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DEC 08 2008

**DENR ADMINISTRATIVE ORDER  
NO. 2008- 24**

**SUBJECT: GUIDELINES FOR THE ASSESSMENT AND DELINEATION OF BOUNDARIES BETWEEN FORESTLANDS, NATIONAL PARKS AND AGRICULTURAL LANDS**

Pursuant to the provisions of Section 4, Article XII of the 1987 Philippine Constitution, Executive Order No. 192, Republic Act No. 3092, Republic Act No. 7586 and Presidential Decree No. 705, as amended, Executive Order No. 318, DENR Administrative Order No. 2000-24 and other pertinent laws, rules and regulations, the following guidelines and procedures are hereby prescribed for the guidance and compliance of all concerned.

**ARTICLE I  
GENERAL PROVISIONS**

**Section 1. Basic Policy.** It is the policy of the State to ensure protection and sustainable development of forestlands, national parks and the resources therein, as well as to accelerate the disposition and adjudication of agricultural lands. Consistent with this policy, the government shall undertake the assessment and delineation of boundaries between forestlands, national parks and agricultural lands.

**Section 2. Objective.** This Order seeks to provide the guidelines for the assessment, and delineation of boundaries between forestlands, national parks and agricultural lands.

**Section 3. Coverage.** This Order shall cover the technical and administrative mechanisms for the assessment, validation and delineation of boundaries between forestlands, national parks under the National Integrated Protected Areas System (NIPAS), and agricultural lands.

**Section 4. Definition of Terms.** The following terms as used in these guidelines shall be defined as follows:

- a) Agricultural lands – refer to alienable and disposable lands<sup>1</sup> of the public domain which have been the subject of the land classification system and declared as not needed for forest purposes.
- b) Boundary maps – are cartographic representation of the land surface showing among others, lines depicting the borders between different classifications of

<sup>1</sup> As defined in Sec. 3(c), Presidential Decree (PD) 705

such land, the geographic and/or grid references, and the technical descriptions of such lines and related references.

- c) Delimitation survey - refers to the establishment of land classification boundaries, and the monumenting thereof, through ground survey.
- d) Delineation - the conduct of site investigation, field reconnaissance and assessment, and staking of boundaries between forestlands, national parks and agricultural lands, verified in the field in accordance with the criteria set forth under this Order.
- e) Forestlands<sup>2</sup> – includes the public forest<sup>3</sup>, the permanent forest or forest reserves<sup>4</sup>, and forest reservations<sup>5</sup>.
- f) Indicative map – a map indicating the land classification (LC) lines surveyed during the previous land classification work<sup>6</sup> as shown in existing official Land Classification Maps, and proposed amended boundaries, if there be any.
- 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) Land Classification Map – a map showing the classification of lands of the public domain based on the land classification system undertaken by the then Department of Agriculture and Natural Resources, through the Bureau of Forestry, the Ministry of Natural Resources, through the Bureau of Forest Development, and the Department of Environment and Natural Resources<sup>7</sup>.
- i) Map conversion – the process of transforming spatial information indicated on maps to digital format in order to organize these information into GIS-compatible datasets.
- j) Protected area (PA) - refers to identified portions of land and/or water set aside by reason of their unique physical and biological significance, managed to enhance biological diversity and protected against destructive human exploitation.
- k) Progress Map – map showing the current and cumulative extent of areas assessed and surveyed pursuant to this Order.
- l) Public Forest – the mass of lands of the public domain which has not been the subject of the present system of classification for the determination of which lands are needed for forest purposes and which are not<sup>8</sup>.

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<sup>2</sup> PD 705, Sec. 3(d)

<sup>3</sup> PD 705, Sec. 3(a)

<sup>4</sup> PD 705, Sec. 3(b)

<sup>5</sup> PD 705, Sec. 3(g)

<sup>6</sup> PD 705, Sec. 13

<sup>7</sup> PD 705, Sec. 13

<sup>8</sup> PD 705, Sec. 3(a)

- m) Watershed - is a land area drained by a stream or fixed body of water and its tributaries having a common outlet for surface run-off<sup>9</sup>

## ARTICLE II ADMINISTRATIVE PROVISIONS

**Section 5. Organizational Structure.** To provide guidance and to ensure the effective and efficient implementation in the assessment and delineation of boundaries of forestlands, national parks, and agricultural lands, the following committees and working groups shall be organized, the functional structure shown in **Annex A** hereof.

a) National Assessment and Delineation Committee (NADC)

Chairperson	:	Undersecretary for Field Operations
Vice Chairperson	:	Undersecretary for Policy and Planning
Members	:	All Undersecretaries Administrator, NAMRIA All Bureau Directors

The NADC shall set the policy directions in the implementation of the assessment and boundary delineation activities. It shall conduct regular meetings to assess progress of work and endorse survey results and propose bills to the Secretary for submission to Congress for the enactment of laws pertaining to the final boundaries. In addition, the NADC shall perform the following functions:

- 1) Evaluate and endorse to the Secretary all draft bills and the corresponding Forestlands, National Parks and Agricultural Lands Boundary Maps (FNPABM) and the technical descriptions, for endorsement to Congress;
- 2) Recommend policies and procedural guidelines to accelerate and effectively carry out the delineation and assessment of boundaries;
- 3) Ensure that outputs and results of the delineation and assessment work are integrated in the over-all ENR planning process.
- 4) Perform other functions that may be assigned by the Secretary.

b) NADC Technical Working Group (NADC TWG)

Chairperson	:	Director, Forest Management Bureau
Vice-Chairperson	:	Director, RSRDAD, NAMRIA
Members	:	Bureaus' representatives (at least division chief level), representatives of the Legal Service, Planning and Policy and Legislative Affairs Office
Secretariat	:	FMB and NAMRIA technical staff

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<sup>9</sup> PD 705 Sec. 3(m)

The NADC TWG shall have the following functions and responsibilities:

- 1) Prescribe technical standards to field teams in the preparation of indicative maps, prepare LC index maps and national map inventory sheets;
- 2) Review maps and other documents, including draft legislative bills submitted by the RADCs for endorsement to the NADC;
- 3) Assist in planning and target-setting based on existing resources and priorities;
- 4) Organize and provide technical support in the conduct of appropriate training programs, preparation of training materials, data analysis, monitoring of program implementation, and formulation of policies and procedures on delineation and assessment;
- 5) Assure conformance to quality standards of the delineation and assessment work, the conduct of periodic performance monitoring, including field validation as deemed necessary;
- 6) Formulate recommendations to resolve operational problems pertaining to special field conditions on the request of the RADCs;
- 7) Manage records, survey returns, maps, draft bills and other pertinent documents, and disseminate said documents as appropriate;
- 8) Submit periodic progress reports to the NADC and the DENR Secretary;
- 9) Undertake other related activities and functions that may be assigned.

c) Regional Assessment and Delineation Committees (RADC)

- Chairperson : Regional Executive Director  
Members : Regional Technical Directors and Regional Directors, Chief of Legal, Chief of Planning, PENROs and CENROs concerned, RADT coordinators, and in the case of Palawan, representative of the Palawan Council for Sustainable Development (PCSD)
- Secretariat : Land Evaluation Party (LEP) team leaders, Regional FIS and GIS staff, Forest Resources Development Division and Forest Resources Conservation Division Chiefs

The RADC shall review, assess, recommend and promulgate the operational policies at their respective regions, formulate an operations plan and supervise the implementation of the assessment and delineation activities in the region. The RADC shall mobilize appropriate staff and existing resources from DENR units in the region to develop a Regional Land Classification Information System (LCIS) to manage the data and information generated by the RADTs.

✈

The RADC may organize a Regional Technical Working Group, to be staffed by appropriate staff from the different units of DENR in the regional office, to assist it in overseeing and administering the work in the whole region.

The RADC shall be responsible for the drafting of proposed bills declaring the final boundaries.

d) **Regional Assessment and Delineation Teams (RADT)**

The RADC shall organize such number of Regional Assessment and Delineation Teams as it deems necessary. It shall likewise designate the Regional LEP coordinator as the RADT Coordinator.

Each RADT shall be composed of at least the following:

- Forester (Team Leader)
- Crew Members (2 Foresters or technical personnel of appropriate training and qualification) and Survey Aides (at most 5)

The Team shall be supported by the GIS Unit and the FIS Team of the Regional Offices.

The RADTs shall have the following functions:

- 1) Gather the necessary data, inventory, compile and integrate available reference maps, textual and tabular information needed for the assessment and delineation of boundaries of forestlands, national parks and agricultural lands;
- 2) Generate indicative maps, progress maps, boundary maps, control maps;
- 3) Conduct field assessment, surveys and related work in furtherance of the delineation and assessment work;
- 4) Coordinate with identified groups that have interests at stake in the delineation and assessment work in any area;
- 5) Prepare the requisite documentation and reports as required by the delineation and assessment process; and
- 6) Undertake related activities that may be assigned by RADC.

The RADC is authorized to instruct the following DENR units or staff to support the work of the RADTs as may be necessary:

- Geodetic Engineer(s) from any unit of the Department within the region
- Representative of the CENRO within whose area of responsibility the delineation and assessment work are currently being undertaken
- Representative(s) from the Regional Public Affairs Office
- Representative(s) from the Regional Forest Resource Assessment (FRA) Team
- Cartographer(s) from any unit of the Department within the region
- Applications software developers and data encoders from any unit of the Department within the region



The RADC may call on representatives of the following as and when necessary:

- Representative(s) from the provincial and municipal governments within whose administrative jurisdiction the delineation and assessment work are currently being undertaken
- Representative(s) from the Regional Office of the National Commission on Indigenous Peoples
- Representatives of other appropriate organizations or individuals who may serve as resource person(s)

### **ARTICLE III DATA GENERATION AND MANAGEMENT**

**Section 6. Data Gathering and Compilation.** All available reference maps and other relevant information shall be gathered, compiled and integrated, within 120 calendar days upon issuance of this Order by the Regional Assessment and Delineation Committee (RADC), and the National Assessment and Delineation Committee Technical Working Group (NADC TWG), as herein created. These data shall include all available tabular/textual data and relevant maps on forest cover, slope, photographic/image maps, soil, ancestral domains/lands, topographic maps, National Parks/NIPAS Maps, land use, geohazard, settlements, infrastructure, proposed agricultural areas (A & D) within unclassified public lands, projection maps per DAO 2000-45, cadastral/administrative maps (including provincial and municipal index maps), isolated survey plans, titled properties, patented/subsisting public land applications, land classification (LC) maps archived at the mentioned offices, maps of Certificate of Land Ownership Award (CLOA)/titles issued by DAR and other maps showing the significant natural and man-made features. Survey returns, results of natural resource inventories, sub-classification and inventory of agricultural lands (per DAO 1990-55) and inventory and re-examination of reservations (per DAO 1990-47), and existing Land Data Record Sheets (LDRS as prescribed under LOC No. 131) shall likewise be collected and compiled accordingly.

The collection and compilation of other textual data or maps not mentioned above but are available at the central office of national government agencies shall be the responsibility of the NADC TWG.

For proper identification and accounting purposes, LC inventory sheets shall be prepared by NAMRIA, in collaboration with the Regional Assessment and Delineation Team (RADT) following the tabular format shown in **Annex B**. The table shall indicate the location, area, status of LC survey (completed/ongoing), dates of approvals or endorsements for approval, and other relevant technical reports and details. The outputs of such inventory shall be forwarded to the NADC TWG for proper documentation and recording purposes.

The results of latest satellite imagery analysis by NAMRIA shall be made available to RADTs. The NADC TWG shall initiate the development of an algorithm for land

use suitability to serve as guide for decisions in recommending the final land uses of areas subjected to the delineation and assessment work. The 1:50,000-scale topographic maps shall be used as the standard base map. The database framework recommended in the LAMP Forestland Boundary Delineation Policy Study shall be evaluated and used as an initial framework to develop the national forestland database.

**Section 7. Missing , Worn-out or Damaged LC Maps and Other Relevant Data.**

The NADC TWG shall exert its best effort to locate missing LC maps or reconstruct the same using available data. Information about LC maps that are either lost or cannot be reconstructed shall be published in two newspapers of general circulation for two consecutive weeks. If no information about the said LC maps is received within 30 calendar days upon publication, the same shall be officially declared null and void. The affected LC Blocks shall then be resurveyed by the RADT in accordance with existing guidelines. The output shall be submitted to NAMRIA for evaluation and thereafter, to NADC, for approval.

Damaged or worn out LC maps shall be reconstructed and/or retraced and certified by NAMRIA using available data and following accepted cartographic standards.

All tabular/textual data and maps mentioned in Section 7 hereof shall be properly forwarded by the RADCs to the NADC TWG for proper evaluation.

**Section 8. Indexing and Integration.** The NADC TWG shall generate index maps (national, regional and provincial) showing the coverage of all LC maps and relevant details indicated therein. All LC maps, tabular or textual data and other related spatial information that were previously indexed and compiled by the DENR field offices under DAO 2000-24 shall be forwarded to the NADC TWG, through the RADC, for proper integration. The integration of maps shall be made consistent with the Philippine Reference System of 1992 (PRS92). The necessary geo-referencing of the different data sets shall be undertaken for consistency using the standard topographic base maps. GIS techniques shall be used in the integration and analysis of different tabular or textual and other related spatial information.

#### **ARTICLE IV INDICATIVE MAP**

**Section 9. Indicative Map.** Based on the results of the GIS integration of the different maps, textual data and other data that can be used in analysis, the Indicative Map shall be generated by the RADC and submitted to the NADC TWG for verification and evaluation. This indicative map shall indicate the preliminary boundary lines of the area based on the technical descriptions of the LC map and proposed forestland boundaries. No point(s) shall be omitted or LC lines be simplified during the process. The Indicative Map and the derived coordinates of corner and control points shall serve as the guide of the RADT during the conduct of field assessment.

The Indicative Map shall be generated following the process flow illustrated in **Annex C** and accepted mapping procedures and standards. The following are the steps in the generation of the Indicative Map:

- a) **LC Base Map Preparation (Replotting)** - The replotting of land classification lines and corners shall be carried out using the manual or digital process, see **Annexes D (manual) and D-1 (digital)**.
- b) **Extraction of Topographic Feature** – This shall include: (a) digitizing rivers and roads following standard guidelines as set under DAO No. 2006-12 (Guidelines on the Development and Management of a Standard Seamless National Digital Topographic Database); and (b) generation of the slope map (see **Annex E**).
- c) **Photographic or Satellite Image Processing** - Aerial photographs and satellite data shall be used to derive land cover information. If these are not available, existing land use and land cover maps may be utilized. This step shall be complemented by field validation surveys or ground-truthing by field offices. (See **Annexes F and F-1**)
- d) **Integration of ENR and Other Datasets** - Other relevant datasets such as maps and textual information which depict regulatory, settlement areas and other details of mineral, hydrologic, socio-cultural, biodiversity conservation, tourism and recreational, productive and protective values of a particular LC block or Project area shall be analyzed prior to integration into the Indicative Map.

## **ARTICLE V FORESTLAND ASSESSMENT AND DELINEATION**

**Section 10. Preliminary Forestland Assessment** – Using secondary data, an assessment shall be undertaken to determine the preliminary boundaries of the forestland, as overlaid in the Indicative Map. The assessment shall be guided by the following parameters:

- a) Sections 15 and 16 of PD No. 705, as amended (**ANNEX G**);
- b) Geohazards areas;
- c) Socio-cultural and heritage areas; and
- d) Built-up areas.

For the assessment of the whole forestland, secondary data must be secured. Preliminary boundaries of areas proposed for release as alienable and disposable or reversion to forestland shall also be determined.

**Section 11. Field Assessment** – The RADT shall conduct field assessment along the existing LC lines, at least 500 meters on both sides of the line.

The assessment shall be undertaken by the RADT to locate the points of the preliminary boundaries as determined in the Indicative Map, place stakes and corner markers (PVC orange-colored pipe with cement, 5 centimeters diameter by 1 meter in height, with specifications shown in **Annex H**), sketch the subject area, and locate witness corners such as important natural and man-made features. The positions of



corner markers shall be observed and recorded using precalibrated hand-held Global Positioning System (GPS) receivers. Areas where field assessment cannot be undertaken, for valid reasons, shall be properly noted, located (with map coordinates), described and sketched by the RADT in the Indicative Map and the corresponding field notes.

The boundaries of protected areas under declared under NIPAS shall be indicated in all maps used and generated under this Order.

For areas delineated under DAO No. 2000-24, these shall be subjected to assessment along the boundary lines and marked on the ground pursuant to this Order.

**Section 12. Preparation and Submission of Reports.** The RADTs shall prepare and submit a Consolidated Monthly Field Assessment Report to the RADC using the prescribed form in **Annex I**. A consolidated quarterly accomplishment report shall be submitted by RADC to NADC-TWG. It shall include a Progress Map which bears the original and validated LC lines (layout to be prescribed by NAMRIA).

Reporting shall be done in the following manner:

- 1) Using the same form, the RADC shall consolidate the regional reports and submit it to the NADC through the NADC TWG.
- 2) Corresponding maps, sketches, photos, survey returns, and other important reference documents shall accompany the report.
- 3) Submission of report shall be done as follows:
  - a) RADT report to the RADC, every end of the month;
  - b) RADCs report to the NADC through the NADC TWG, every 15<sup>th</sup> day of the month; and
  - c) The NADC TWG shall make an assessment of the report and present it to the NADC during its regular meetings.

**Section 13. Synchronization of Activities.** All ROs, PENROs, and CENROs and other units of the Department and attached agencies are enjoined to synchronize all cross-sectoral activities related to the Program.

**Section 14. Information, Education and Communication (IEC) Campaign.** The NADC TWG, in coordination with the Public Affairs Office and other concerned DENR units, shall develop and implement an IEC Program, to include training modules, brochures, primers, briefing kits and other information materials on Forest Boundary Assessment and Delineation. The RADC shall conduct a massive campaign through the Regional Public Affairs Offices (RPAO) giving emphasis on the objectives, importance, outcomes, and benefits that will be derived from the activity. The campaign shall reach out to the grassroots level and shall be closely coordinated with other government agencies and instrumentalities. The RADT as well as other DENR Field Units concerned shall seek assistance from the local officials in the pursuit of a successful IEC campaign.

**Section 15. Coordination with Stakeholders.** Coordination with stakeholders shall be undertaken prior to the conduct of the activities and after completion of the

activities. The persons-in-charge of the coordination are the PENR/CENR Officer and RADT representatives.

The RADT in coordination with the PENRO/CENRO shall inform and discuss with the concerned LGU the purpose, objectives, procedures and schedules of the assessment and delineation activities, including the roles of LGUs and other stakeholders.

All activities shall be closely coordinated with other agencies concerned such as but not limited to the National Commission on Indigenous Peoples (NCIP), Department of Agriculture (DA), Department of Agrarian Reform (DAR) Local Government Units (LGUs), and Department of Interior and Local Government (DILG).

**Section 16. Preparation of the Draft Bill.** Based on the result of the assessment the RADC shall prepare the draft bill, together with the Forestland, National Parks, Agricultural Land Boundary Map (FNPABM) and submit the same to the NADC through the NADC TWG, for review and evaluation and for endorsement to the Secretary. The Secretary shall endorse the draft bill to the Representative/s concerned of the province for his/her sponsorship in Congress.

**Section 17. Demarcation and Delimitation Survey.** After the legislation for the assessment of boundaries of each province shall have been passed by Congress, DENR and the local government units shall establish the permanent boundary monuments on the ground and delimit the boundary of the forestlands, national parks, and agricultural lands, in accordance with existing survey standards and practices.

## **ARTICLE VI INSTITUTIONAL MECHANISM**

**Section 18. Capability-Building.** The DENR shall pursue a Department-wide Orientation/Re-orientation and capability-building for the effective implementation of this Order. These activities shall involve the RADT members, RADT coordinators, REDs, RTDs, PENRO, CENRO, Regional Planning Officers, among others.

## **ARTICLE VII MISCELLANEOUS PROVISIONS**

**Section 19. Appropriations.** Funding requirements for the conduct of the forestland assessment and delineation activities; capability-building; IEC; consultations; technical assistance to public hearings; operations of the NADC, NADC TWG, RADC & RADT shall be included in the regular budgetary allocation of the Department, particularly on forest boundary delineation budget. Additional funds may be sourced from other funding institutions.

**Section 20. Unclassified Lands of the Public Domain.** This Order shall also cover the survey of unclassified public lands with the assistance of NAMRIA. The results of original land classification surveys shall, however, be submitted to NADC TWG for evaluation and subsequent endorsement to the Secretary for approval.

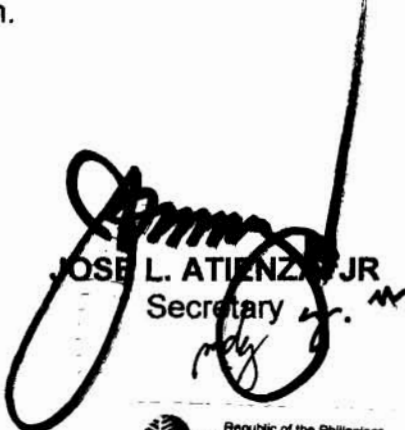
**Section 21. Certification of Status of Lands of the Public Domain Within a Province.** Upon the passage of the law defining the final boundary of the forestlands within a province, the same shall be the basis for the issuance of certifications of legal status of the land. It shall form part of the control maps and records for all public land applications filed before the Department.



Pending the enactment of the appropriate law, the DENR can still issue certifications of legal status using existing land classification maps.

**Section 22. Field Manual.** The Field Manual shall be prepared and issued by the NADC TWG 60 days after approval of this Order. The NADC TWG Chair is hereby authorized to issue amendments and modifications of the Field Manual.

**Section 23. Repealing Clause.** This Order amends and/or supersedes all existing DENR guidelines, instructions, rules or regulations contrary hereto.

**Section 24. Effectivity.** This Order shall take effect upon acknowledgement of the Office of the National Administrative Register (ONAR), and fifteen (15) days after its publication in a newspaper of general circulation.

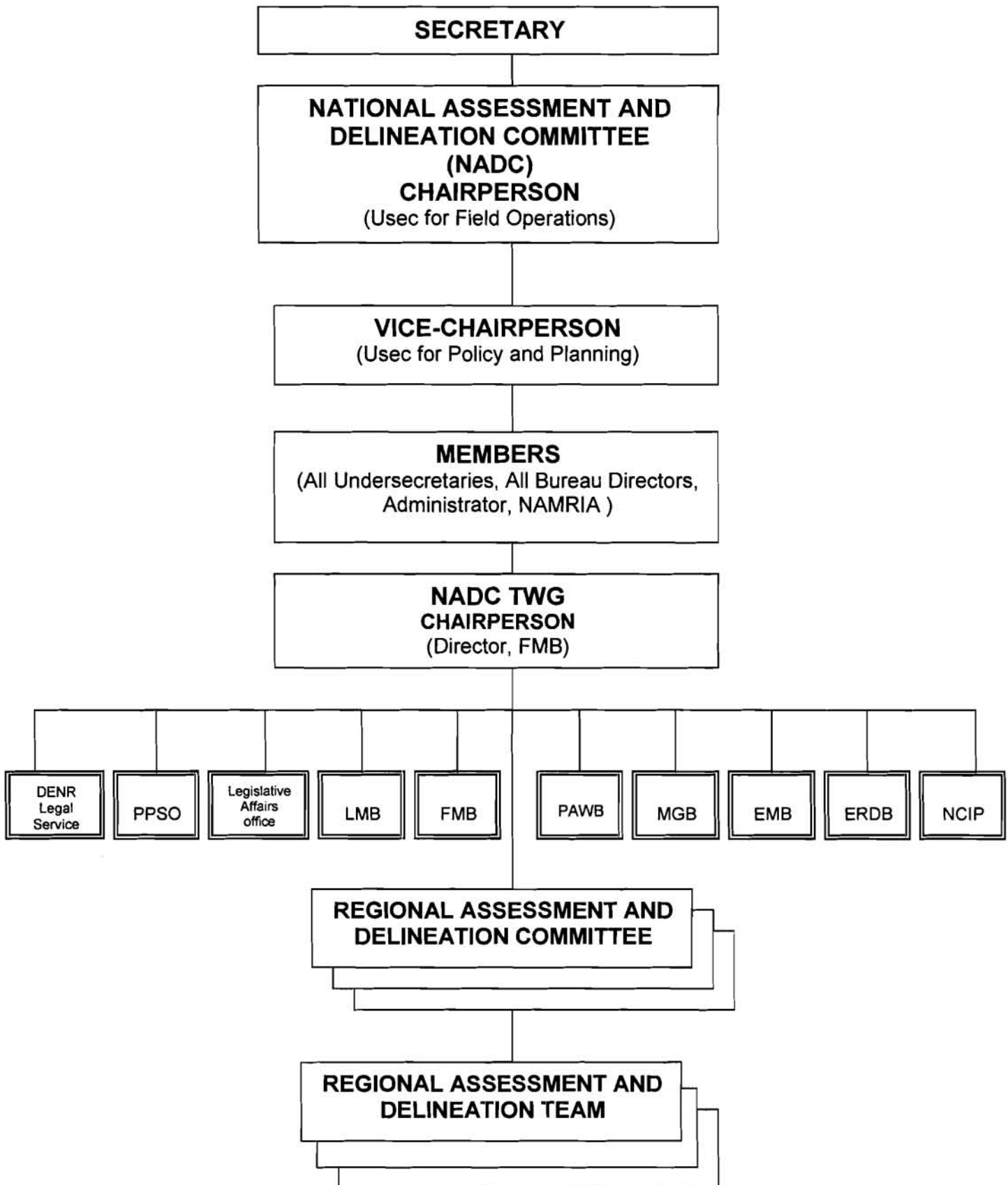
  
JOSE L. ATIENZA JR  
Secretary

 Republic of the Philippines  
DEPARTMENT OF ENVIRONMENT  
AND NATURAL RESOURCES  
IN REPLYING, PLEASE CITE:  
**SENR-017746**  


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December 16, 2008

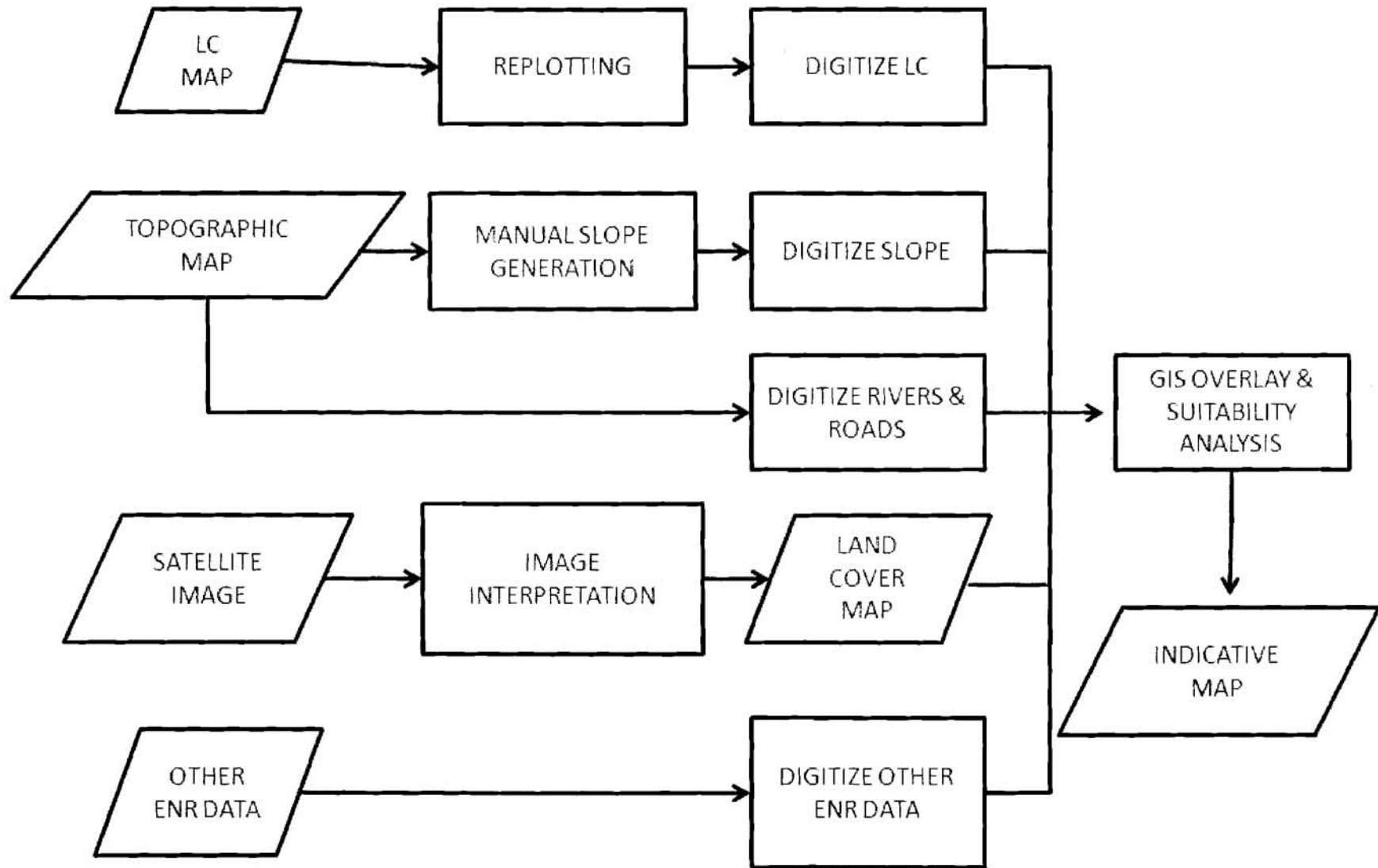
## OVERALL ORGANIZATIONAL STRUCTURE



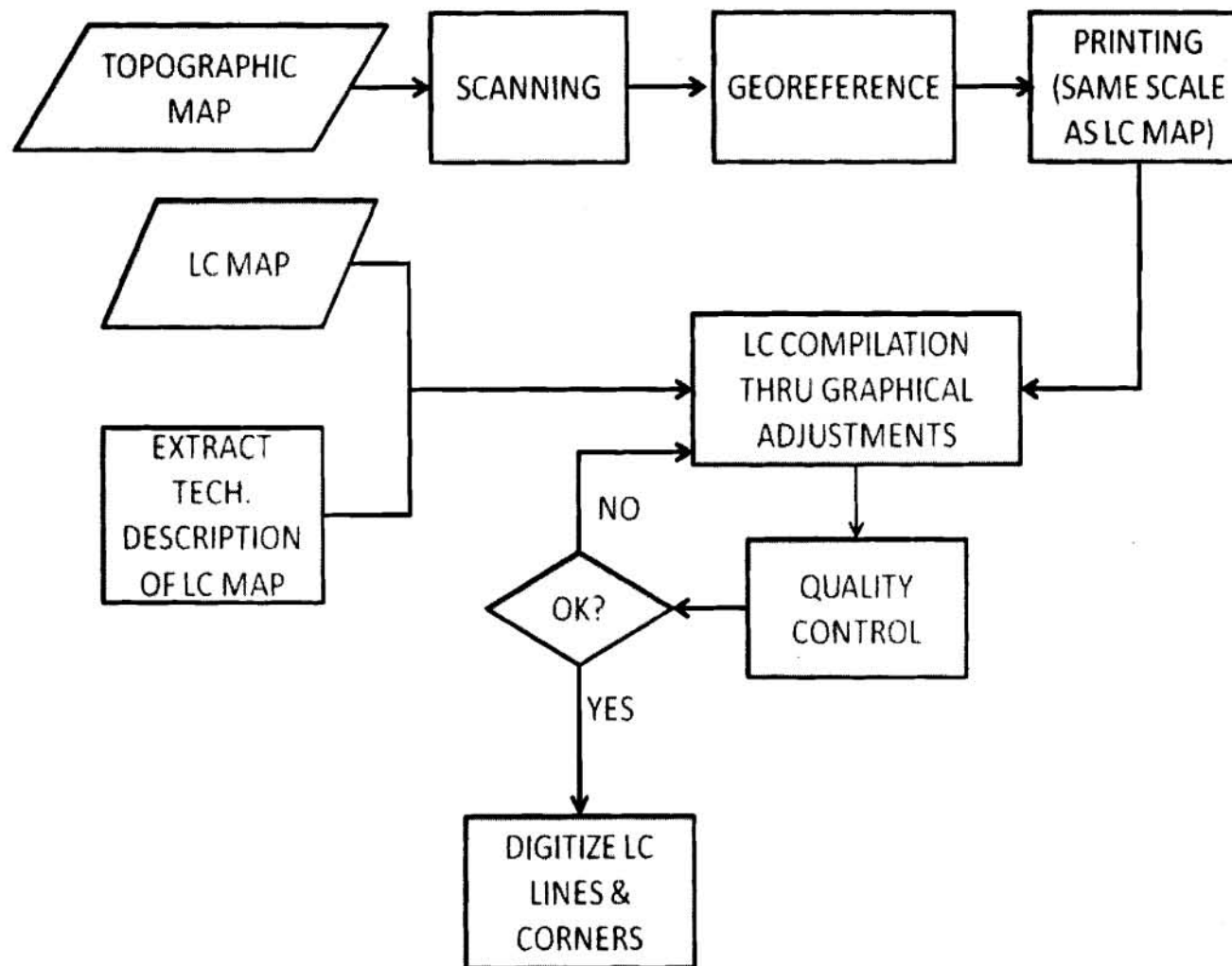




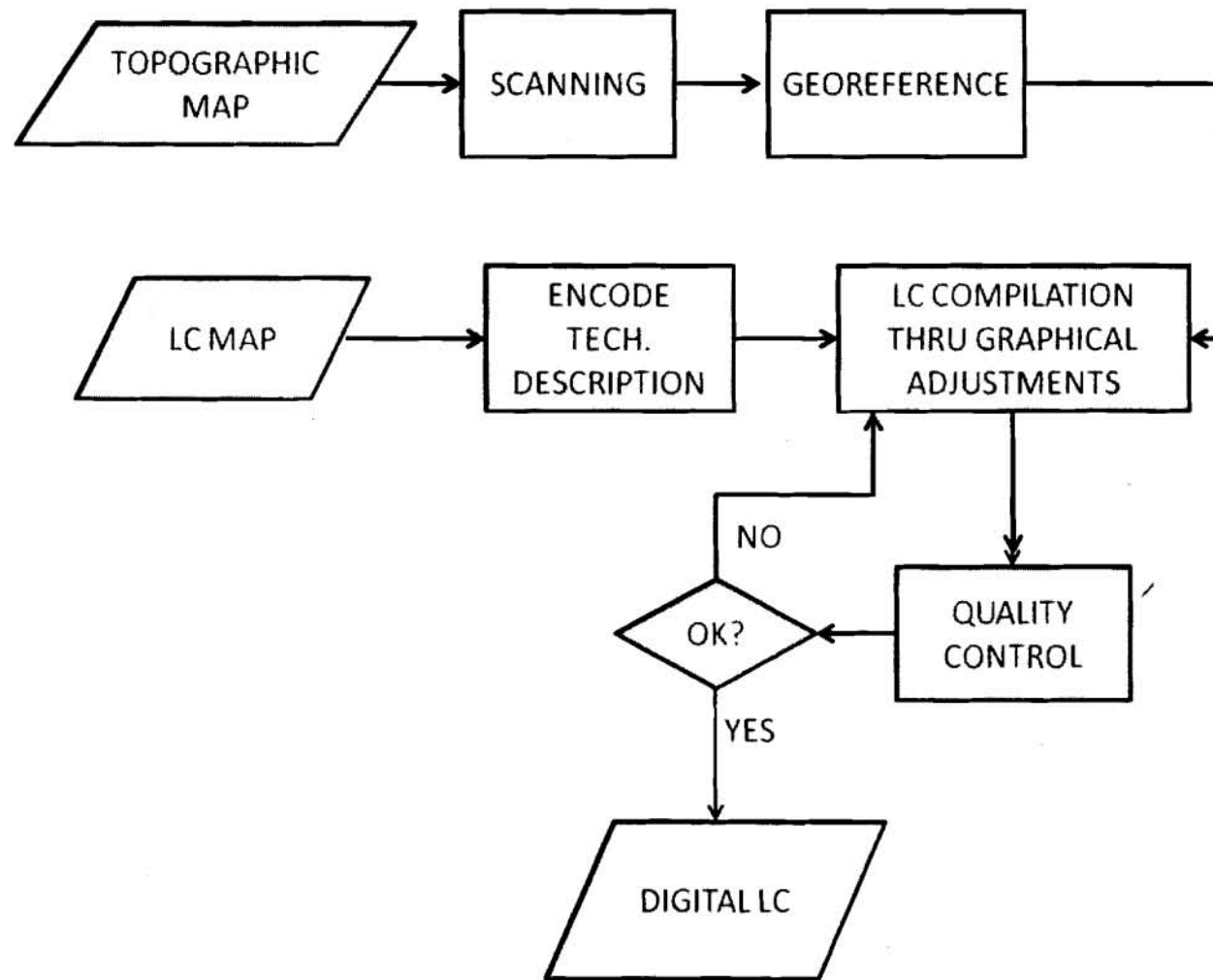
## PROCESS FLOW IN GENERATING THE INDICATIVE MAP



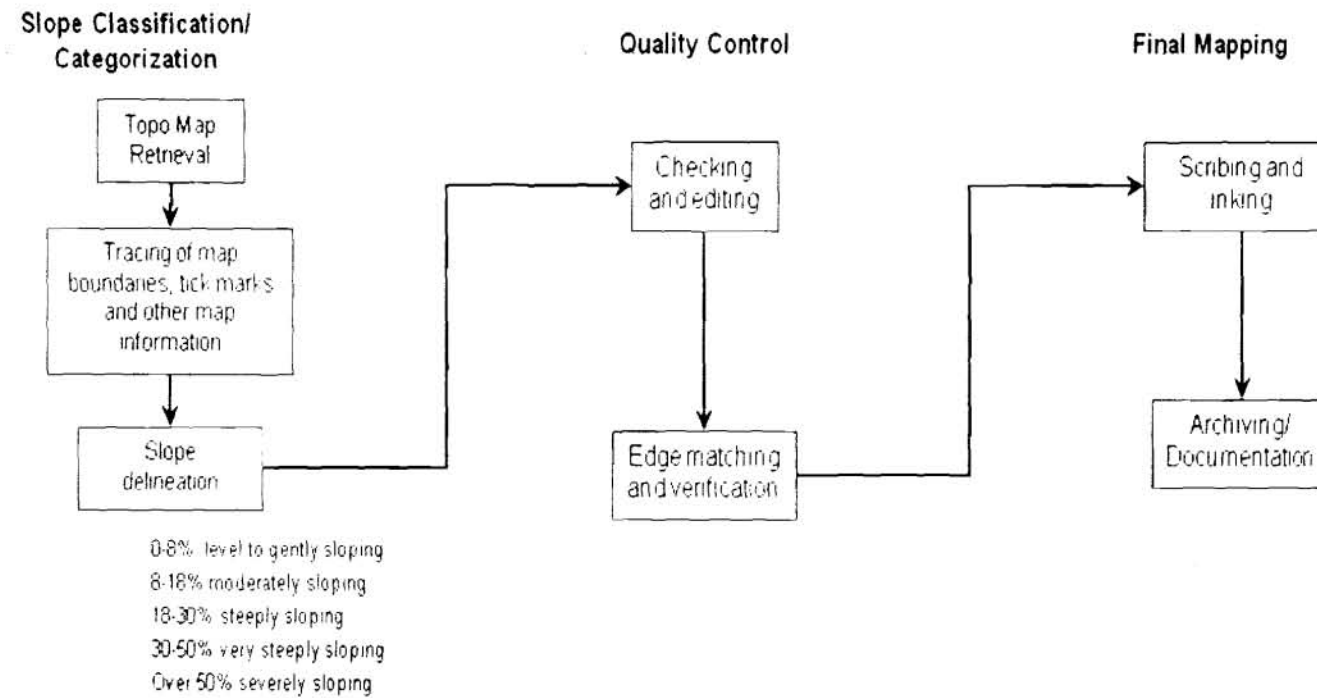
## LC BASE MAP PREPARATION (REPLOTTING- MANUAL)



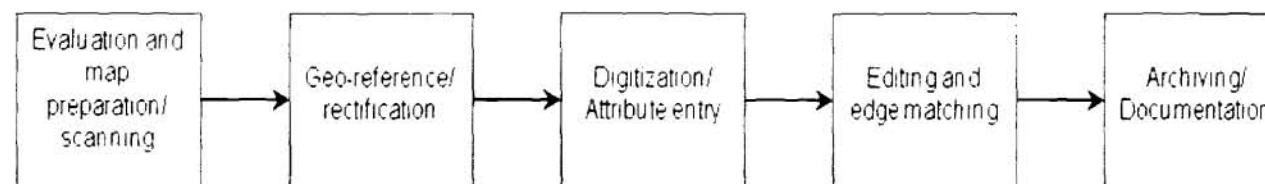
LC BASE MAP PREPARATION (REPLOTTING- DIGITAL)



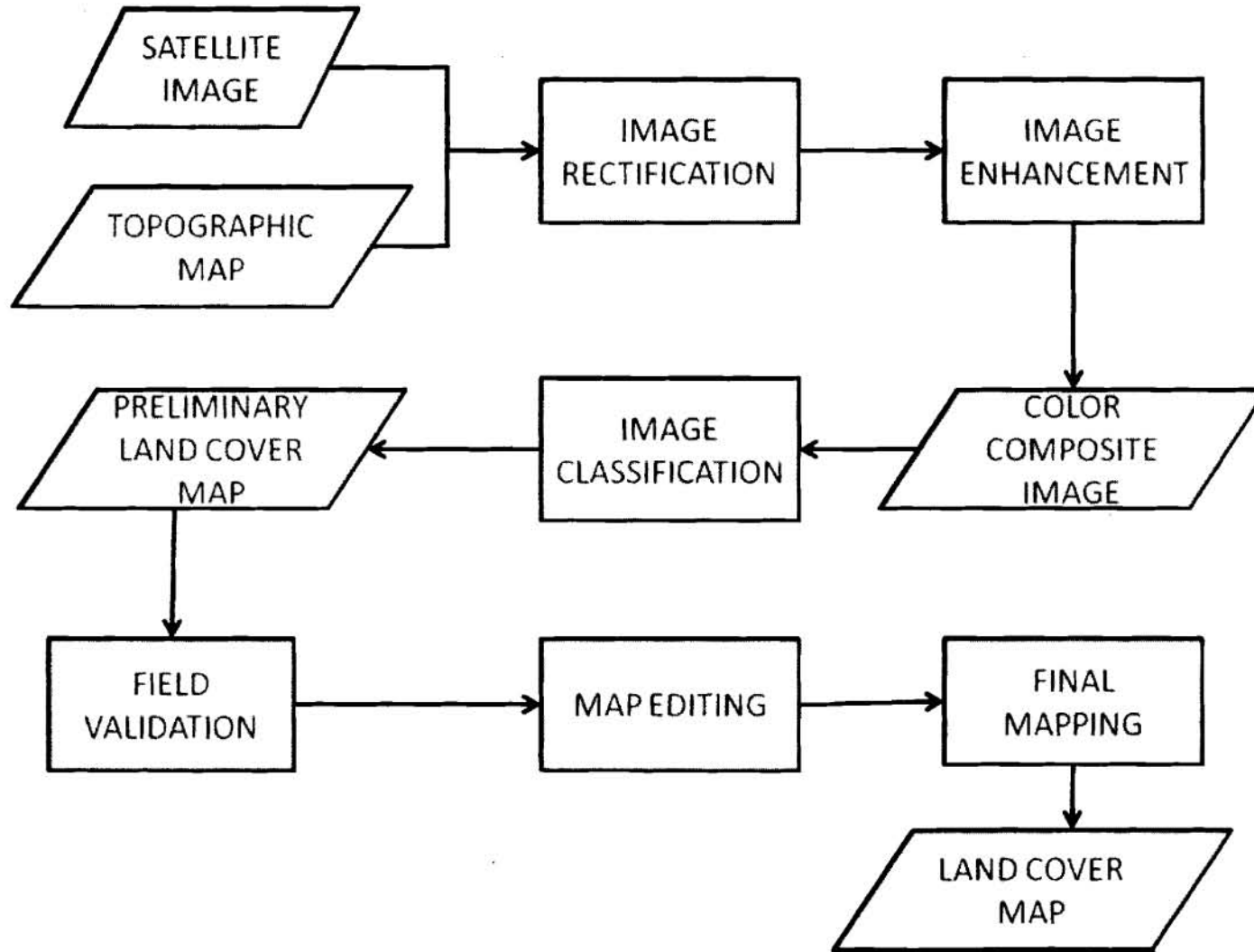
## GENERATION OF SLOPE MAP



## CONVERSION TO DIGITAL FORMAT

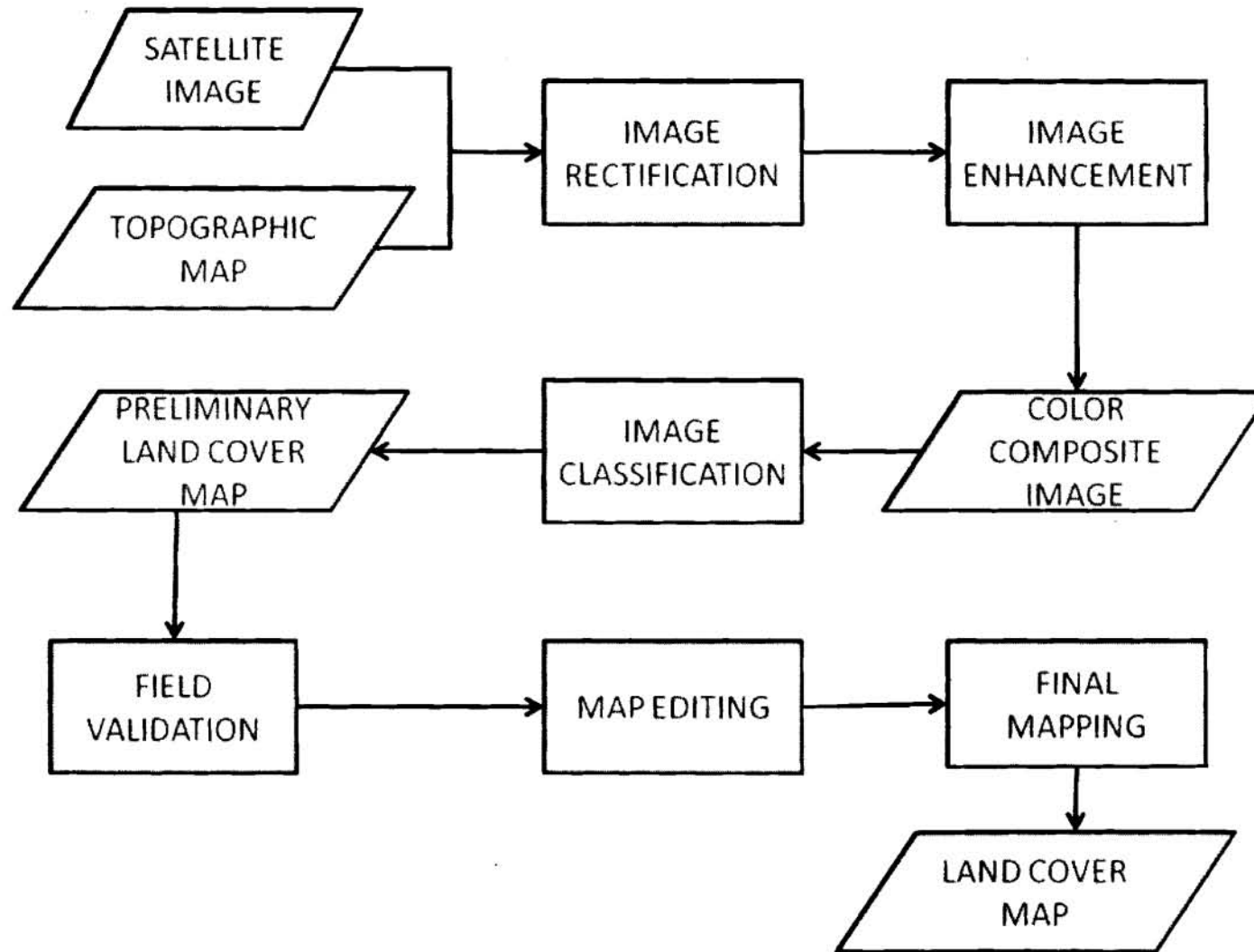


PHOTOGRAPHIC/IMAGE PROCESSING





## PHOTOGRAPHIC/IMAGE PROCESSING



## STANDARD LAND COVER CLASSIFICATION

LEVEL 1	LEVEL 2	LEVEL 3	CLASSIFICATION
Natural Forest	Broadleaved	Closed Canopy	Closed forest, broadleaved
		Open Canopy	Open forest, broadleaved
	Mixed	Closed Canopy	Closed forest, mixed
		Open Canopy	Open forest, mixed
	Coniferous	Closed Canopy	Closed forest, coniferous
		Open Canopy	Open forest, coniferous
	Mangrove	Mangrove	Mangrove, natural
			Nipa, natural
	Bamboo		Bamboo, natural
	Plantation Forest		Broadleaved
Coniferous			Forest Plantation, coniferous
Mangrove			Forest Plantation, mangrove
Bamboo			Forest Plantation, bamboo
Non-forest	Other wooded land	Shrubs	Other wooded land, shrubs
		Wooded grassland	Other wooded land, wooded grassland
		Fallow	Other wooded land, fallow
	Other land, natural	Grassland	Other land, grassland
		Marshland	Other land, marsh
		Swamp	Other land, swamp
		Barren	Other land, barren
		Scrub	Scrub
	Other land, cultivated	Annual crops	Corn land
			Riceland
			Sugar cane
			Livestock Farms
			Other crops
		Perennial crops	Coconut plantation
			Coconut with trees
Coconut with annual crops			
Vineyard			
Citrus plantation			
Other fruits			
Pasture	Pasture		
Built-up	Built-up	Built-up	
Inland Water	Inland Water	Inland Water	Saltbeds
			Fishpond
			Prawn Farms
			Inland Water

**SECTIONS 15 AND 16 OF PRESIDENTIAL DECREE NO. 705,  
AS AMENDED****Section 15  
Topography**

No land of the public domain eighteen per cent (18%) in slope or over shall be classified as alienable and disposable, nor any forest land fifty per cent (50%) in slope or over, as grazing land.

Lands eighteen percent (18%) in slope or over which have already been declared as alienable and disposable shall be reverted to the classification of forest lands by the Department Head, to form part of the forest reserves, unless they are already covered by existing titles approved public land application, or actually occupied openly, continuously, adversely and publicly for a period of not less than thirty (30) years as of the effectivity of this Code, where the occupant is qualified for a free patent under the Public Land Act: Provided, That said lands, which are not yet part of a well-established communities, shall be kept in a vegetative condition sufficient to prevent erosion and adverse effects on the lowlands and streams: Provided, further, That when public interest so requires, steps shall be taken to expropriate, cancel defective titles, reject public land application, or eject occupants thereof.

**Section 16  
Areas Needed for Forest Purposes**

The following lands, even if they are below eighteen percent (18%) in slope, are needed for forest purposes, and may not, therefore, be classified as alienable and disposable land, to wit:

1. Areas less than 250 hectares which are far from, or are not contiguous with any certified alienable and disposable land;
2. Isolated patches of forest of at least five (5) hectares with rocky terrain, or which protect a spring for communal use;
3. Areas which have already been reforested;
4. Areas within forest concessions which are timbered or have good residual stocking to support an existing, or approved to be established, wood processing plant;
5. Ridge tops and plateaus regardless of size found within, or surrounded wholly or partly by, forest lands where headwaters emanate;
6. Appropriately located road-rights-of-way;

7. Twenty-meter strips of land along the edge of the normal high waterline of rivers and streams with channels of at least five (5) meters wide;

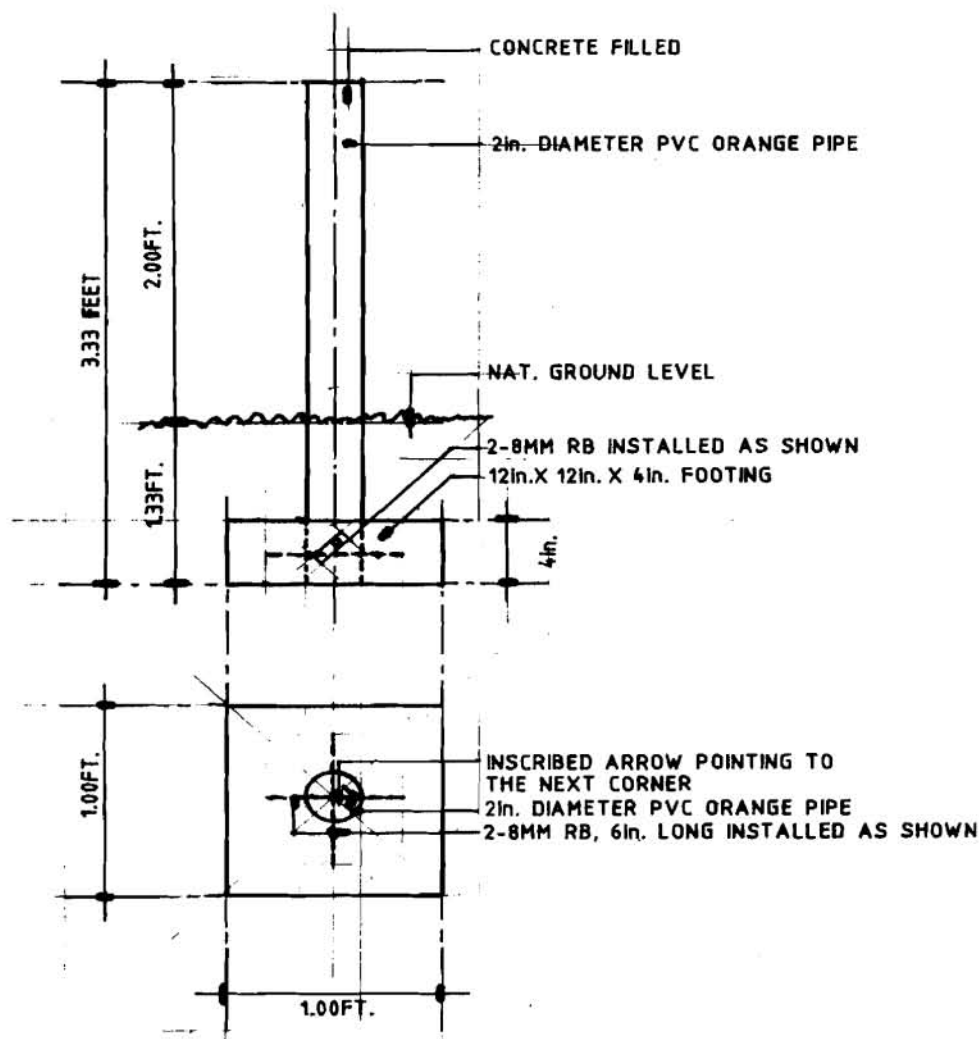
8. Strips of mangrove or swamplands at least twenty (20) meters wide, along shorelines facing oceans, lakes, and other bodies of water, and strips of land at least twenty (20) meters wide facing lakes;

9. Areas needed for other purposes, such as national parks, national historical sites, game refuges and wildlife sanctuaries, forest station sites, and others of public interest; and

10. Areas previously proclaimed by the President as forest reserves, national parks, game refuge, bird sanctuaries, national shrines, national historic sites:

*Provided*, That in case an area falling under any of the foregoing categories shall have been titled in favor of any person, steps shall be taken, if public interest so requires, to have said title canceled or amended, or the titled area expropriated.

## SPECIFICATIONS OF THE CORNER STAKE

**Methods of Fabrication and Installation:**

1. A 2 inches diameter, 3.33 feet in height orange pvc pipe shall be used as stake mounted on the center of a 12 in. x 12 in. x 4 in. thick concrete block footing.
2. The portion of the pipe embedded in the concrete footing shall be provided with 2-8 mm, 6 in. long installed perpendicular with each other to serve as anchor.
3. The pvc pipe shall be filled with concrete to the
4. An arrow pointing to the direction of the next corner shall be inscribed on top of the pvc pipe.
5. The pre-fabricated stake shall be erected 1.33 feet below the natural ground level.





**PROCESS FLOW OF THE ASSESSMENT AND DELINEATION OF BOUNDARIES BETWEEN FOREST LANDS, NATIONAL PARKS AND AGRICULTURAL LANDS**

