

# **Application of Land Administration Domain Model to Recognition of Indigenous Community Rights in the Philippines: Laws Examined with Spatial Dimensions**

**João HESPANHA, Portugal; Silvane PAIXÃO, Brazil; Tarun GHAWANA, India; Jaap ZEVENBERGEN, The Netherlands; Andrea F.T. CARNEIRO, Brazil**

**Keywords:** Indigenous Property Rights, Land Administration Domain Modelling, Forested Communities

## **SUMMARY**

Given the ever growing needs of Natural Resources imposed through economic development, particularly demanding in the last two decades, a number of environmental and socio-economic issues have arisen. These include growing rates of deforestation, environmental pollution of soils, air and water, and also the resettlement or even eviction of poor and / or indigenous populations caused by changes in land use and economic reasons as mining, lumbering, oil exploration and other uses. This is often the case in countries with multiple ethnic groups, at different cultural development stages, and that at the same time possess rich natural resources, namely, with significant portions of the territory covered with tropical rainforests. In reaction to these issues, governments defined new policies, resumed in Acts, Laws and Regulations involving a number of relevant agencies. These policies have the aim, in general, to protect the environment and to achieve a sustainable development, through the protection of Indigenous Peoples Land Rights.

Authors of this paper recognized the importance of these policies, proposing a first case study for his home country, India, and the Indian Forest Rights Act from 2006 (Ghawana et al., 2012). This was the first of two previous researches supported on a methodology which includes a modelling approach having the Land Administration Domain Model (LADM) as its basis. The second paper addressed the situation in Brazil, though in this case, there was no single Act where to base the approach, and a legal framework including the Federal Constitution, Indigenous Statute and the Indigenous Lands Demarcation Procedure was reviewed (Paixão et al., 2013).

The consolidated approach follows thus an initial literature review, depicting the current situation concerning Indigenous Land Rights and corresponding Indigenous Lands, and the existing legal framework and governing organizations. A correspondence is then established with the core LADM classes, including short descriptions of the country counterparts. The modelling develops then in two stages: dynamic, through Use Case and Activity diagrams, where the main actors (individual, groups or organizations) are linked to fundamental procedures as land demarcation and adjudication; and structural, where a country profile model is obtained, and some concrete situations are depicted via Instance Level diagrams. This is the approach applied to the Philippines case study, developed upon the Indigenous Peoples Rights Act of 1997 and the resulting creation of the National Commission on Indigenous Peoples, and its role on the implementation of the corresponding policy.

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## **1. BACKGROUND**

The Official Gazette of Philippines, published in March 1998 clearly states the reason for the declaration of Indigenous Peoples Rights Act in Philippines to recognize, protect and promote the rights of indigenous cultural communities / indigenous peoples (ICCs/IPs), creating a national commission on indigenous peoples, establishing implementing mechanisms, appropriating funds there for, and for other purposes. Among the rights being granted to IPs include territorial domain, self-determination and the right to practice their customary laws, cultural integrity and property, and consent over development interventions in their community (Tuyor et al., 2007).

Prior the Indigenous Peoples' Rights Act of 1997 (Republic Act 8371) or IPRA, several laws were passed that addressed the rights of IPs, for example (Tuyor et al., 2007; CERD, 2009; Capistrano, 2010):

- In 1909 the Cariño Doctrine acknowledged the fact that indigenous people lands were private property under customary law and had never been public property inasmuch as they had not fallen under the control of the laws of the Spanish colonizer, which had defined all lands as public lands under the Regalian doctrine.
- In 1974 the Presidential Decree No. 410 (the Ancestral Land Law) established that all lands occupied by national minorities were classified as “alienable and disposable” and the individual members coming from the national minorities were asked to apply for Torrens titles from the government.
- In 1987 the Philippine Constitution was ratified and this contained several provisions on the protection of the rights of “indigenous cultural communities” or ICCs, mandating the State to recognize the rights of IPs/ICCs (Section 5, 6, 7 and 22).
- In 1992 the National Integrated Protected Areas System (NIPAS) Act - Section 13 of the Act prescribes that the Department of Environment and Natural Resources (DENR) shall create rules and regulations to govern ancestral lands within protected areas and that the DENR cannot forcibly relocating indigenous communities,

After the Indigenous Peoples' Rights Act of 1997, other Implementing Guidelines (Administrative Orders/Circulars) were established, such as (Corpuz, 2011):

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- AO2, s. 2002 - Titling of Ancestral Domain Claims: to identify and delineate ancestral lands and ancestral domains, to qualify individuals, families, clans or entire indigenous communities for Certificates of Ancestral Domain Claims (CADC) or Certificates of Ancestral Lands Claims (CALC), and to certify that those qualified have the right to occupy and utilize the land (Molintas, 2004).
- AO3, s. 2002 - Issuance of Free and Prior Informed Consent (FPIC)
- AC1, s. 2003 - Rules and Procedures of Pleadings
- AO1, s. 2003 - Convening of the Indigenous Peoples Consultative Body
- AO1, s. 2004 -Formulation of the Ancestral Domains Sustainable Development and Protection Plan

This paper aims to capture the land administration aspects and the spatial dimensions of Indigenous Peoples Rights Act Philippines, 1997 as a case study under the framework of Land Administration Domain Model (LADM).

## **2. INDIGENOUS PEOPLES RIGHTS ACT, 1997**

It is an act to recognize and vest the forest rights and occupation in forest land in forest dwelling Scheduled Tribes and other traditional forest dwellers who have been residing in such forests for generations but whose rights could not be recorded; to provide for a framework for recording the forest rights so vested and the nature of evidence required for such recognition and vesting in respect of forest land.

The IPRA law enforces the 1987 Constitution’s mandate that the State should craft a policy “to recognize and promote the rights of IPs/ICCs within the framework of national unity and development”. It also seeks to delineate, recognize and, where appropriate, to provide written titles to genuine claims over ancestral lands and domains, in this sense the IPRA provides unequivocal recognition of customary land rights (Roy, 2005).

### **2.1 Definitions under Indigenous Peoples Rights Act, 1997**

#### **2.1.1 Ancestral Domains (LA\_SpatialUnitGroup, LA\_SpatialUnit)**

Subject to Section 56 hereof, refer to all areas generally belonging to ICCs/IPs comprising lands, inland waters, coastal areas, and natural resources there in, held under a claim of ownership, occupied or possessed by ICCs/IPs, by themselves or through their ancestors, communally or individually since time immemorial, continuously to the present except when interrupted by war, force majeure or displacement by force, deceit or as a consequence of government projects. It shall also include lands which may no longer be exclusively occupied by ICCs/IPs but from which they traditionally had access to for their subsistence and traditional activities, particularly the home ranges of ICCs/IPs who are still nomadic and/or shifting cultivators.

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Basic steps for the procedure of Delineation and Titling of Ancestral Domains as defined in (Corpuz, 2011) are:

- Written Testimony of elders/leaders;
- Proof of since time-immemorial possession;
- Use of self-delineation in ground survey and mapping of ancestral domain boundaries;
- Validation and publication of the survey plan with technical description;
- Approval and registration of title.

#### 2.1.2 Ancestral Lands (LA\_SpatialUnitGroup, LA\_SpatialUnit)

It refer to land occupied, possessed and utilized by individuals, families and clans who are members of the IPs/ICCs since time immemorial, by themselves or through their predecessors-in-interest, under claims of individual or traditional group ownership, continuously, to the present except when interrupted by war, force majeure or displacement by force, deceit, stealth, or as a consequence of government projects and other voluntary dealings entered into by government and private individuals/corporations including residential lots, rice terraces or paddies, private forests, swidden farms and tree lots (Tuyor et al., 2007).

#### 2.1.3 People's Organization (LA\_GroupParty)

It refers to private, non-profit voluntary organization of members of an ICC/IP which is accepted as representative of such ICCs/IPs.

#### 2.1.4 National Commission on Indigenous Peoples (LA\_Party)

It refers to the office (NCIP) created under this Act, which shall be under the office of the President, and which shall be the primary government agency responsible for the formulation and implementation of policies, plans and programs to recognize, protect and promote the rights of ICCs/IPs.

Section 29 of the IPRA, describes that the **Ancestral Domains Office** (ADO) is responsible for the identification, delineation, and recognition of ancestral lands/domains. It shall issue, upon the Free and Prior Informed Consent (FPIC) of the IPs/ICCs concerned, certification prior to the grant of any license, lease or permit for the use of natural resources affecting the interests of IPs/ICCs in protecting the territorial integrity of all ancestral domains.

Figure 1 represents the Certification precondition (CP)/Free and Prior Informed Consent (FPIC) Process. The The memorandum of agreement shall stipulate, among others: (i) benefits due to the host IPs/ICCs; (ii) measures to protect the IPs' rights and value systems; and (iii) the responsibilities of the proponent as well as those of the host IPs/ICCs and the NCIP (Tuyor et al. (2007).

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The Free Prior Informed Consent (FPIC) of the community should be obtained in accordance with customary laws. This legal concept gave the indigenous peoples the right to deny or allow entry of development projects into their ancestral domain (Capistrano, 2010).

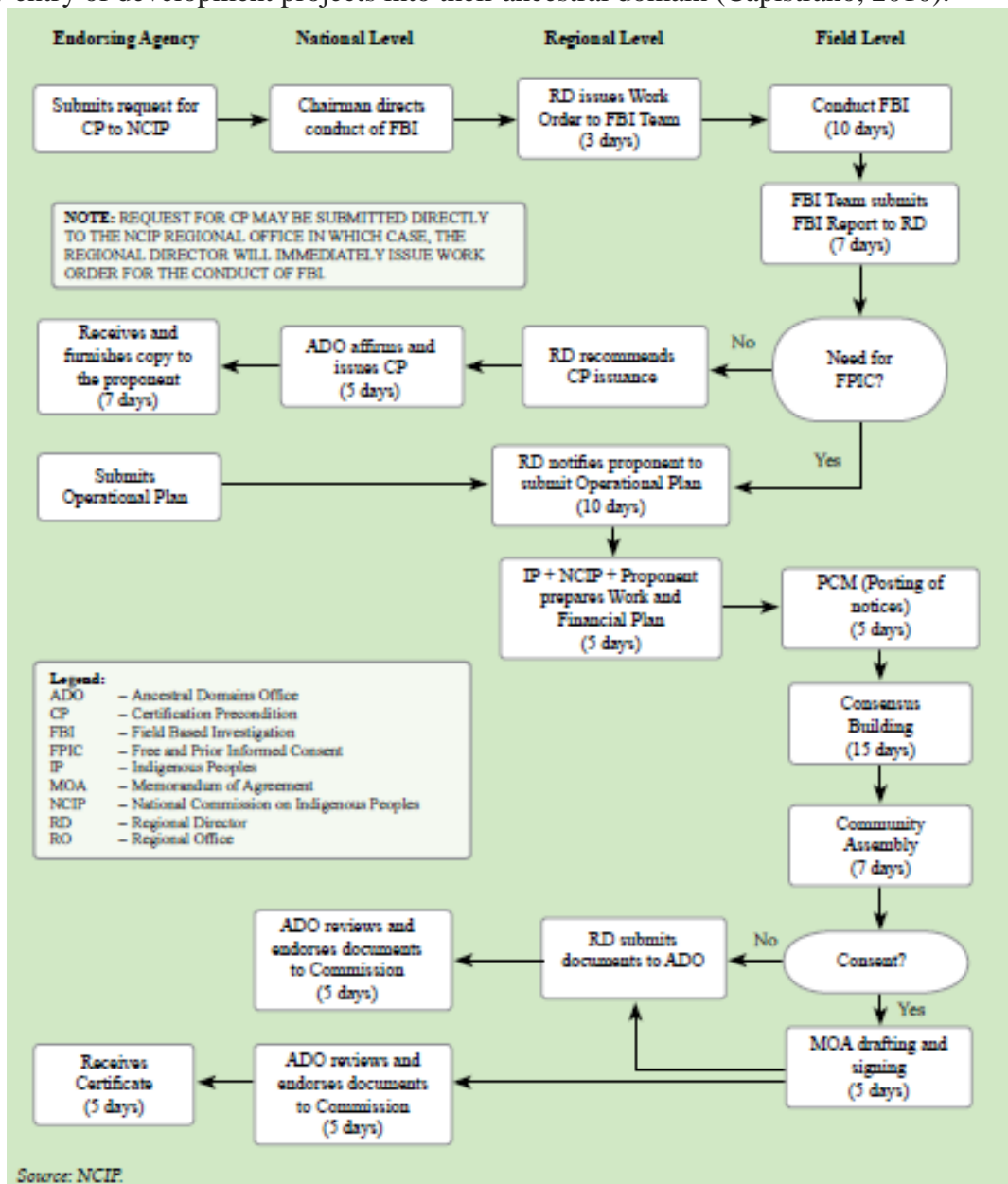


Figure 1: Schematic Diagram of the Certification precondition (CP)/Free and Prior Informed Consent (FPIC) Process (Tuyor et al. 2007, p.25)

Regard to ancestral domains, the NCIP is tasked to process ancestral land and domain claims and work for the issuance of Certificates of Ancestral Domain Title (CADT) which serves as a proof of ownership by a particular indigenous group of their domain, including all natural resources that are found in its surface and subsurface. It cannot be sold to outsiders and is held

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in perpetuity by the ethnic group (Roy (2005), Tuyor et al. (2007)). As Institute for Autonomy and Governance - IAG (2011) explains, CADT refers to the title formally recognizing possessory right of IPs over their ancestral domains. CALT, on the other hand, refers to a title formally recognizing ancestral rights.

Molintas (2004) and IAG (2011) explain that prior IPRA to be instituted a number of policies have also been developed by government agencies such as the Department of Environment and Natural Resources (DENR) and the Department of Agrarian Reform (DAR) in an attempt to provide land tenure to the indigenous people. Through the DENR, Administrative Order No. 2 tenure instruments such as Certificate of Ancestral Land Claims and Certificate of Ancestral Domain Claims were issued. Only with the IPRA that CADT and CALT under the NCIP replaced CALCs and CADC under the DENR. DAR provides Certificates of land Ownership Award (CLOA), see Figure 2.

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## Philippines Land Administration

Concerning Indigenous Land Rights

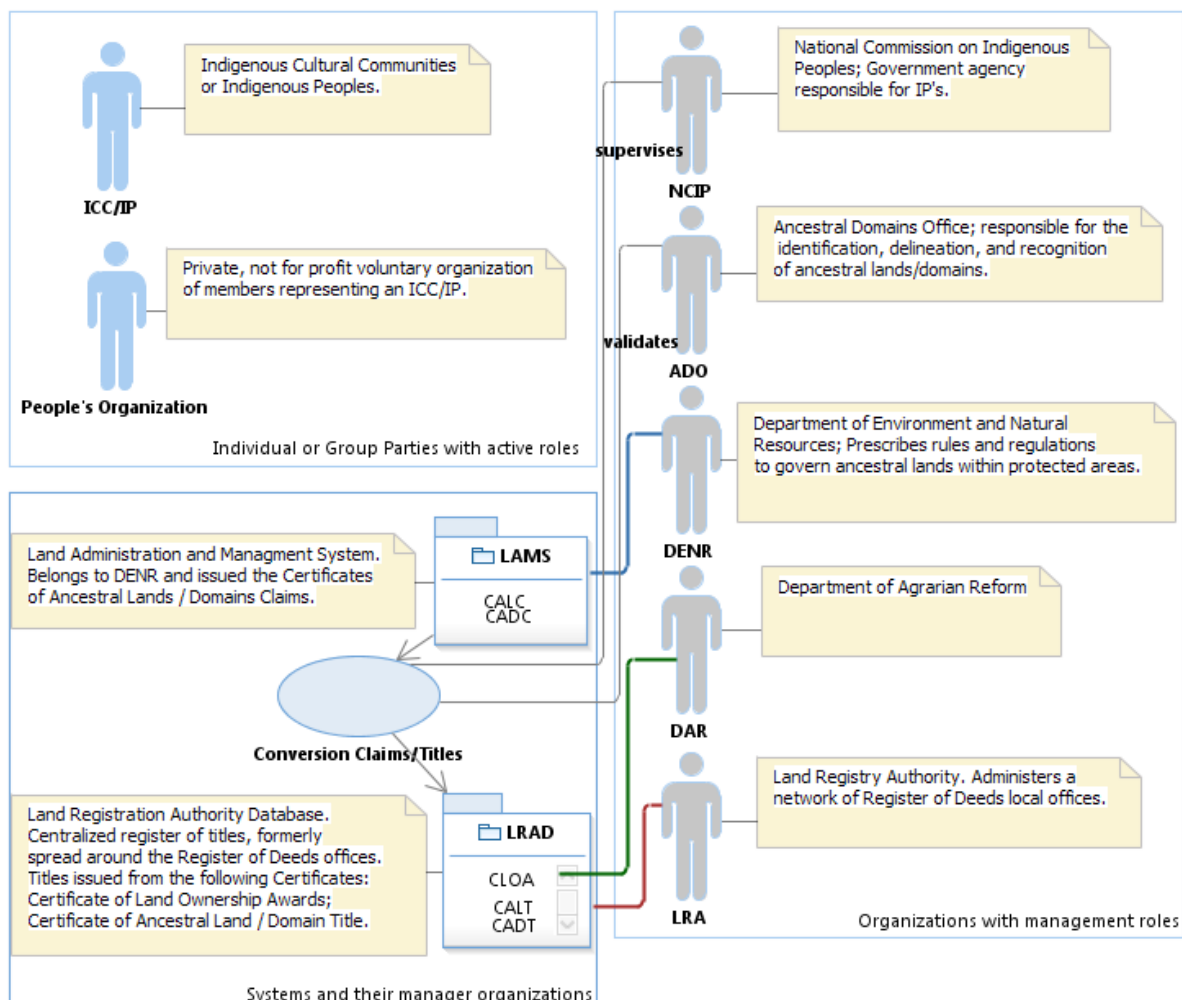


Figure 2: Context for Indigenous Land Rights in Philippines (UML Use Case)

CADC: Certificate of Ancestral Domain Claim  
 CADT: Certificate of Ancestral Domain Title  
 CALC: Certificate of Ancestral Land Claim  
 CALT: Certificate of Ancestral Land Title  
 CLOA: Certificate of Land Ownership Award  
 ICCs: Indigenous Cultural Communities  
 LAMS: Land Administration and Management System  
 LRAD: Land Registration Authority Database

ADO: Ancestral Domains Office  
 DAR: Department of Agrarian Reform  
 DENR: Department of Environment and Natural Resources  
 NCIP: National Commission on Indigenous Peoples  
 LRA: Land Registration Authority

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Molintas (2004, p.292) comments “formal registration of land title has become a tool to convert communal ancestral lands into individually titled private lands, led to the fragmentation of villages... There are many stories told by indigenous communities of ancestral lands being fragmented and titled through fraud or legal circumvention by individuals and corporations familiar with the Torrens system.”

#### 2.1.5 Indigenous Cultural Communities / Indigenous Peoples (LA GroupParty, LA Party)

A group of people or homogenous societies identified by self-ascription and ascription by others, who have continuously lived as organized community on communally bounded and defined territory. ICCs/IPs shall likewise include peoples who are regarded as indigenous on account of their descent from the populations who inhabited the country, at the time of conquest or colonization, or at the time of inroads of non-indigenous religions and cultures or the establishment of present state boundaries, who retain some or all of their own social, economic, cultural and political institutions but who may have been displaced from their traditional domains.

As Tuyor et al. (2007), Capistrano (2010) and Cariño (2012) reported, more than 100-110 groups in the Philippines belonging to the IPs category with their population totaling around 12-15 million (10-15% of the Philippine population) and are present in 65 of the country's 78 provinces. Also, Tuyor et al. (2007) commented that different sources reveal different numbers and ethnic names for IPs and other ethno linguistic groups. For Cariño (2012) the disaggregation of data for indigenous peoples in the national census has not yet been done because of the absence of specific questions on indigenous ethnic identity in the national census survey questionnaires.

They may be roughly classified into seven groupings (Molintas, 2004): a) *Mindanao Lumad*, b) *Cordillera Peoples*, c) *Caraballo Tribes*, d) *Agta and Aeta/Negrato*, e) *Mangyan of Mindoro*, f) *Palawan hill tribes* and g) *Muslim Groups*.

#### 2.1.6 Land Registration Authority (LA Party)

It is the National level organization responsible for Land Registration, according a Torrens Title system. It manages a country wide network of Register of Deeds offices, which formerly maintained their own localised registers. Recently, a computerization program is centralizing all the titles in the country into a single database (LRA, 2014). This has been referred in Figure 2 as the Land Registration Authority Database (LRAD).

It is thus the final repository for the titles obtained from the previously defined Certificates of Ancestral Lands or Domains (CADT and CALT), and also for the titles issued from the Certificates of Land Ownership Award (CLOA), resulting from agrarian reform programmes which often involve IPs.

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### 2.1.7 Rights (LA Rights)

Some important Rights which secure individual or community tenure or both are

- a) mentioned under Section 7, Rights to Ancestral domains - Right to claim ownership over lands, bodies of water traditionally and actually occupied by ICCs/IPs, sacred places, traditional hunting and fishing grounds and all improvements made by them at any time within the domains;
- b) mentioned under Section 56, Rights to Develop Lands and Natural Resources – Right to develop, control and use lands and territories traditionally occupied, owned, or used; to manage, conserve, negotiate the terms for exploration, benefit and share the profits from allocations and utilization of natural resources within the territories; to have an informed participation in the formulation and implementation of any project impacting the ancestral domains and to receive fair compensation for any damage due to the project ;
- c) Right to regulate entry of migrant settlers and organizations into the domains;
- d) Right to safe and clean air and water for which ICCs/IPs shall have access to integrated systems for the management of their inland waters and air space.
- e) mentioned under Section 8, Rights to Ancestral Lands – Rights to transfer land / property include right to transfer to land or property rights to / among members of the same ICCs/IPs, subject to customary laws and traditions of the community concerned.

Cariño (2012) explains that land ownership varied from communal to semi-communal to private. Rights to land are derived through inheritance, investment of labour and actual improvements on the land. Access to and control of land and resources are traditionally regulated through customary laws, which the communities themselves evolved.

A forest area may also be claimed by families as theirs. This gives them the exclusive right to whatever firewood, lumber, and other forest products are derived from it (Molintas, 2004).

### 2.1.8 Responsibilities (LA Responsibilities)

ICCs/IPs occupying a duly certified ancestral domain shall have the following responsibilities:

- a) **Maintain Ecological Balance:** - This responsibility includes protecting flora and fauna, watershed areas and other reserves to preserve, restore and maintain a balance ecology in the ancestral domain;
- b) **Restore Denuded Areas:** - Active initiation, undertaking and participation in the denuded areas reforestation and other development programs and projects subject to just and reasonable remuneration;
- c) **Observed Laws:**-To observe and comply with the provisions of this Act and the rules and regulations for its effective implementation.

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Cariño (2012) comments that even though the indigenous people has an attachment to ancestral land, territory and resources, indigenous peoples in Philippines are having loss of ancestral land due to displacement by development projects and extractive industries including mining, dams, logging or natural causes. Environmental degradation – destruction of forests, pollution of waters and loss of agro-biodiversity has also being a result of impacts of extractive industries and agriculture modernization.

#### 2.1.9 Restrictions (LA Restrictions, Administrative Servitude)

Unauthorized and unlawful intrusion upon, or use of any portion of the ancestral domain, or any violation of the rights hereinbefore enumerated, shall be punishable under this law. Furthermore, the government shall take measures to prevent non-ICCs/IPs customs or lack of understanding of laws to secure ownership, possession of land belonging to said ICCs/IPs.

#### 2.1.10 Source (LA SpatialSource, LA AdministrativeSource)

LADM describes source as a document providing facts. A non-spatial source describes document in textual format. A spatial source, on the other hand, is a source with the spatial representation of one (part of) or more spatial units. For example, a field survey sketch, an orthophoto or a satellite image with evidence on the location of boundaries collected from the field.

- a) Certificate of Ancestral Domain and Lands Title: It refers to a title formally recognizing the rights of possession and ownership of ICCs / IPs over their ancestral domains / lands identified and delineated in accordance with this law.
- b) Communal Claims – It refer to claims on land, resources and rights thereon, belonging to the whole community within a defined territory.
- c) Customary Laws – It refers to a body of written and /or unwritten rules, usages, customs and practices traditionally and continually recognized, accepted and observed by respective ICCs/IPs.
- d) Right to Claim Parts of Reservations – The claim on parts of the ancestral domains which have been reserved for various purposes, except those reserved and intended for common and public welfare and service.

As a required proof, Ancestral Domain Claims shall include the testimony of elders or community under oath, and other documents directly or indirectly attesting to the possession or occupation of the area since time immemorial by such ICCs/IPs in the concept of owners which shall be any one of the following authentic documents:

1. Written accounts of the ICCs/IPs customs and traditions, political structure and institution;
2. Pictures showing long term occupation such as those of old improvements, burial grounds, sacred places and old villages;
3. Historical accounts including pacts and agreements concerning with other ICCs/IPs;
4. Survey plan and sketch maps;
5. Anthropological data;

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6. Genealogical surveys;
7. Pictures and descriptive histories of traditional landmarks such as mountains, rivers, creeks, ridges, hills, terraces and the like; and
8. Write-ups of names and places derived from the native dialect of the community.

On the basis of such investigation and the findings of fact based thereon, the Ancestral Domains office of the NCIP shall prepare a perimeter map, complete with technical descriptions and a description of the natural features and landmarks embraced therein;

#### 2.1.11 Systems (Packages in the Use Case Diagram)

There are two different systems, represented as packages in Figure 2, which store Certificates for the Ancestral Domains and Lands, namely as Claims (Land Administration and Management System, LAMS), and lately as Titles (Land Registration Authority Database, LRAD). The only Use Case in the diagram represents the conversion procedure from Claims into Titles, triggered by the Administrative Order #2 from 2002, "Titling of Ancestral Domain Claims", as referred in the Background section.

As shown by the coloured connector lines in Figure 2, the LAMS (LMB, 2014) is managed by the Department of Environment and Natural Resources (DENR), and the LRAD is managed by the Land Registration Authority.

## 2.2 Spatial Dimensions of Indigenous Peoples Rights Act, 1997

The act does not explicitly mention about the spatial and temporal dimensions of the Rights and other aspects. However, some aspects are worth of mentioning under this section:

- a) Spatial dimensions gets highlighted under Right to claim ownership over lands, bodies of water traditionally and actually occupied by ICCs/IPs, sacred places, traditional hunting and fishing grounds and all improvements made by them at any time within the domains; This spatially extends their claims beyond their core habitats.
- b) Benefit and share the profits from allocations and utilization of natural resources within the territories which extends rights in 3<sup>rd</sup> spatial dimension because of underground resources exploitation.
- c) Right to access the integrated systems for the management of their inland waters and air space and responsibility to manage the ecological balance of watershed areas and other reserves clearly extends the spatial horizon of their activities.
- d) Proofs required to support the claims for the ancestral domains/land titles require the spatial representations of the claimed area such as pictures, survey plans and sketch maps or perimeter maps etc.
- e) For the purpose of Option to Secure Certificate of Title under Commonwealth Act 141 of Section 12, individually-owned ancestral lands, with agriculture character, including those with a slope of eighteen percent or more are hereby classified as alienable and disposable agriculture lands. Now, this specific mentioning of slope percentage brings a new aspect regarding spatial dimensions inclusion in such acts and

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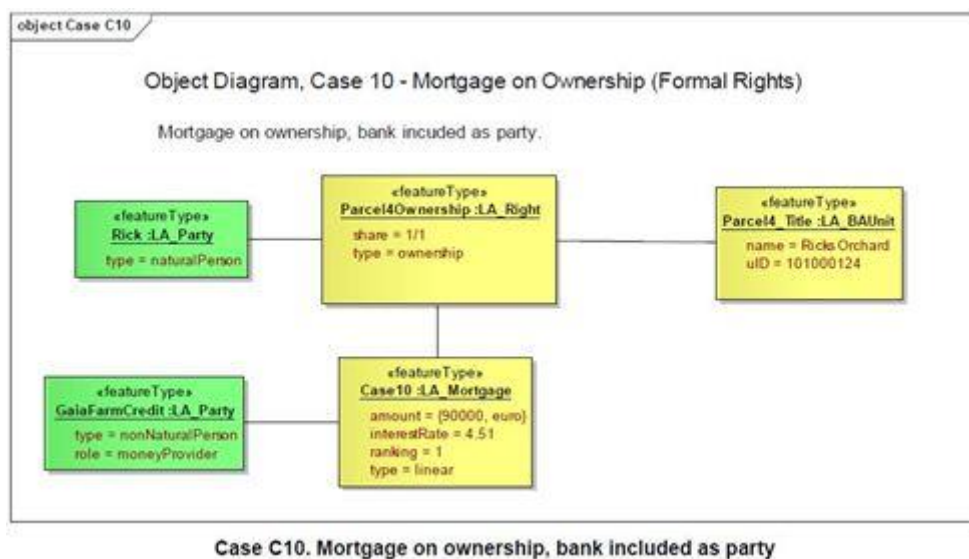
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is not seen in some other similar acts by developing countries such as Indian Forest Rights Act 2006.

These spatial dimensions can be extended further in LADM framework. Under Right to Transfer Land / Property, members of the same ICCs / IPs, can transfer land or property rights to each other, subject to customary laws and traditions. However, it is not clear whether the Act allows the holders to raise credit against the entitled individual / community land holdings from outsiders (institutions or individuals). This rule out the possibility of working with Case C27 of LADM i.e. Spatial Unit with Micro Credit. However, the formal rights granted to the holders of ownership, access and usage of resources from land and water can be considered as a basis for raising credit. The share of the indigenous in the proceeds from the exploitation of mineral resources and potential forms of hydraulic energy by third parties can also become a basis of such credit rising.

Slight modification of Case C10 of LADM i.e. Mortgage on ownership (Formal Rights), considering above mentioned formal rights equivalent to Parcel Ownership rights, will enable credit rising for the right holders.



### 3. DERIVATION OF A LAND ADMINISTRATION SPECIALIZED MODEL

In this section, the set of correspondences established in section 2.1, from the review of the IPRA Act of 1997, is converted into a class diagram derived from the LADM domain model. The focus of this diagram is in the specializations which take into consideration specific elements (classes, attributes and enumerations), which were identified in the Act itself, or examining the information stored for the Certificate of Ancestral Domain Titles at the (Philippine Geoportal, 2014). That is, the original LADM attributes and types are omitted, for simplicity and to maintain focus on the specifics of the proposed Philippine specialized model, PH\_LADM. Although they should be taken into consideration in case of a future

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implementation. The LADM based UML modelling here presented was developed using IBM's Rational Software Architect, under an academic license.

It must be noted that this specialization is directed solely to the modeling concerning Indigenous Land Rights, and not the "classical" realm of the cadastre, that is, formal private property rights stored at a Land Registry, with or without a separate (Geometric) cadastre.

The diagram shows (mostly aligned at the top) the parent classes from LADM from where the Philippines specializations are derived. Beginning with the Group Party class *PH\_ICCorIP* (class names here referred in italics), a new type attribute and corresponding enumeration is defined, called *PH\_EthnicGroup*. As referred back in section 2.1, the exact figure is polemic, but nevertheless this is an information which must be stored with the CADT Titles.

This group of parties, representing an Indigenous Community or People, has a special type of ownership right, with a set of definitions extracted from IPRA, including to develop, control and use traditionally occupied lands, but also right to safe and clean air and water and the right to transfer such ownership according customary law. Such type of right is specific to these Group Party and thus a new specialized right should be created, to differentiate from the classical civil law based ownership. It is interesting to note that the same solution was proposed in the research paper for the Brazilian Indigenous Land Rights (Paixão, 2013).

Concerning LADM's Basic Administrative Unit, in the Philippines this should correspond to the description of a record in the Register of Deeds. A specialization called *PH\_RegisterofDeeds* is created, having two additional attributes to store the numbers under which the Certificate of Ancestral Domain (or Land) Claim and the resulting Certificate of Ancestral Domain (or Land) Title where stored, which are specific to the Philippines case. A number of documents is required in order to support the registration procedure, which are specific to IPRA, and thus a new class and respective enumeration of types of documents are created, named *PH\_AdministrativeSource* and *PH\_AdminSourceType*. Each type is defined in section 2.1, sub-section "Source".

On LADM's Spatial Unit package, only two specialized classes are considered, namely the one covering the Ancestral Domains (*PH\_AncestralDomain*), and the Ancestral Lands (*PH\_AncestralLand*). Specific attributes used in the corresponding data set in the Geoportal were created, namely to store the area value in Hectare and the Indigenous People population. Likewise, these attributes are specific and did not exist in the domain model.

Finally, a new Spatial Source and respective enumeration are created, to cover all the different types of evidence that can be collected to document a given delineation for an ancestral domain (or land). These received the names *PH\_SpatialSource* and *PH\_SpatialSourceType*.

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### Philippines Indigenous Rights Class Diagram According definitions in IPRA, 1997

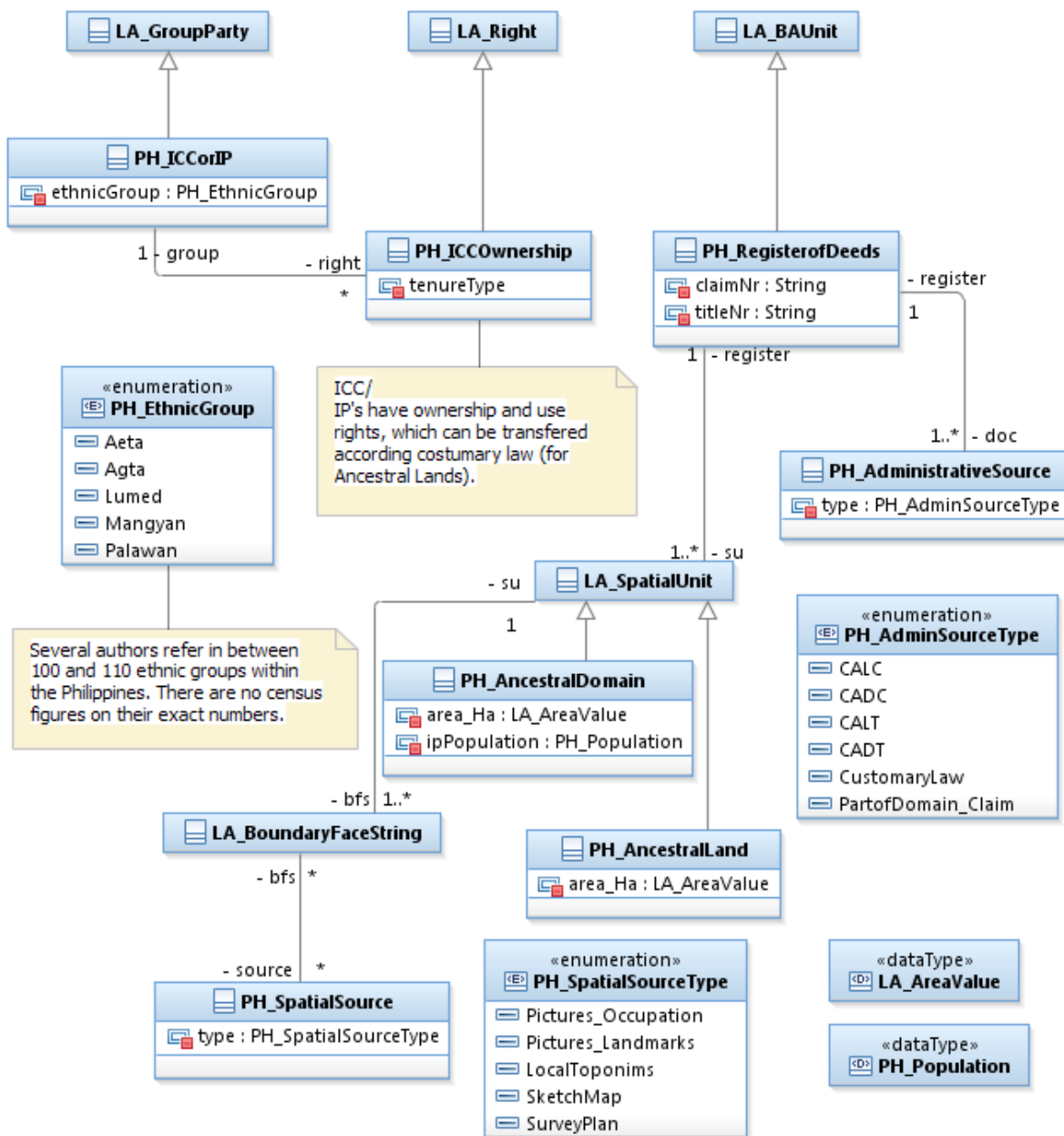


Figure 3 - Class Diagram according IPRA 1997 definitions

As applied in the research for the Brazilian Indigenous Land Rights, also in this case the dynamic modeling component included the study of a fundamental procedure in the formalization and registration of the Indigenous Lands. The procedure for the “Titling of

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Ancestral Domain Claims”, defined through NCIP's administrative order #2 from 2002 is examined in order to achieve a context (or top) level Activity Diagram.

The resulting diagram (Figure 4), only shows the main phases of the procedure, and thus each of the actions that is shown corresponds in fact to a structured activity. At least a second level of detail is needed if any work-flow based system is to be derived from the UML.

Some of the actions have boxes (output pins in UML) which indicate the maximum sum of days required to fulfill all the detailed tasks within the activity. This is a mere indication of the total number of days required, given that some tasks do not impose an explicit time limit.

The boxes which do not define a maximum deadline (in days) refer to actual outputs from the respective actions, that is, the Survey Plan or the Final Report.

The procedure shall start with a voluntary request presented by the representatives of the ICC/IP's communities, that is, there is no obligation from the official nodal agencies to initiate such procedure, but it must rely on the resolve of the involved ICC /IP community.

The preliminary action of “Recognition of original claimants” will confirm the list of representative group members and examine if there are new members to be included in the respective Group Party. In this way, the original list compiled for the Certificate of Ancestral Land or Domain Claim can be updated according the present situation. All the participating organizations are then noticed for the titling procedure through the “Information Dissemination and Self-Delineation” action, where the ICC/IP's are the main actors in the delineation of the boundaries of the Ancestral Domain or Land, according traditional “metes and bounds” methods, with the desirable participation of Peoples Organizations (NGO's).

This preliminary field recognition is then to be confirmed through modern survey methods (namely GNSS surveys), in the “Ground survey” action, where Surveyors (individual or companies) certified by the National Mapping Agency (NAMRIA) shall be conducted according a Survey Manual by NCIP, with all the surveyed coordinates to be expressed in the Philippine Reference System of 1992.

The resulting Survey Plan is then validated by the Ancestral Domains Office (ADO), and if approved, a report is sent to the Commission (NCIP), in the action referred as “Validation of Survey & endorsement to the Commission”. These results can however be still contested by neighboring or conflicting claimants (non-IP's), which shall be dealt through the parallel actions “Resolution of Protests” and the “Resolution of Boundary Conflicts” (all having a number of fixed deadlines for their conclusion).

Depending on their resolution, the request can be rejected or deferred. In the last case, there is a final action concerning the issuance of the title certificates (CADT or CALT), which are to be formally registered in the Register of Deeds, which concludes the conversion procedure.

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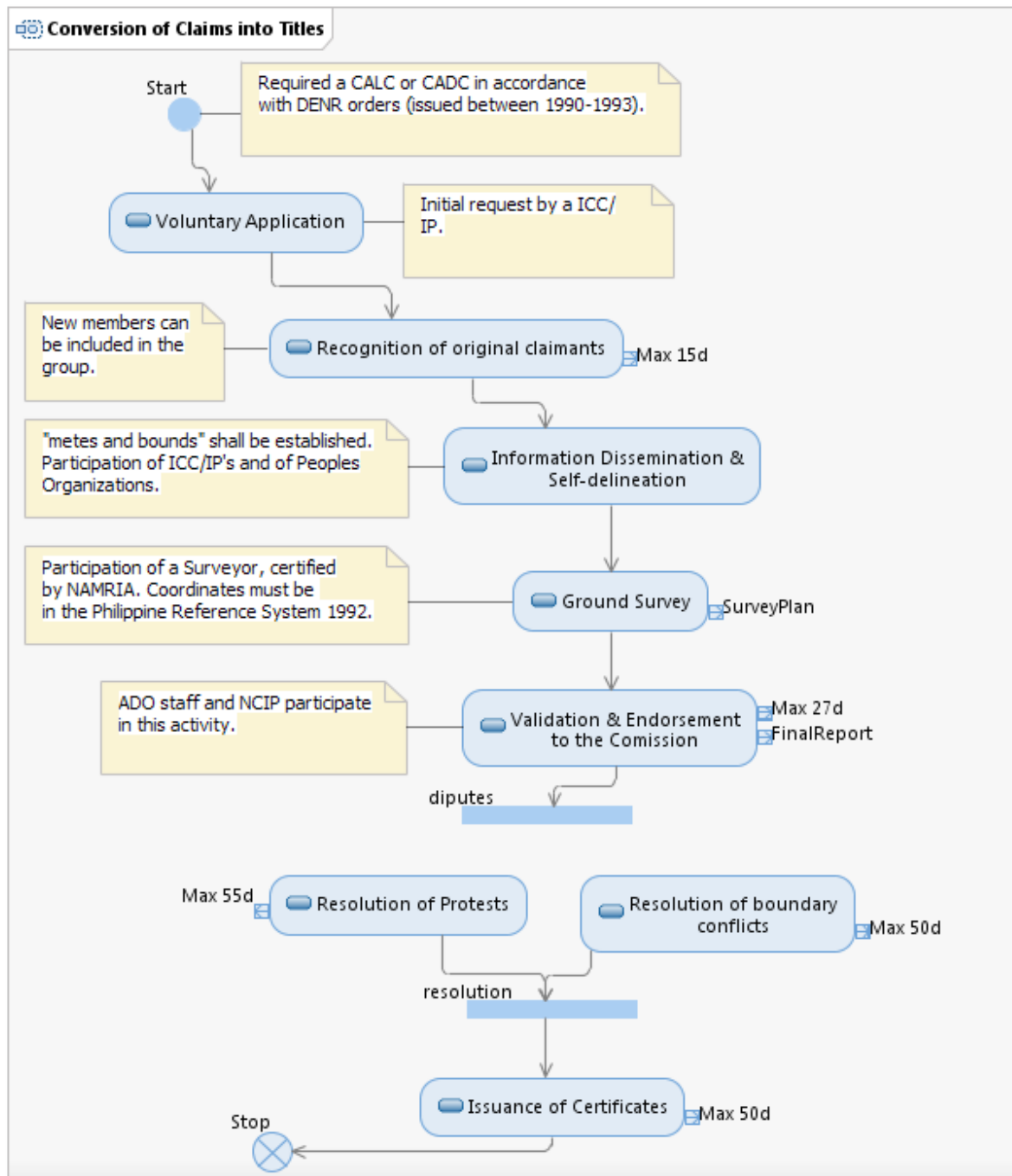


Figure 4 - Activity Diagram for the procedure of conversion from Claims into Titles

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#### 4. CONCLUSION AND RECOMMENDATIONS

It is expected that the review of acts and regulations in the field of Indigenous Rights in Philippines, presented here, and the LADM based modelling approach, can bring the following benefits to involved actors:

- A common understanding within the Land Administration domain, for all the organizations involved;
- Standardized models including the relations of rights, restrictions and responsibilities to their spatial units geometries could improve administrative procedures concerning ancestral lands and domains claims;
- Clearly defined responsibilities for data maintenance can be achieved;
- A common data model will allow interoperability and data sharing, avoiding duplication and inconsistent information.

Consideration of the spatial and temporal dimensions of rights and corresponding spatial units can contribute to further developments of the legal framework and its implementation regarding information systems. This can be achieved through the use of any of the available spatial and legal profiles included in the standard, namely through inclusion of 3D spatial units to accurately depict certain types of uses like the air space (electric grid), marine waters (aquaculture) or the underground (mineral resources exploitation).

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