly Kalibon-Libonan Forest Forest Conserver Developers Association Inc.) with supporting documents; and

3. Submitted rectified/final map is only approved by the CENR Officer which is not consistent with what is stipulated in FMB Technical Bulletin No. 21-A i.e. it should be approved by the Regional Executive Director. Likewise, it should include the statement *"This is to certify that this is the true and corrected map"* (please refer to Annex 5 of the said Technical Bulletin for the format and complete statement).

In this regard, we are returning the said documents for further revision and appropriate action based on the comments and observations above. Please be guided with FMB Technical Bulletin No. 21-A for the detailed process to properly facilitate the said activity. Further, please be advised that the conduct of resurvey should prioritize areas with reported cases/issues of overlapping with adjacent tenure instrument/s.

FOR INFORMATION AND APPROPRIATE ACTION, PLEASE.



MARCIAL C. AMARO, JR., CESO III

cc: The Undersecretary for Field Operations and Environment



Republic of the Philippines
Department of Environment and Natural Resources
FOREST MANAGEMENT BUREAU
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E-mail Address: fmbdenr@mozcom.com / Website: <http://forestry.denr.gov.ph>

MEMORANDUM

FOR/TO : All Regional Directors
All Assistant Regional Directors
All PENROs
All CENROs

FROM : The Director

SUBJECT : **TECHNICAL BULLETIN NO. 2/A: GUIDELINES IN THE ASSESSMENT, SURVEY/ RESURVEY, AND MAPPING OF AREAS COVERED BY CBFMA AND OTHER FOREST TENURE AGREEMENT**

DATE : NOV 23 2019

I. The Technical Bulletin

This technical bulletin shall guide the assessment, survey/resurvey, mapping, and delineation of areas covered by forest tenure instruments. Manual on Integration and Assessment of Other ENR Datasets was considered in preparing this technical bulletin.

II. Users of the Technical Bulletin

This technical bulletin is primarily intended to guide DENR field officers and personnel in the conduct of assessment, survey/resurvey, mapping, and delineation of areas covered by CBFMA and other forest tenure.

III. Definition of Terms

- a) **Alienable and Disposable (A&D) Lands** - Refers to lands of the public domain which have been the subject of the present system of classification and declared as not needed for forest purposes.
- b) **Assessment** – Conduct of table map assessment. Procedure for assessing/ making judgment on the classification accuracy, and/or mapping accuracy on the areas under forest tenure instrument.
- c) **Delineation** – Conduct of site investigation, field reconnaissance and assessment, on forest tenure boundaries in the field.
- d) **Digital Conversion** - The process of converting data from analog to machine usable digital format via processes such as digitizing or scanning.

- e) **Environment and Natural Resources (ENR) Issuances** – Refers to Environment and Natural Resources (ENR) regulatory (e.g. PCBRMA, MPSA), and legal (e.g. protected areas, proclaimed watersheds, military reservations) issuances not managed by DENR.
- f) **Forestland/ Timberland** - Includes the public forest, the permanent forest or forest reserves, and forest reservations.
- g) **Geographic Information System (GIS)** - an integrated system of hardware, software, personnel and procedures for the capture, storage, analysis, manipulation and display of geographically-referenced spatial data.
- h) **Global Positioning System (GPS)** - A system for providing precise location which is based on data transmitted from a constellation of 24 satellites. It comprises three segments: (a) the Control Segment, (b) the Space Segment, and (c) the User Segment
- i) **Land Classification (LC) Map** - A map depicting the boundaries between Alienable and Disposable (A/D) Land and Forestland/ Timberland.
- j) **Map Conversion** - Process of transforming spatial information indicated on maps to digital format in order to organize this information into GIS compatible datasets.
- k) **Map Layout** - The arrangement of elements on a map, possibly including a title, legend, north arrow, scale bar, and geographic data.
- l) **Philippine Reference System of 1992 (PRS92)** - The standard reference system for all surveying and mapping in the Philippines.
- m) **Root Mean Square Error (RMSE)** – is the measure of accuracy derived from the deviation of measured points from their true position.
- n) **Stocktaking** - Efficient and effective conduct of records classification, and database creation based on their nature and characteristics of enduring value; such records may be in the form of paper, or other materials whether electronic/ digital or print.
- o) **Tie point** – Point from established permanent monuments (such as BLLM, PBM, MBM, BBM) to which a survey connection is made.
- p) **Tie line** – A line which connects two fixed points on the boundary of a certain forest tenure. The position of each tie line may be close to some features, such as paths, building etc.

IV. List of Acronyms

- a) **BBM** - Barrio Boundary Monument
- b) **BLLM** – Bureau of Lands Location Monument
- c) **CBFMA** - Community Based Forest Management Agreement
- d) **CDD** – Conservation and Development Division
- e) **CENRO** – Community Environment & Natural Resources Office
- f) **ED** – Enforcement Division
- g) **FLGMA** - Forest Land Grazing Management Agreements

- h) **FLAg** - Special Forestland Use Agreement
- i) **FLAgT** - Forestland Use Agreements for Tourism
- j) **GIS** - Geographic Information System
- k) **GPS** - Global Positioning System
- l) **GNSS** - Global Navigation Satellite System
- m) **IFMA** - Integrated Forest Management Agreement
- n) **LC map** - Land Classification map
- o) **LPDD** - License, Patents, and Deeds Division
- p) **MBM** - Provincial Boundary Monument
- q) **PBM** - Provincial Boundary Monument
- r) **PACBRMA** - Protected Area Community-Based Resource Management Agreement
- s) **PO** - People's Organization
- t) **RMSE** - Root Mean Square Error
- u) **SIFMA** - Socialized Industrial Forest Management Agreement
- v) **SLUP** - Special Land Use Permit
- w) **SMD** - Surveys and Mapping Division
- x) **TFLA** - Tree Farm Lease Agreement
- y) **UTM** - Universal Transverse Mercator
- z) **WGS** - World Geodetic System

PRELIMINARY ACTIVITIES

Step 1. Creation of Composite Team

The Regional Director shall create composite team/s (through DENR Region Special Order) from SMD, LPDD, CDD and ED of the Regional Office together with the GIS specialist and/or technical staff from Regional Office, PENR and CENR Offices.

Step 2. Stocktaking and Verification

The team shall collect all available information, shapefiles, analog maps and copies of forest tenure agreements.

An updated list of existing, expired, suspended and cancelled forest tenure per CENR Office shall be prepared upon the verification of all available forest tenure agreement and submitted to the PENR Office, Regional Office and Forest Management Bureau for national database.

Upon verification, survey and resurvey activities shall be conducted based on the following:

1. Areas with officially reported cases/issues of overlapping, increase/decrease, abandonment, etc. coming from tenure holder/ people's organization and other stakeholders; and
2. Areas targeted by DENR field offices based on recent assessment and monitoring.

Step 3. Preparation of Digital Maps

The team shall convert gathered analog maps into digital format (i.e. shapefile) if the latter is not available. It may include any/all of the following process:

- a. **Plotting by Technical Description** - This is done by entering the bearings and distances of each line listed in the technical description from analog maps of a certain Forest Tenure Agreement. Vector lines will be drawn by the software representing the boundary of the described block. The raster overlay will act as reference in plotting the lines.

- b. **Digitizing by Map Features** - Analog maps of Forest Tenure Agreement with no Technical Description will be digitized through this process:

- i. **Scanning** - Conversion of printed analog maps into digital image format. The scanner should have the following minimum specifications:

- 1. Large enough to accommodate the size of the source maps.
- 2. With resolution of at least 400 dots per inch.
- 3. Preferably flat or flatbed type to minimize distortion or deformation during data capture.
- 4. Must be able to scan in both grayscale and colored.

- ii. **Georeferencing and Rectification** - The following are the recommended procedures which shall be followed for all the scanned maps.

- 1. Project the tick marks that will be used as reference.
- 2. Points from geographic coordinate system to UTM 51N grid coordinates based on Luzon 1911 Datum-Clarke 1866 Spheroid.
- 3. If the software allows it, create a database table or text file for the projected reference points. The table must include the image coordinates for each reference point with its corresponding ground coordinates.
- 4. Register the selected reference points on the scanned map to its corresponding ground coordinates. All tick marks should be registered with its equivalent latitude/longitude.
- 5. After registering all of the tick marks, check If the (Root Mean Square Error) RMSE is less than 4 pixels for topographic maps. It is expected that for LC maps, the RMSE would have a larger value. Thus, the adjustment of RMSE will be solely based upon the individual's discretion. Re-register points which have big values by adjusting them accordingly.
- 6. Rectify the scanned image using the default warping and re-sampling methods (e.g. 1st degree polynomial warping method and nearest neighbor resampling)
- 7. Remove the map collar area of the rectified image by cropping the area outside the gridlines. This is done to eliminate all unnecessary pixels and to have a smaller file size.

8. Save the rectified images in JPG format. .JPG files must have an associated jgw world file when an image is georeferenced. This world file contains the map information used by GIS software for image display. Other formats such as Tagged Image File Format (geoTIFF) may be used. However, this format produces a bigger file size.
- iii. **Digitizing** - Raster files or scanned and rectified analog maps of forest tenure shall be converted into vector format (shapefiles) using GIS software. This shall also be applicable to maps with minor errors in its technical description (such as errors in bearings, realignment to LC maps). All created shapefiles must be set to WGS84 datum.
- c. **Plotting by Graphical Display** - In cases that the maps have unreadable or no bearings, distances, and tie lines in the technical description, point to point digitization is done for data conversion. Lines are drawn by identifying the corners of a block in a georeferenced map on the display.

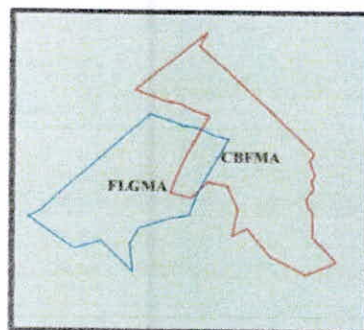
Step 4. Preliminary Map Assessment

The team shall assess forest tenure issuances, and its specific portions, that shall be ground validated.

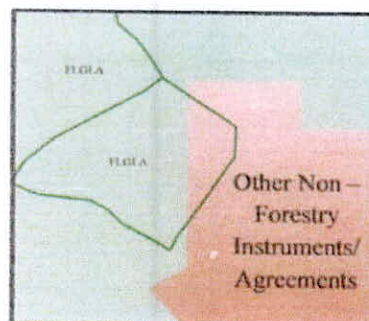
a. Assessment of Overlapping Tenure Issuances

Preliminary shapefiles of Forest Tenure shall be overlaid to harmonized forestland boundary, Topographic Maps and satellite imageries. Using this map overlay, an assessment in terms of plotting shall be done and categorized based on the following criteria:

➤ Forest Tenure Overlapping with Other Forest Tenure Agreements



➤ Forest Tenure Overlapping with Other Non – Forestry Instruments/ agreements



If portions of the tenured area overlap with alienable and disposable lands, its boundary shall automatically be adjusted to remove the overlapping portion and ensure the whole tenured area is within forestland.

b. Identification of Pre-determined Points

Corners of the existing or newly digitized shapefile of Forest Tenure shall be generated. Using the map overlay, all corners that fall on natural or man-made features which are easily recognizable on the ground shall be identified. These shall include, but not limited to, mouth of streams, junctions of rivers or creeks, boulders, mountain peaks, junction of roads and trails, boundary monuments (BLLM, MBM, BBM, PBM, Forest Zone corners) among others. A minimum of three (3) corners per forest tenure issuance shall be selected for validation. Generate the Northing and Easting of the pre-determined corners for reference during the ground validation.

c. Preparation of Preliminary Map

A preliminary map containing the map overlay and predetermined points shall be prepared. Sample format of the preliminary map is shown in Annex 1.

GROUND ASSESSMENT AND DELINEATION ACTIVITY

Step 5. Consultation with Authorized Representative of Tenure Holder

Upon written notice prior to the conduct of the field survey, the team shall conduct an interview with the tenure holder/POs using the prescribed interview form (Annex 3). This shall cover gathering of information regarding but not limited to the following:

- Knowledge on the Forest Tenure boundary including known corners with either stakes, permanent markers and natural features as reference;
- Extent, Species, time frame of planting/ development;
- Activities and project undertaken in the area; and
- Concerns or clarifications

Step 6. Field Survey

- a. **GPS Localization** - The survey team shall conduct Global Positioning System/ Global Navigation Satellite System (GNSS/GPS) instrument localization by occupying at least two (2) available established PRS 92 monument located within the area. At least 5 – 10 minutes GPS averaging/ observation on the PRS 92 monument. Team must have filled up the form provided by this technical bulletin in Annex 2. FMB has developed the Field Survey using the Handheld GPS Receiver as guide in the survey.
- b. **Ground Marking** - Using handheld GPS/GNSS, predetermined corners in the preliminary map shall be navigated. Actual coordinates of the corners shall be read, marked and saved.

In the event that the preliminary map prepared is different from the ground due to erroneous tie point, tie line and coordinates on the analog map, the known corner(s) and/or natural features depicted or mentioned on the analog map shall be the primary guide of the survey team. This adjustment can be applied as early as the interview of the tenure holder/POs is done.

Step 7. Preparation of Validated Forest Tenure Map

The lines/corners of Forest Tenure will be adjusted based on the results of the actual field validation. To guide the survey team on assessment, below are the corrective measures to consider: It should be noted that the corrective measures should apply only if the overlapping is actually happening on the ground.

Forest Tenure Overlapping to:	Corrective measures
a. Other forest tenure instrument	As stated in FMB TB 21, Respect the prior rights.
b. Other non-forestry instruments/ agreements (MPSA, PCBRMA, SAPA) and areas covered by proclamations, reservations, laws etc. (Protected Area, Military Reservations, CADT)	Areas covered by these non-forestry instruments/ agreements, and areas covered by proclamations, reservations, laws etc. shall be excluded if such instruments were approved prior to the Forest Tenure. Correspondingly, the composite team will submit a report with categorical recommendation on the matter

For maps with errors in technical description such as misplaced or missing tie point, even though data conversion was already done, **resurvey should be conducted.**

A validated map containing the ground validated, rectified and corrected boundaries shall be prepared. Sample format of the final map is shown in Annex 5.

POST GROUND ASSESSMENT ACTIVITY

Step 8. Exit Conference

After the conduct of field validation, the team must present its findings, observation and recommendations/results including the preliminary map, final map, and the agreements made during the conference.

The findings and agreements made by the team together with the tenure holder, and DENR field officers shall be reflected in "Review and Concurrence Form" (Annex 4). Review and Concurrence Form shall be signed by the team leader, Regional Office/ CENRO/ PENRO representative and tenure holder/ authorized representative.

Step 9. Final Map Approval and Report Submission

The composite team shall submit a report on every forest tenure validated to the CENRO/ PENRO which will be endorsed for the Regional Director. The report shall include the preliminary map (Annex 1), corrected technical descriptions, and duly signed forms (Annex 2 – 4) and Final Map/s (Annex 5).

The DENR Regional Director shall approve and sign the Final Map/s. The approved final map/s shall form part of the tenure agreement and copy thereof shall be submitted to the Forest Management Bureau.

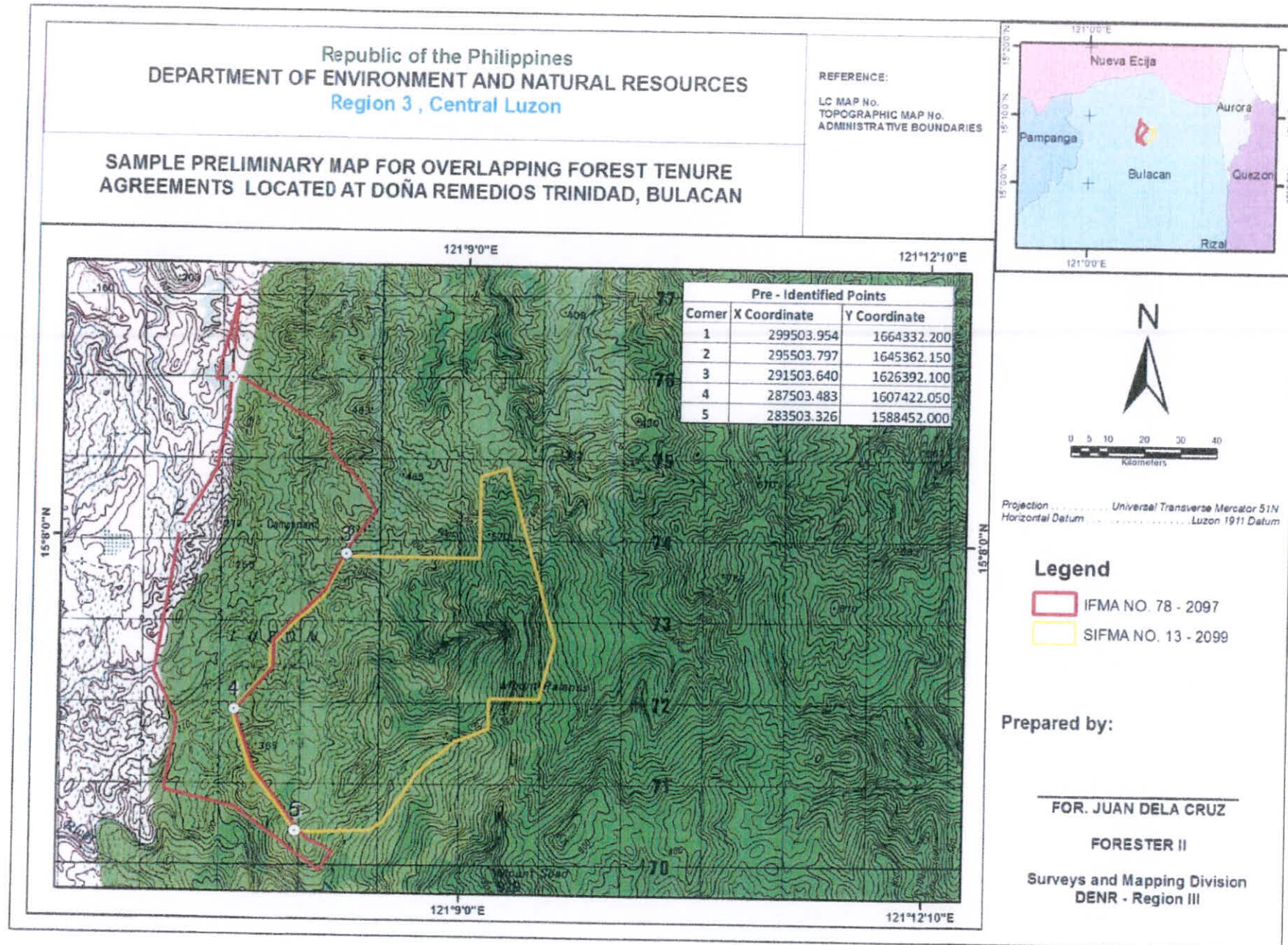
A final report shall be submitted by Regional Director/approving authority to the Secretary, through channels and copy furnished the FMB and Undersecretary for Field Operations. The report shall include the following:

- Updated list of tenure instruments per CENRO with the corrected area in hectares;
- Approved final maps of tenure instruments with technical descriptions tied to the nearest PRS 92; and
- Updated and rectified shapefiles of tenure instruments with WGS84 datum.
- Signed forms by the composite team with attachments.

FOR INFORMATION AND GUIDANCE.


NONITO M. TAMAYO, CESO IV

ANNEX 1 : SAMPLE FORMAT FOR PRELIMINARY MAP



GPS/ GNSS TESTING FORM

☐ Handheld ☐ Survey Grade Serial No : _____

Brand: _____ Model : _____

Date Tested: _____ Time tested : _____

Condition of instrument at the time of inspection: _____

HORIZONTAL / VERTICAL POSITION RECORD

Reference Monument: _____

Datum : ☐ WGS 84 ☐ LUZON 1911 ☐ PRS'92

UTM Grid Coordinates	Reference	Actual (meters)	Difference (meters)
NORTHING			
EASTING			
ELEVATION			

Note: Under ideal conditions, the acceptable difference between the coordinates of the reference monument and the unit reading should be within ± 15 meters for handheld units and ± 0.1 meters (fourth order accuracy), (positive negative) 0.02 meters (vertical accuracy) for Survey Grade units.

Test Result : ☐ PASS ☐ FAIL

Remarks : _____

This certifies that the above-mentioned instrument has been completely tested in accordance with the prescribed measuring order and actual readings have been compared with the existing GCP's. This unit shall be used for _____

(Name of Project)

In accordance with Travel Order No.: _____ Dated : _____

Tested by : _____
Team Leader

Member

Noted by : _____
Division Chief

Date

ANNEX 3

INTERVIEW FORM

BASIC INFORMATION

Type of Forest Tenure:

(e.g CBFMA, IFMA, FLAGT)

Area:

Ha.

Location:

Sitio: _____

Brgy: _____

Mun/City: _____

Provinces: _____

Tenure Holder/

PO Name:

Contact No.

Date Issued:

Date Expire:

DEVELOPMENT PLANS:

e.g.

CDMP, CRME, EVIOP, 25 & 5-Years

Mgt/OP, etc.

PROJECT/DEVELOPMENT
UNDERTAKEN

e.g.

NGP Area (ha) Year

CARP Area (ha) Year

no. of Infrastructures established

Others

BOUNDARIES/KNOWN
CORNERS

Established Monument: _____

Natural Boundary: _____

REVIEW AND CONCURRENCE FORM

Project Title:	Tenure A	Tenure B
Tenure Holder/Name of PO:		
Tenure Number:		
Date issued/approved:		
Date of expiration:		
Project Location:		
Tenured Area:		
Approved Area (ha.)		
Validated/Rectified Area (ha.)		
Date Validated:		
Date and Location of the Exit Conference:		
Composite Team Members:		

Findings/Issues	Recommendations	Agreements

**The findings/issues shall be incorporated in the final map based on the agreements*

CONCURRED BY:

Team Leader

Signature over printed name
Date:

Tenure Holder Representative

Signature over printed name
Date

DENR Representative

Signature over printed name
Date:

ANNEX 5 : SAMPLE FORMAT FOR FINAL MAP

