

Land Administration System in Nepal

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Key words: Cadastral Surveying, Adjudication Process, Land Registration, Land Administration, Good Governance

SUMMARY

Though the land is an immovable property; every people depends upon the land. Without the land life is not adoptable in the earth; which can be said as a compulsion to the living creatures; by force. Nepal has started to implement the cadastral surveying procedurals in 1923 AD; using plane tables. That, piloted from Bhaktapur district. Cadastral surveying has passed 100 year from date of its start. It was the first cadastral surveying in Nepal proceeded into mapping records. The preparation of cadastral map using plane table surveying proceeded to 1999 AD from the date aforementioned of its beginning. Now, we began the digital cadastral mapping and database management system using total station. It was as a pilot project from 2006 AD onward to 2010; began with a pilot project from Banepa Municipality ward no 6 of kavrepalanchowk district bagmati province Nepal.

Conventionally, cadastral maps are prepared by using graphical method with an accompanying of surveying by chain survey method with magnetic compass for the orientation. Now, is followed by total station for cadastral surveying and mapping. After completion of field survey, the procedure of land administration and database recordings are prepared in the field in presence of the concern parcel owners who provides the details of him for the central governance records; directly. It is also a good representation of public private governance support.

From the beginning of cadastral surveying and mapping to the moderate time period, cadastral mapping was outlaid by blue print method. This printing system is followed to the age of plane table surveying and mapping. For transforming the analogue/ raster system of conventional surveying mapping to a moderate age of plane table surveying and mapping, in to a digital system; we proceed all cadastral map digitization, followed all the cadastral services are transformed in to a digital system. This laid us to the age of paper print map availability. The cadastral map and services now converted in GIS based digital system.

It was conventional land registration administration system in Nepa since 1923 AD and was transformed in to conventional deed registration system and further transformed in to deed registration. In system doesn't mean the government title guarantee. In improve deed registration, the land owner easily transaction their land; buying and selling, and can have a valuation for the bank collateral for the loan purposed.

Land administration is the process of determining, recording and disseminating information about the ownership, value and use of land. In Nepal, land administration services are weak and traditional type. The major problems that we are facing in land administration are complicated procedure, inefficient paper based system, lack of integrated land policy, political interference and corruption.

The aim of this paper is to go for criticism and analysis of previous cadastral administration system for better performances; enhancing the ancient, moderate and present status of land administration system about surveying, mapping, data collection, adjudication process, land registration system in conventional analogue and digital system for the good land governance.

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1. Introduction to Land Administration System in Nepal

Land is an immovable property, beside this constraint every people depends upon it. Without the land, we can not sustain in the earth. Nepal started cadastral surveying using plane table in 1923 AD from Bhaktapur district. Cadastral surveying has passed 100 year from date. It was the first cadastral surveying and mapping in Nepal. The preparation of cadastral map using plane table surveying began on 1999 AD and it is modified to a digital cadastral system. Now, we are preparing the digital cadastral map and database using total station as a pilot project in ward number 6 of Banepa Municipality of Kavrepalanchowk district Bagmati province, Nepal from 2006 AD.

The cadastral surveying in Nepal, is initiated in focusing of land revenue collect by the government, differentiating the different categories of the land by different categories of the land revenue and securing the right for its tenant. Cadastral survey carried; identify the land owners, tenant, and to determine the types of land. There are three types of land categorised are the private, public/government and trust land. Cadastral maps are prepared by using graphical method, i.e. plane table surveying. Now a days, it is prepared by using total stations. After finishing the cadastral survey, systematic land adjudication process conducted in the field in presence of parcel owner and its neighboring parcel owners. After finishing the land adjudication process, we collect the land ownership details.

At the beginning period cadastral mapping services are available in blue print system. After digitization of cadastral map, it is available in digital as well as in paper print system. The cadastral map and services now converted in GIS based digital system. Nepal, by law; is conducting land registration with improved deed registration system. The deficiency in this system is the non guarantying of government for the property right of the parcel owner. In the improve deed registration, the land owner easily transact their land for corporation, valuation or for the collateral for the bank security deposit for loan purposed.

According to the United Nation's definition of land administration—*“Land Administration is the process of determining, recording and disseminating information about ownership, value and use of land when implementing land management policies. It includes land registration, cadastral surveying and mapping, fiscal, legal and multipurpose cadastral and land information system.”*

Land administration is the process of determining, recording and disseminating information about the ownership, value and use of land. In Nepal, land administration services are weak and traditional in execution of work. The major problems that we are facing in land administration are complicated procedure, inefficient paper based system, lack of integrated land policy, political interference and corruption.

The aim of this paper is to go for the better to best cadastral administration system facilitation to the user group by resulting of pestification of the executory standards on all periodic service values with the criticism and analysis on previous cadastral administration system for forth better performances and enhancing the an ancient, moderate status and improving on the present status of land administration system focusing on surveying, mapping, data collection, adjudication process, land registration system.

2. History of Land Administration System in Nepal

Land recording system in the beginning era is based on the verbal form and verbal description type, in Nepal. The cadastre was basically for the taxation purpose in ancient time. On pass out of time trend; the cadastral survey using plane table was started in 1980 from Bhaktapur district as aforementioned. After the establishment of Survey Department in 1957 then systemically cadastral survey was begun. The introducing of land survey and measurement act 1963, made cadastral map; a legal documents for defining the boundaries of land parcels and to provide the basic data for land administration including the land taxation and land registration process. The preparation of series of systematic cadastral survey and map of Nepal was initiated from 1964. Cadastral survey of all 75 districts of Nepal was completed in 1995/96 using graphical method with plane table and telescopic alidades. Survey Department has introduced digital cadastral surveying in 2006 from Banepa Municipality of Kavreplanchok district. The pilot project for digital cadastral survey and mapping has been completed in 2010 accomplishing with the land ownership certificate distribution and implemented the digital cadastre program. The cadastral maps of 38 districts were prepared with the national geodetic control and remaining 37 districts were preparing island map out of 75 district of Nepal.

3. Cadastral Surveying in Nepal

Cadastral surveying is a branch of surveying and mapping concerning about the parcels boundary locating of an individual's property right definition, protection of their boundary four walls. It is also used for calculating parcel area and parcel facility level categorization for revenue estimation of the land for the Government. Those parcel boundaries may form a part of an official cadastre or not, in both the cases cadastral surveying is defined as an official cadastre or individual purpose cadastre. The individual records of parcel and boundaries are depicted during cadastral surveying. The major components of cadastral surveying are as below;

- Cadastral Maps
- Field Books
- Land Ownership Certificate
- File Maps
- Plot Register

Cadastral surveying was carried to identifying the land owners, tenants and to determine the types of land. There are three types of land they are private land, public/ government land and

trust land. Cadastral surveying is a branch of surveying which deals with the measurement of each parcel of land and their description. It is designed such that all legal aspects of parcel formation and individual identities are identified and recorded. The principle of the cadastral surveying as below;

- To prepared large scale plan of cadastral boundary
- To prepare the description of properties usually in map form defining its length, breadth, and area
- To record the right, restriction and responsible of land and man relations
- To monument property boundary for its dimension security and legal delineation
- To record land form, land element and land types
- Surveying all relevant data

Cadastral surveying is basically for determining of property position of all the corners (x, y, z coordinates) of all the bend points and other information necessary for identifying all of the ownership details. Surveying of properties and associated boundaries are required to determine their locations and to collect all the evidence for future retracement. The techniques used in cadastral surveying are prescribed in the law/regulation and specified standards that are to be achieved. Conversely these methods again be used to deliver them. The followings are the methods for cadastral surveying as mentioned below;

- Descriptive Mapping Model
- Island Mapping Model
- Grid Sheet Mapping Model
- Digital Mapping Model
- Ortho-photo Cadastral Mapping Model
- GNSS Mapping Model

Nepal has conducted plane table surveying method in starting to moderate phase of time. Now a days, Nepal is conducting total station survey (digital surveying) method and radio photo imaging for re-cadastral surveying and mapping. These methods are used in cadastral surveying in Nepal as a Graphical Surveying (plane Table Surveying); the previous one and Numerical Surveying (Total Station/Digital Surveying) and the radio imaging surveying method basically implemented by the private sectors though the Governmental sector has not yet been implemented. The description of these two methods are as;

3.1 Graphical Surveying (Plane Table Surveying)

In Nepal plane table cadastral surveying was started in 1923 from Bhaktapur district. The first cadastral surveying and mapping program was completed in 1999 and the procedure is still in use in cadastral surveying and mapping. In the graphical method of surveying field observation and plotting is carried simultaneously. The instrument generally used for graphical surveying is plane table. It is simpler instrument with low cost and general type, frequently available. It is most suitable for small scale surveying and mapping. Field survey depicts the plan on drawing sheet with a proper orientation; such that the occurrence of any

mistake will have the least possibility. The principle of plane table survey is the parallelism; it means that all the rays drawn through various details should pass through the survey station.

3.2 Numerical Surveying (Total Station Surveying/Digital Surveying)

In Nepal numerical cadastral surveying (total station/digital surveying) and mapping was started from Banepa Municipality in 2006 as a pilot project of Survey Department. This pilot project was run smoothly and completed from digital survey office, established as a branch of cadastral survey division at Banepa. The numerical cadastral surveying monuments and assigns coordinates to parcel boundary defining bend points with the help of total station. These parcel boundary coordinates are used to plot the cadastral plan and later on developed to a cadastral map on any desired scale. These coordinates can be used to relocate the monuments as well as to restore lost monuments. The digital values are stored in memory of the observing device and can easily be handled after transforming the data to computer for mapping by a convenient software. The finalizing of numerical survey for cadastral surveying applies the following principles and procedures are listed below;

- Used fix boundary principle;
- Precise survey of monuments (pillar);
- Coordinates of every boundary monuments and
- Plan that shows distance between each boundary monuments.

4. Land Adjudication Procedural System

Adjudication is the process where by existing rights of the parcel owner in a particular parcel of land are legally ascertained. It is a finalization of the registration of improved deed by the authority of the government and a procedural up dating by the land administration office is just remained as a record maintaining purpose. A particular aspect of land registration is adjudication for the legal process of determining rights in the land. Adjudication procedure begins on; proceeding from the existing records. However, the adjudication may not, reflect the situation on the ground. Completely, it becomes a legal document for evidence to the court and to the owner and its four-wall neighboring along with others. The existing procedures for the adjudication of improved deed should be reviewed and the economic and social advantages of systematic adjudication be weighed against the registration and shall be evaluated by the land administration authority of the government; in perspective of national development from the land use management system.

Globally, there are four types of land adjudication system in practice, as mentioned below:–

- Sporadic adjudication
- Systematic adjudication
- Compulsory adjudication
- Voluntary adjudication

Aforementioned land adjudication system is on practice in Nepal during the cadastral surveying and preparation of cadastral database record. The adjudication team includes

surveyor, an official from local governance and legal officer. They fix the boundary of parcel, pillars are monument in each corner of parcel. The work is done in presence of concerned land owners. After this, cadastral survey is run on field any every parcel is measured within the defined scale and depicted on the map. The attribute data are also prepared. Finally, these descriptions are presented on the cadastral map generating a field book for detail recording of the parcel and individuals.

5. Land Registration System in Nepal

Land registration is a process of official recording of rights in land through registration deeds or as title registration system. There is an official record (the land register) of rights declaring of all the legal conditions for the defined unit of land. It describes for the answer of the questions ‘who owns and how owns’. There are three types of land registration system. They are private conveying, deed registration and title registration. There are four basic legal principles of land registration systems they are;

- The booking principle
- The consent principle
- The principle of publicity
- The principle of speciality

According to these three land registration system, Nepal follows improved deed registration system. These improved deed registration system is as hybrid version of deed registration system. Deed registration system has many advantages as private conveyancing, it could not assure title to the buyer. In case of failing to get title on land or land property; one has to go to the court for the recovery. Improvement in land registration system is as mentioned below:–

- Better basic records management, including netter administrative and accounting facilities;
- Standardization of forms and procedures to expedite the routine processing of documents;
- Physical improvements in keeping records and document storage; so that there becomes an easier access;
- The use of microfilm for both archiving and retrieval of data;
- More realistic and more flexible standards for surveying and mapping, so that cheaper survey methods become possible;
- Partial examination of cadastral surveys and greater flexibility in the methods used;
- Partial examination of title documents, sampling rather than fully scrutinizing their contents, and hence for taking a minimizing degree of risk;
- Compulsory registration to maintain a complete record of all transactions in land;
- Automation of indexes to provide quicker document retrieval;
- Computerization of the abstracts of title to provide quicker access information.

The features of improved deed registration system in Nepal are as listed below:–

- Land and property can be registration or ownership transformations in land revenue office;
- Office does not take any responsibility for the security of the property;
- Land are compulsory registration;
- Deed of transfer of one's ownership on land or property;
- Deed of mortgage or deed of will;
- Deed registration system adopted;
- Mutual transfer of ownership of fixed property.

Weakness of improved deed registration system in Nepal is listed below:–

- Deed registration system the land revenue office does not guarantee the title.
- There are still many fraudulent dealing recurring due to inherent weakness in the system.
- The courts case as ownership disputes, boundary dispute, forgery, and share in property etc.
- The land may have mortgaged or cases may be pending in the courts.
- One buys land of one location and discovers later being in another location.
- The survey records often do not match with maps which clearly indicate that our cadastral records and maps are not accurate.
- Nepal cadastral records serve only fiscal purpose.
- Moths are written and updated manually; it may create sometimes record confusns.
- The moths pages have been torn off or written may fade.
- The survey maps which are the primary base for every land record.
- The area varies in second time of mutation of the same plot.

6. Structure of Land Administration Organization in Nepal

The Ministry of Land Management, Cooperatives and Poverty Alleviation is responsible to conduct land administration services in Nepal. There are four departments related to land administration services under this ministry namely, Department of Survey, Department of Land Management and Archive, National Land Commission and Land Management Training Center. There are 134 Survey Office under the Survey Department and 110 District Land Revenue Office and 21 District Land Reform and Revenue Office under the Department of Land Management and Archive. The structure of land administration organization of Nepal are as below:–

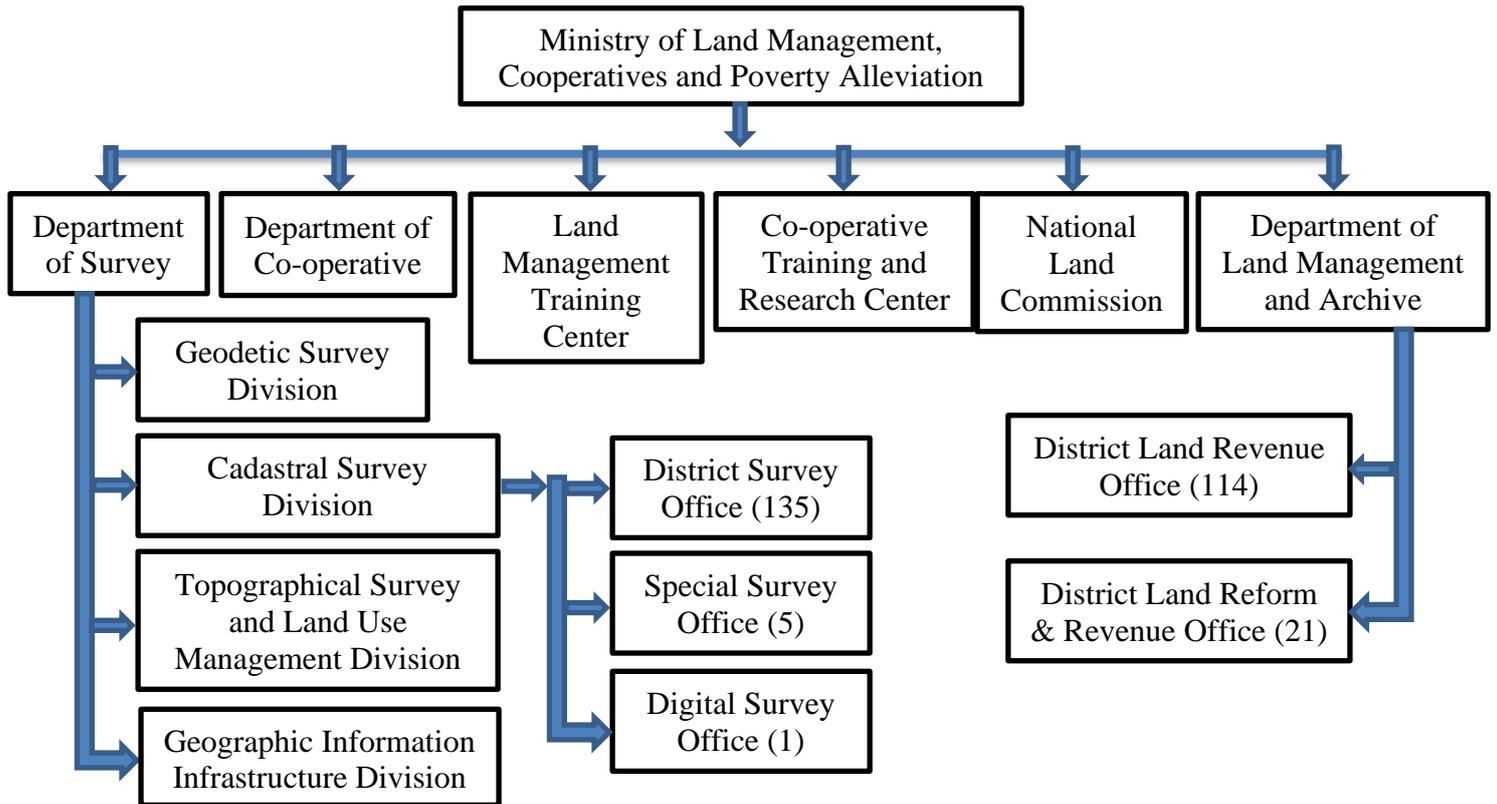


Figure 1: Structure of land administration organization in Nepal

7. Role of Land Administration Organization in Nepal

The role of the land administration organization in Nepal is as blow:–

Ministry of Land Management, Cooperatives and Poverty Alleviation:

The main functional area of the Ministry of Land management, Cooperatives and Poverty Alleviation is policy formation, plan formation, policies and plan implementation, monitoring and evaluation.

Department of Land Management and Archive:

The Department of Land Management and Archive responsible for land records, provide reliable land information and developing a spatial data.

Department of Survey:

The Department of Survey to established control point for cadastral mapping, prepared, maintain and updating cadastral database, cadastral maps and land registers, land transaction, and mapping.

National Land Commission:

The National Land Commission is commissioned to provide land to the landless Dalits, landless squatters and un-managed settlements are resettled in to a managed settlement in the national land.

Land Management Training Center:

The Land Management Training Center is to produced qualified trained man power in the field of surveying, mapping, land administration, geo-informatics and conducted short term training courses related to GIS, Remote Sensing, UAV Drone, Land Management, Land Administration sectors.

Land Revenue Office

The land revenue office to conducted registration of deeds, maintaining ownership records, amendment on attribute data and cadastral data, collection of registration fee, land taxation.

Land Survey Office

The survey office conducted cadastral survey, collect, maintenance and update of cadastral records and parcel sub-division.

Special Survey Office

The special survey office conducted cadastral mapping, ownership data collection and records, and land ownership certificate distribution.

Digital Survey Office

The digital survey office conducted numerical cadastral survey with total station, accompanied by the digital data collection of the land owners, preparation of cadastral map in appropriate software (here applied GIS software) and distribution of land ownership certificate.

8. Legal Framework of Land Administration System in Nepal

The legal framework of land administration system is addressed by law and different facilitating governmental and non-governmental agencies are as below:-

i. Constitution of Nepal, 2015

The constitution of Nepal, 2015 for the right of property in article 25: *Every citizen shall, subject to law, have the right to acquire, own, sell, dispose, acquire business profits from, and otherwise deal with, property.*

ii. Civil Code, 1963

Ensure access to parcel, if it does not have access for exit and enter, through the boundary of adjacent parcels. Administration different kinds of ownership types such as inheritance, donation etc. and ownership transfer and registration issues. Deals with

housing issues, more specifically real estate issues. Restricts exclusion from the right of open access to public places.

iii. Land Survey and Measurement Act, 1961

Facilitated the provision of the first registration of land and systematic cadastral surveying. Supporting land administration and management activities. Classification of land based land use system, such as agricultural, residential, commercial, forestry, open space, mines and minerals area etc.

iv. Land Related Act, 1964 and corresponding regulations

Ensures security of tenancy right in private as well as trust lands. Administers land reform issues. Provision of classification of land in terms of utilization, use of land in terms of land use plans, proper management and development of land for improving productivity such as land consolidation. Supports cooperative farming.

v. Land Revenue Act, 1977 and corresponding regulations

Ensures secure transactions such as deed registration, ownership transfer, mortgaging, leasehold etc. Administers land registration activities. Valuation of land for registration process. Support land management activities and land issues of mega projects. Prohibits registration of public and government land.

vi. Land Acquisition Act, 1977

Ensure proper compensation, if expropriation takes place. Ensure transparency in expropriation.

vii. Ownership and Joint Residence Related Act, 1997

Ensures the security of complementary interests on common places in joint residential, building and the land related details such building. Administration of multistory building or joint residential buildings.

viii. Local Self Governance Act, 1998

Local government is responsible for preparing land resource maps of the respective areas for improving productivity and making effective land use. Prohibits encroachment of public land.

9. Good Land Administration System in Nepal

Land administration is an essential public service system in concern to the production of food types and Land Corporation, as a part of a theme business activity for the maintenance of life standard enhancement. Good governance in land administration facilitates formal and informal rights in land use and provides the legal right of ownership of land that may be of periodic type or permanent type for social and economic development. People with the land; facilitated by fundamental role from land management administration on collectively supports

to enhance the result of sustainable development. A good land administration system in land management will facilitate for;

- Guarantee ownership and security of tenure
- Support land and property taxation
- Provide security for credit
- Develop and monitor land markets
- Protect state lands
- Reduce land disputes
- Facilitate land reform
- Improve urban planning and infrastructure development
- Support environment management
- Produce statistical data.

The governance in land management system, if scopes the smoothen land administration to their people shall executes all the aforementioned facilities and protocols to result a better result in the development from the sector of land and its byproducts.

10. Conclusion

We; the land administration system in Nepal, has transferred its land adjudication system from conventional land management system to deed land management system improving to the improved deed land management system.

11. Recommendation

Even though we adopt the improved land registration management system in Nepal; the system could not guarantee the property right of the people.

The nations in the globe need to have a fro-jump implementation of title registered land management system; such that every citizen of their nation can get the sovereignties in property right to their people by their land administration management system.

Till this executes; the nation in the globe need to look forward for the land management administration for property sovereignties to their people.

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BIOGRAPHICAL NOTES

Mr. Ashim Babu SHRESTHA holds a MSc in Geographical Information Science and Systems (GIS) from University of Salzburg, Austria in 2016 and BE in Geomatic Engineering from Purbanchal University, Nepal in 2012. He works on a Department of Mines and Geology, Mineral Resources Division, Mining License Administration Section, Lainchaur, Kathmandu, Nepal since 2015. He is currently affiliated to Nepal Geomatics Engineering Society (NGES), Nepal Remote Sensing and Photogrammetry Society (NRSPS), Nepal Institute of Charter Surveyor (NICS), Nepal Surveyors Association (NESA), Diploma Engineers' Association, Nepal (DEAN), Nepal GIS Society, Nepal Engineers' Association (NEA), and Nepal Engineering Council (NEC).

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