Paper to Digital Cadastre: Step Towards Transparency: Nepal Perspective

Lumbini

Mt. Everest

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Director General, Survey Department, Nepal
November 26, 2024

SURVEY DEPARTMENT, GON

OUTLINE OF THE PRESENTATION :

1. Setting the Scene
2. Organizations Involved in LA
3. Survey Department: Activities/Program
4. Key aspects of Cadastral Survey in Nepal
5. Digital Transformation in Cadastre
6. Land Information Systems
7. Online Service Delivery
8. Dashboard for Tracking status of transaction
9. Concluding Remarks

SURVEY DEPARTMENT, GON

Nepal

- Landlocked Himalayan Country in South Asia

- Federal Democratic Republic Country

- 7 province and 753 local units

- Population: 29 million 164 thousand 578 (CBS, 2021)

- Multi-lingual, multi-ethnic, and diverse culture

- Uneven geographical terrain (ranging from 60 m in the south to 8848.86 from MSL)

The Country of Mt. Everest

Birth Place of Lord Buddha (Lumbini)

The country of Adventures

Map of Nepal
(Political and Administrative)
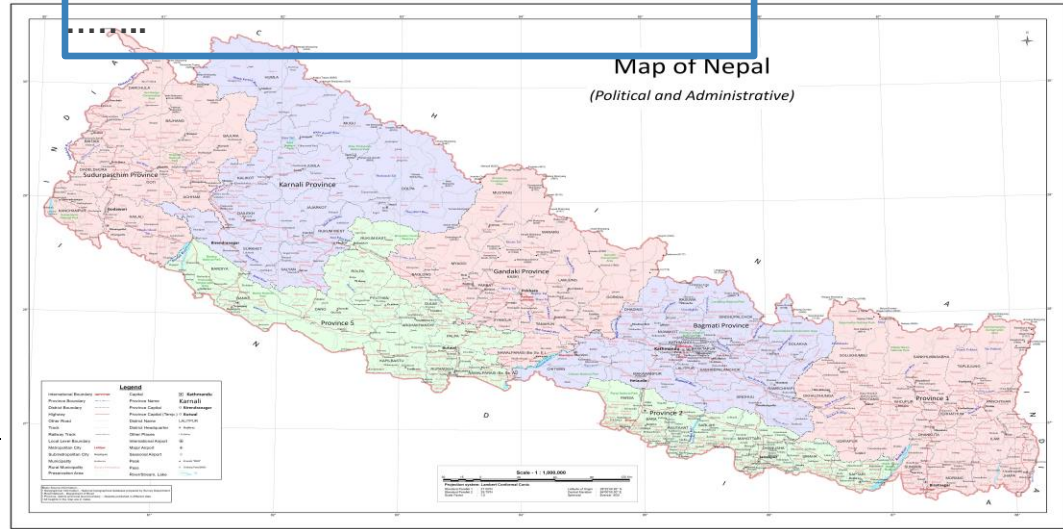
Setting the Scene…   Legal Framework for Land Issues

➢ Land policy
➢ Land use policy
➢ Land (Survey and Measurement) Act
➢ Land Revenue act
➢ Trust Corporation Act
➢ Land Acquisition Act
➢ Land related Acts
➢ Land Use Act
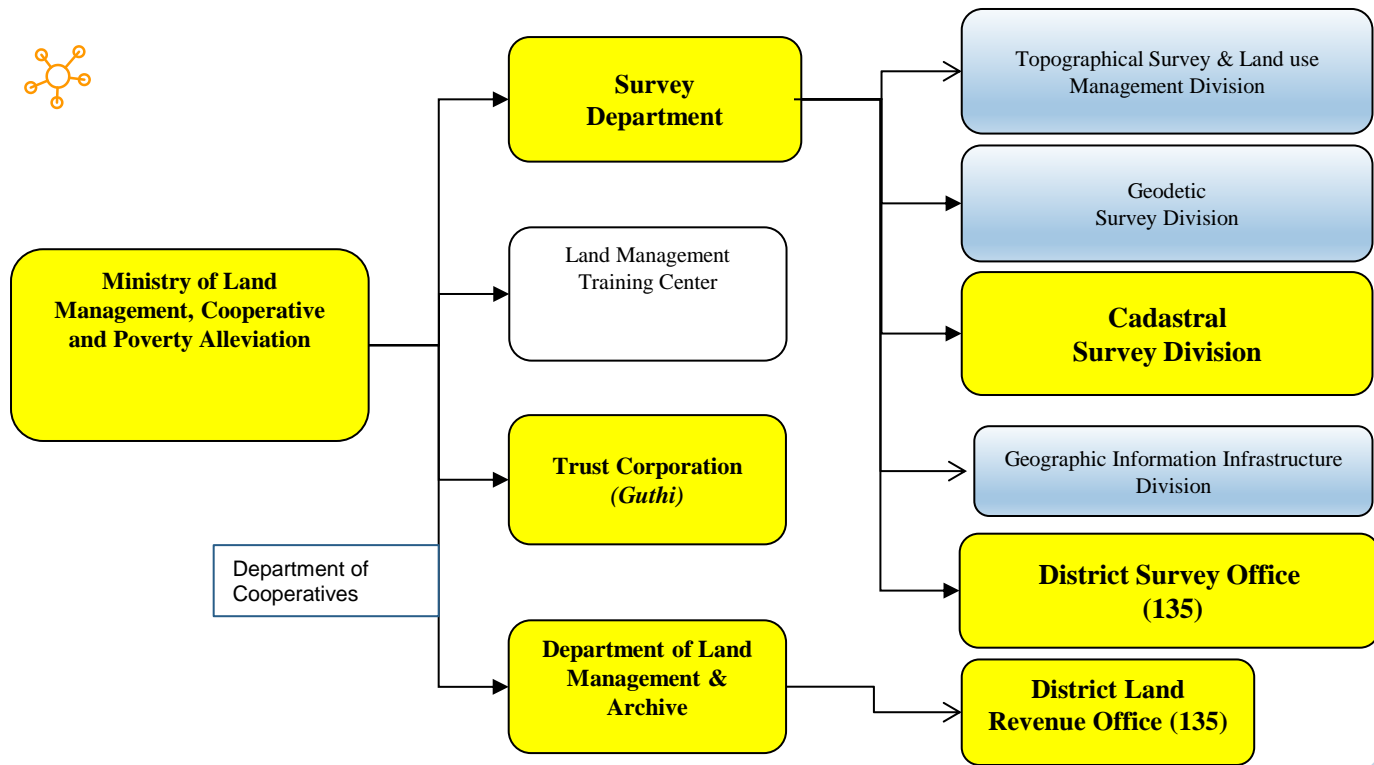➢ Regulations / Directives / Working manuals…
➢ etc.

Organizations Involved in LA

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National Mapping Organization

National Cadastral Surveying Organization

Organization responsible for technical works relating International Boundaries

Nodal Agency for the National Spatial Data Infrastructure

Survey Department: Activities/Program

➢ **Geodetic Program**

➢ **Topographical Survey and Land Use Management Program**

➢ **Geographical Information Infrastructure Program**

➢ **Cadastral Survey Program**

   1. **Re-Survey and Rural Village Block Survey (गाँउ ब्लक नापी)**
   2. **Special Survey for Rehabilitation of Cadastral Documents in conflict areas**
   3. **Service Delivery Strengthening Program**

1. Horizontal Control Survey
2. Levelling Survey
3. Gravity Survey
4. Strengthening of Geodetic Network
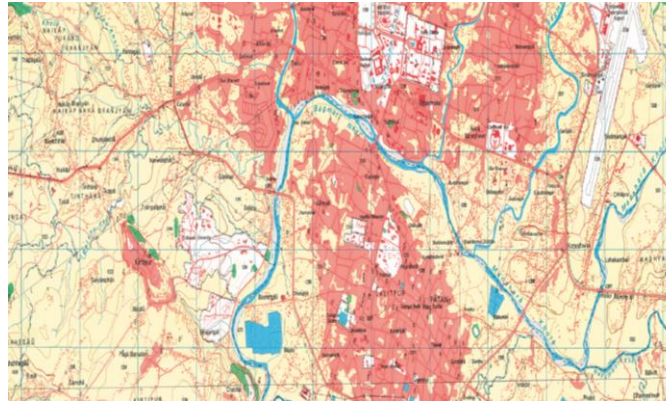
Topographical Survey and Land Use Management Program

1. Thematic Maps

2. Land Use Maps

3. Topographic Base Map Series

4. International Boundary Survey and Mapping

Land Use :
1. Agriculture
2. Residential
3. Commercial
4. Industrial
5. Mines and Minerals
6. Forest
7. Public
8. Culture and Archeological
9. Restricted
10. Others

NSDI Initiation In Nepal

NSDI Clearing House (Inline with IGIF)

➢ Metadata Services

➢ Clearinghouse Services (nationalgeoportal.gov.np)

1. Dissemination of GI through Clearing House
2. Freely Available Topographic Maps (1:1000000) and Administrative Boundary
3. Standardization of Geographical Information
4. Preparation of digital topographic database
5. LiDAR Survey

Point Cloud

Ortho Photo

SURVEY DEPARTMENT, GON
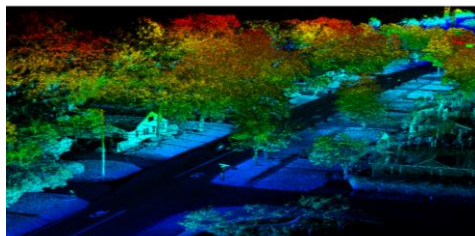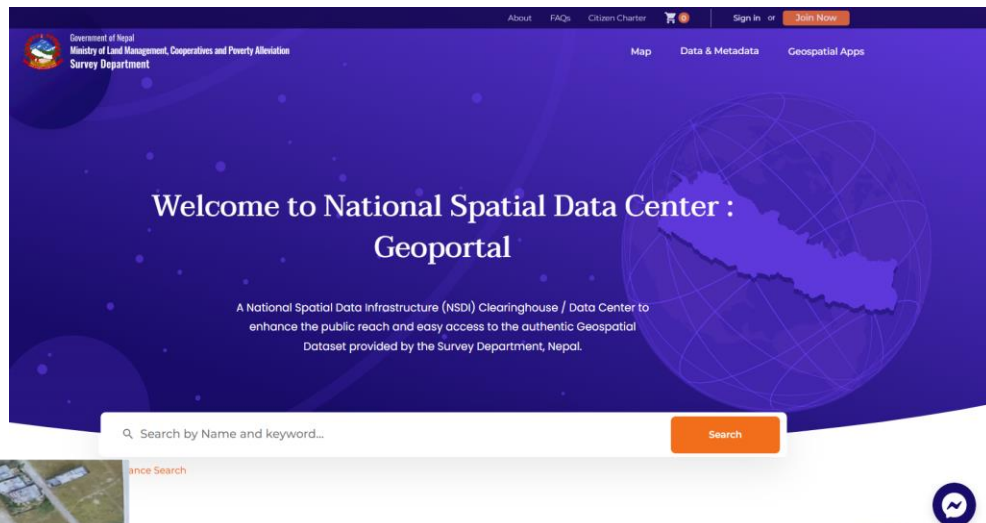
Cadastral Survey Programme: Activities

1. Preparation of Cadastral Documents,

2. Registration of land

3. Distribution of Land Ownership Certificates

4. Cadastral survey of rural blocks

5. Cadastral Resurvey with Technology advancement

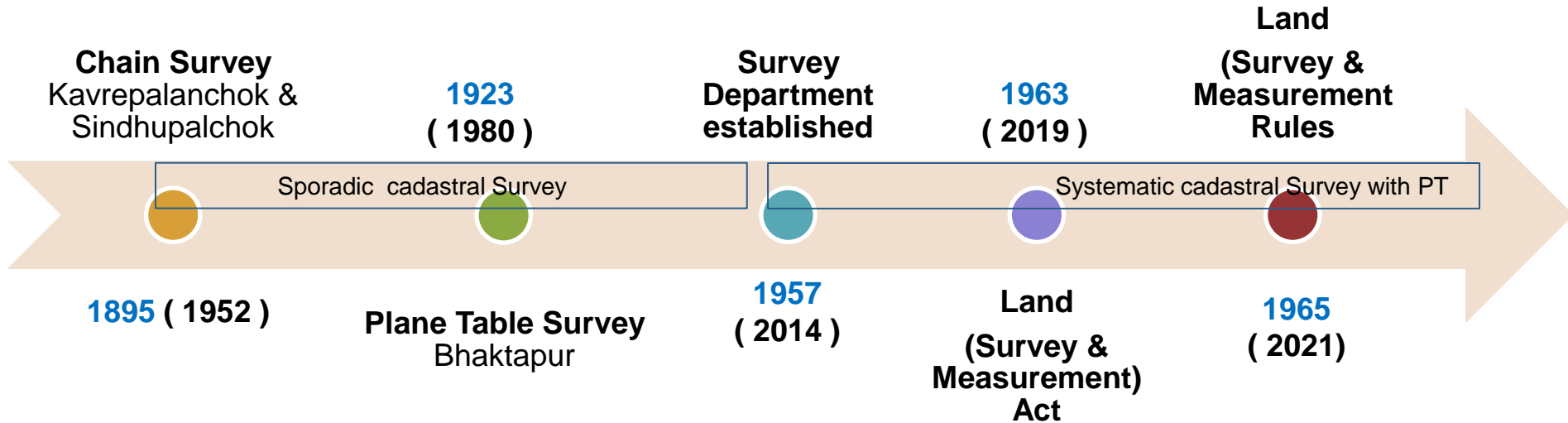6. Re-establishment of lost Cadastral Documents of the conflict area

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Land Revenue and Taxation
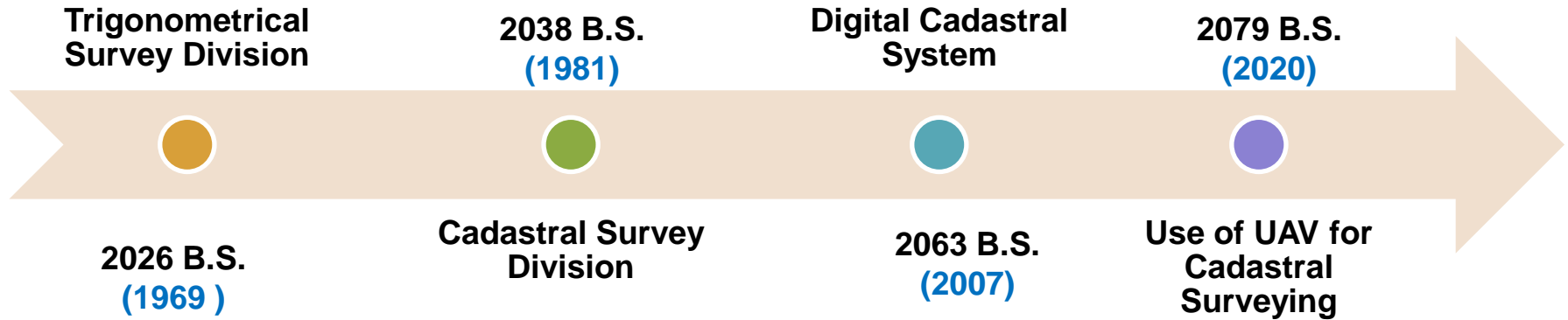
Land Documentation

Dispute Reduction and Governance Evolution

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History of Cadastral Surveying in Nepal

Chain Survey
Kavrepalanchok & Sindhupalchok

1923
(1980)

Survey Department established

1963
(2019)

Land
(Survey & Measurement Rules

Sporadic cadastral Survey

Systematic cadastral Survey with PT

1895 (1952)

Plane Table Survey
Bhaktapur

1957
(2014)

Land
(Survey & Measurement)
Act

1965
(2021)

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History of Cadastral Surveying in Nepal

Trigonometrical Survey Division

2038 B.S. (1981)

Digital Cadastral System

2079 B.S. (2020)

2026 B.S. (1969)

Cadastral Survey Division

2063 B.S. (2007)

Use of UAV for Cadastral Surveying

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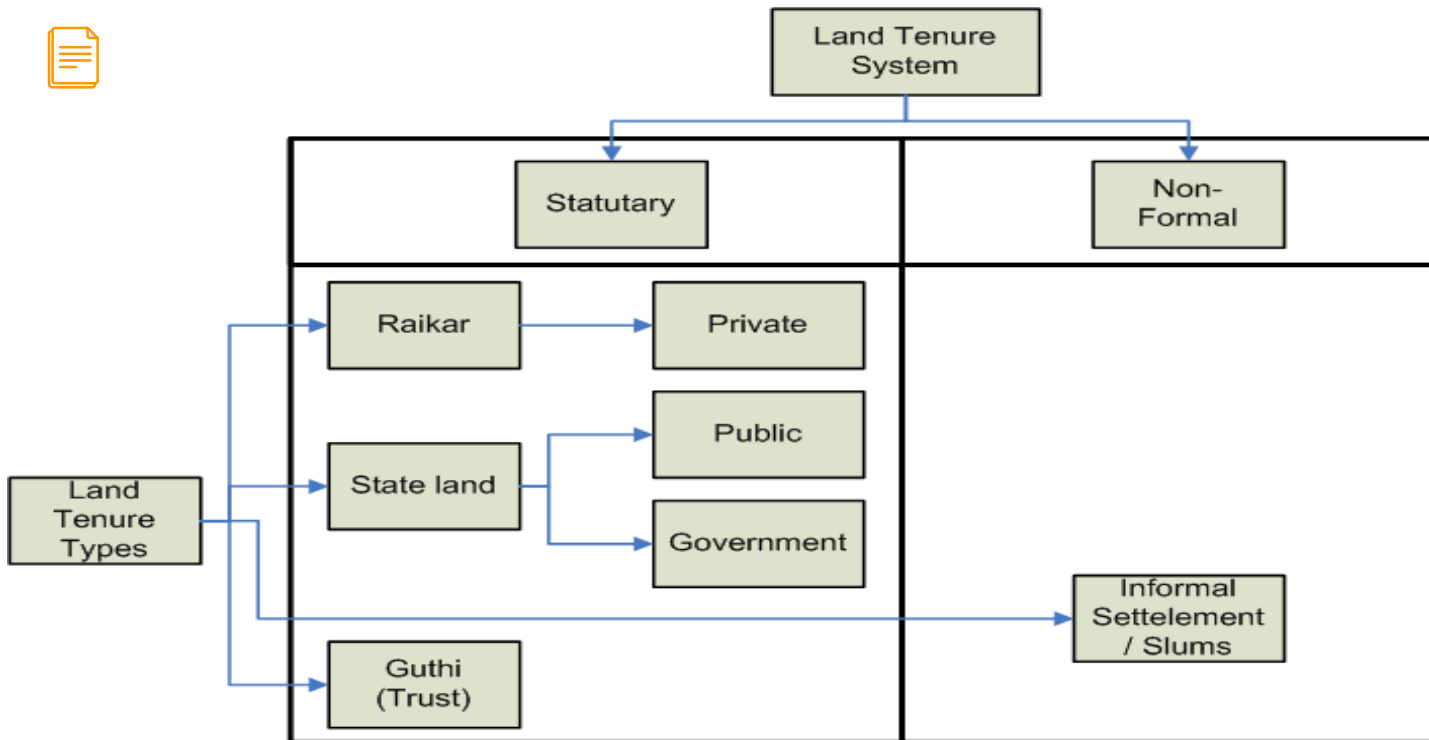
SURVEY DE

UAV Results
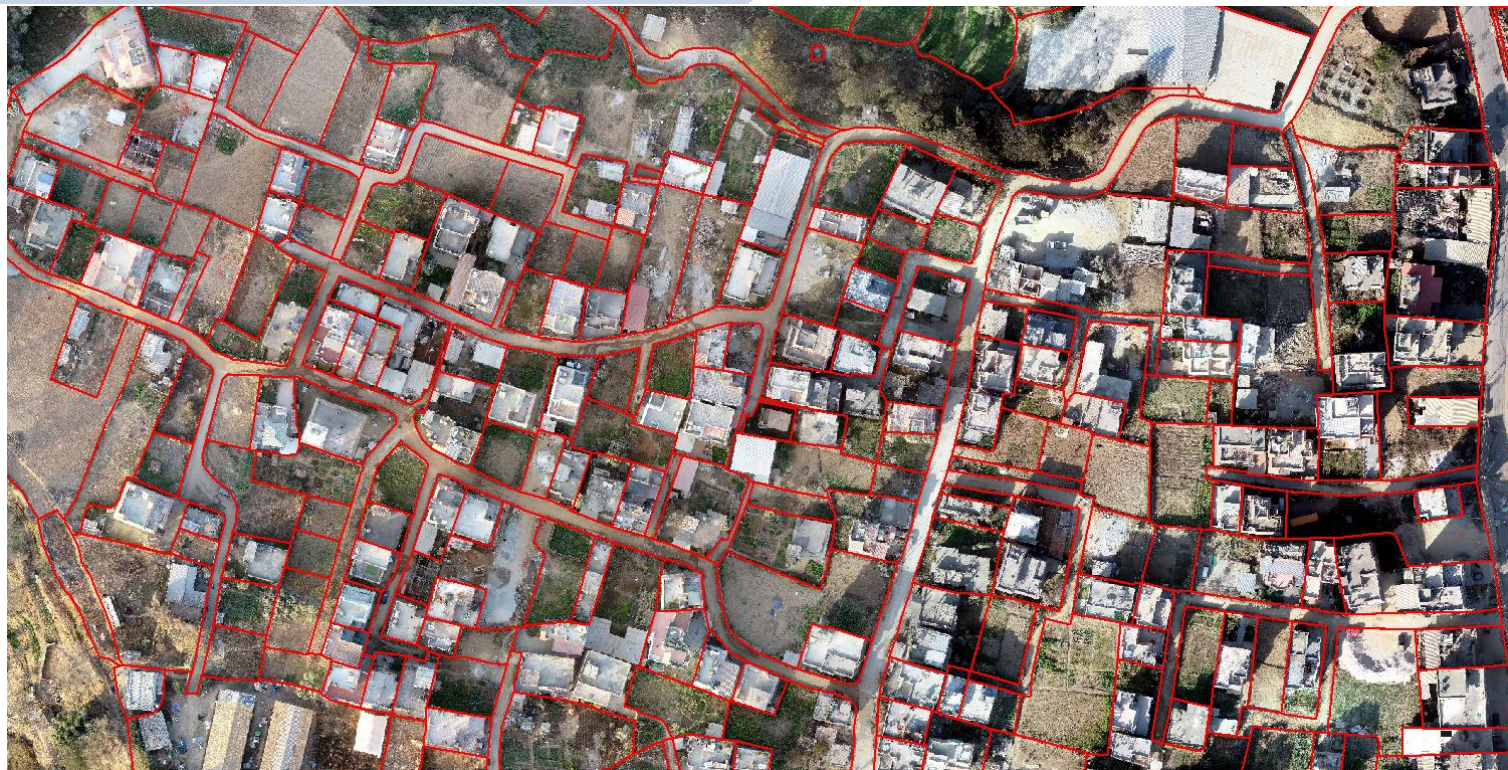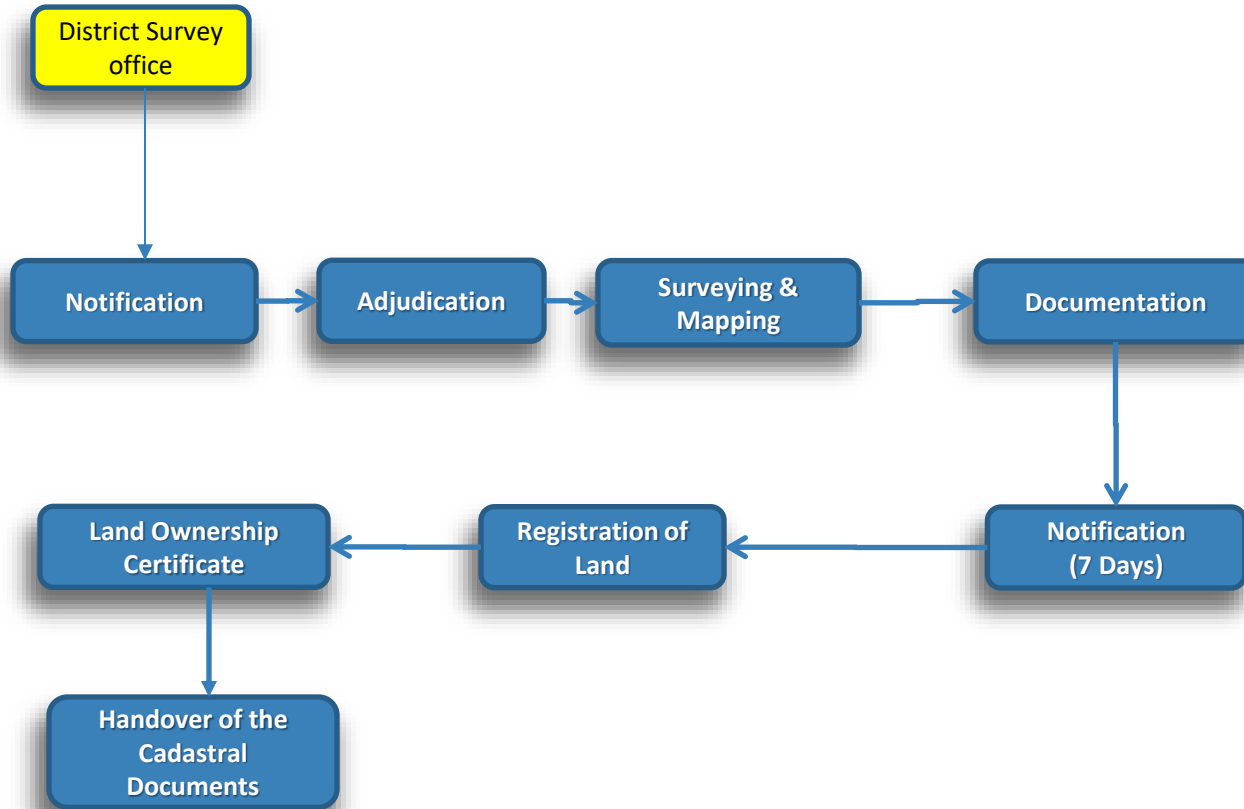
Land registration: Characteristic

1. The cadastre is systematic adjudication

2. Cadastral boundary is general boundary

3. Registration of deeds is negative system of land registration

4. Registration of deeds is compulsory signed by both parties

5. Restrictions, mortgage and information in deed are checked before conducting land transaction

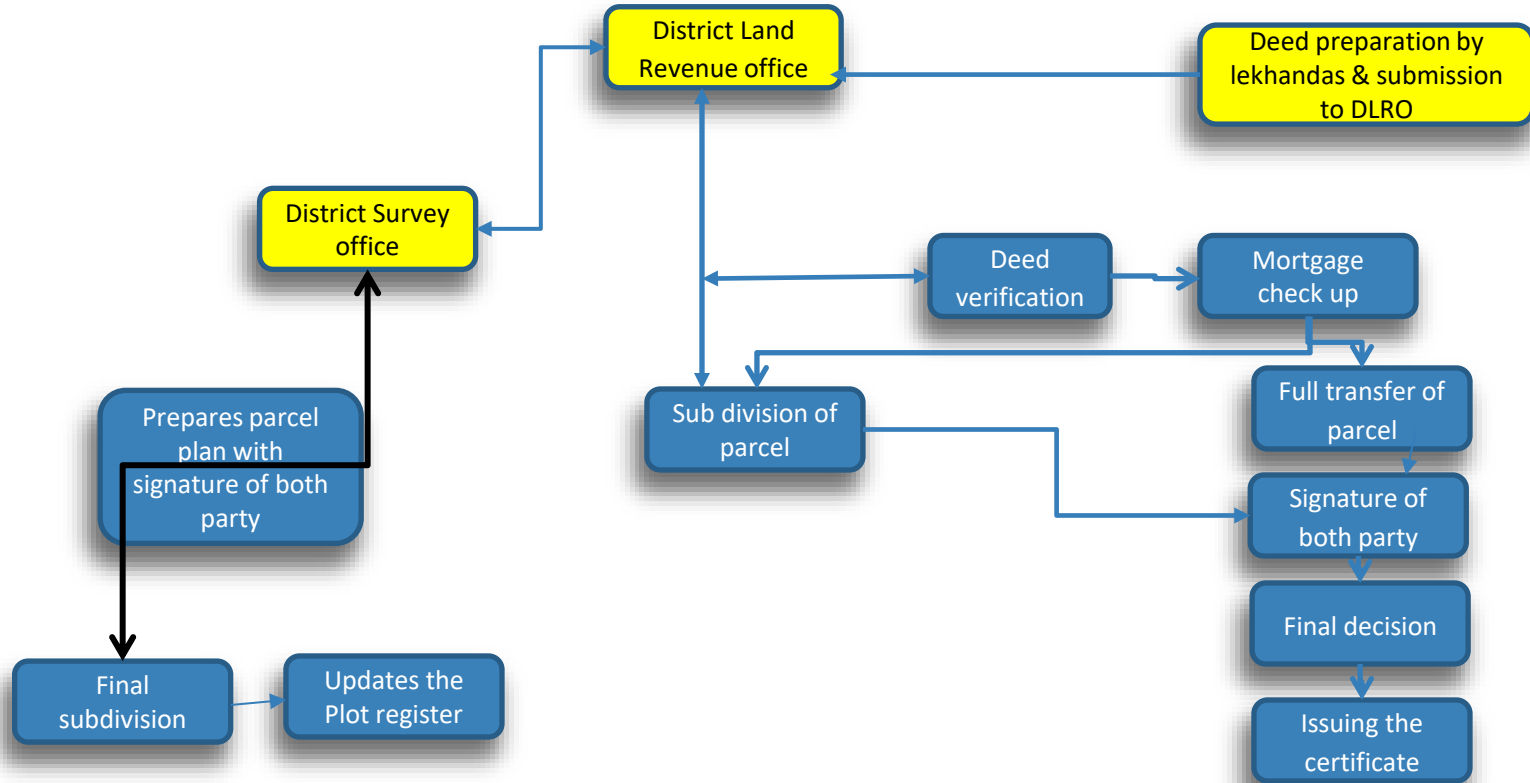6. Unique parcel number connects cadastral maps and the land registers

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Cadastral Mapping and Registration Process

District Survey office

Notification → Adjudication → Surveying & Mapping → Documentation

Notification (7 Days)

Registration of Land

Land Ownership Certificate

Handover of the Cadastral Documents

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Service Delivery : Land Transaction Process

District Land Revenue office

Deed preparation by lekhandas & submission to DLRO

District Survey office

Deed verification

Mortgage check up

Prepares parcel plan with signature of both party

Sub division of parcel

Full transfer of parcel

Signature of both party

Final decision

Final subdivision

Updates the Plot register

Issuing the certificate

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1. Manual recording and updating of land records.

2. Use of paper maps and handwritten documents.

3. Ammonia print (Blueprint) map.

4. Handwritten copies of the field book and plot register.

5. Parcel subdivision on the original perma-trace sheets.

1. Time-consuming processes for updates and access.

2. Prone to damage, loss, and human errors.
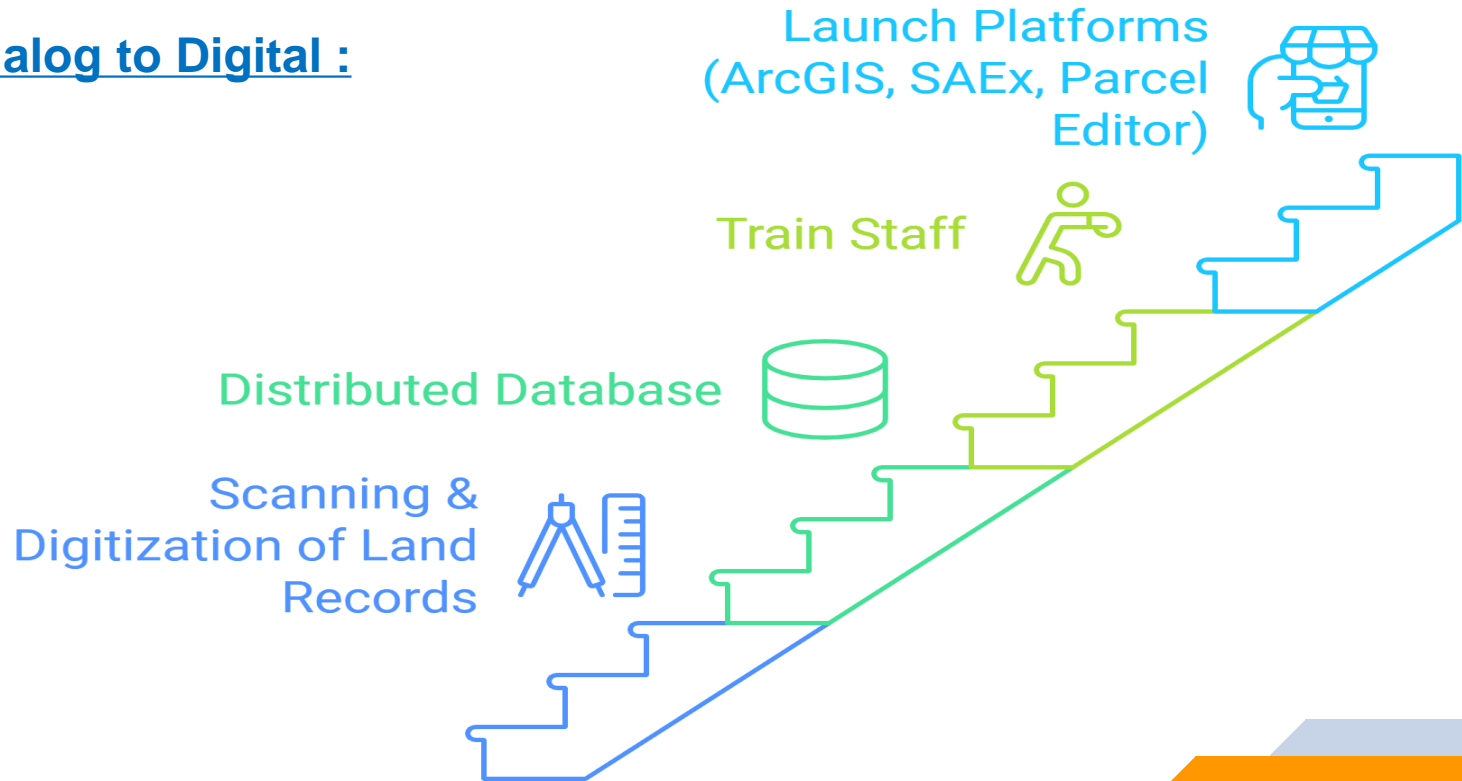
3. Difficulties in managing and retrieving data.

Digital Transformation Cadastre

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1st Phase: Analog to Digital :

Launch Platforms
(ArcGIS, SAEx, Parcel Editor)

Train Staff

Distributed Database

Scanning &
Digitization of Land Records

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Nationwide Coverage
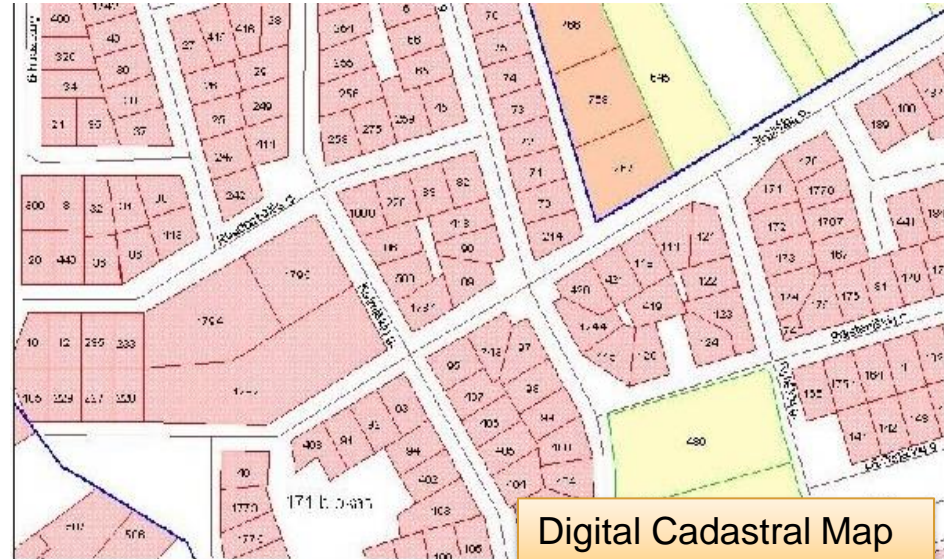
Analogue Map

Digital Cadastral Map

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Way of working
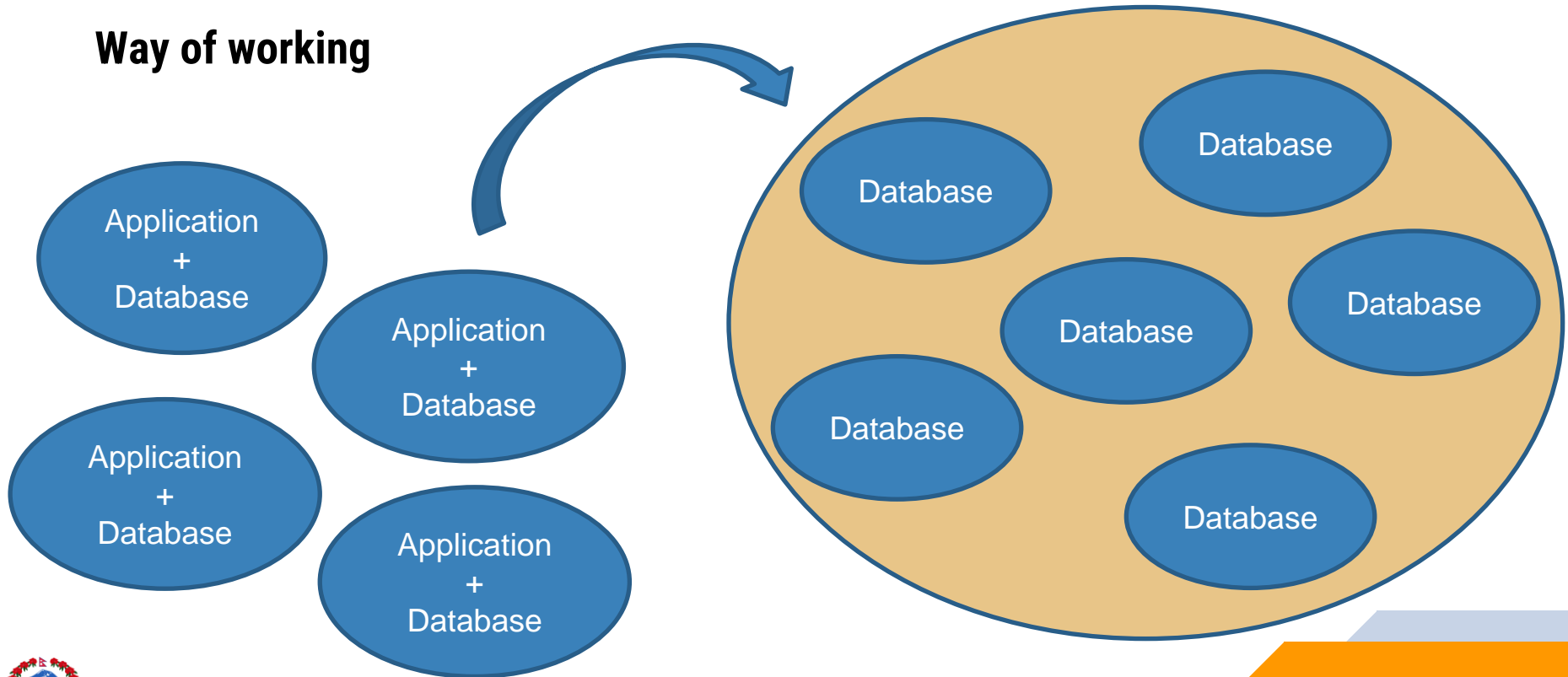
1. District Revenue office

➢ Land Record Information Management System (LRIMS)

➢ PAM (Public Access model)

2. District Survey Office

➢ Nepal Land Information System (NeLIS)
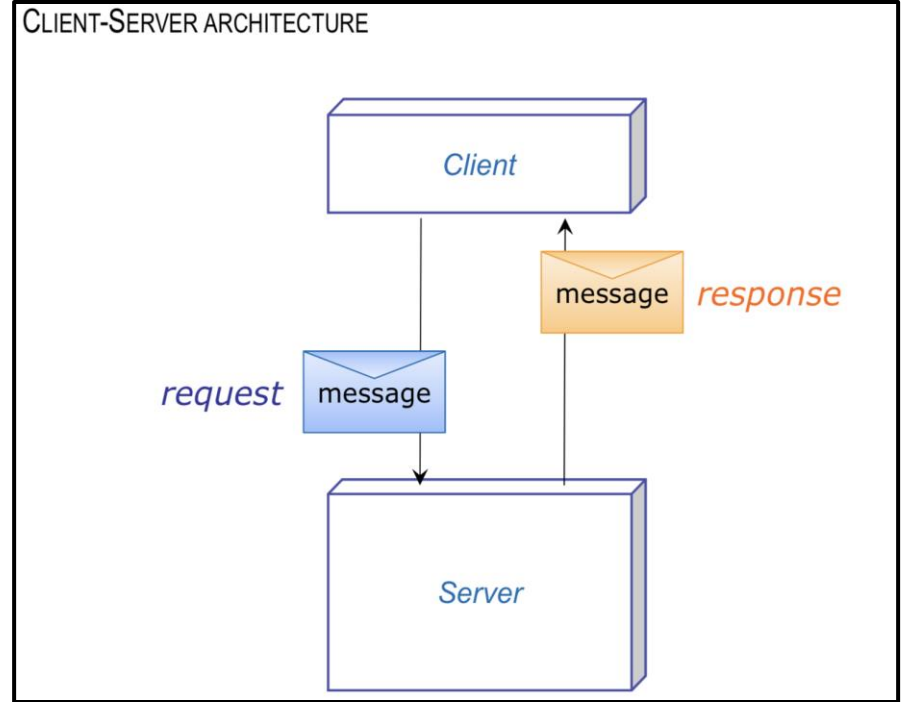
➢ Mero Kitta (Public Access Portal)

NeLIS र Mero Kitta

2nd Phase: Service Delivery:
(NeLIS and Mero Kitta)

4 major pillars during the system launch

1. System Development

2. Capacity Development
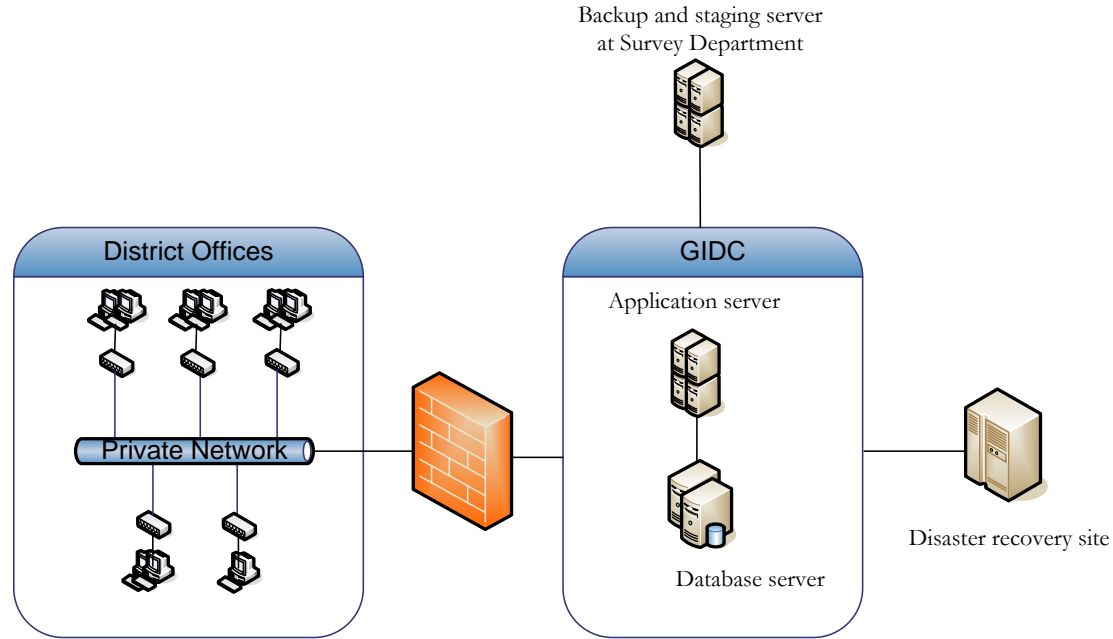
3. Infrastructure Development

4. Service Delivery

CLIENT-SERVER ARCHITECTURE

Client

message *response*

request message
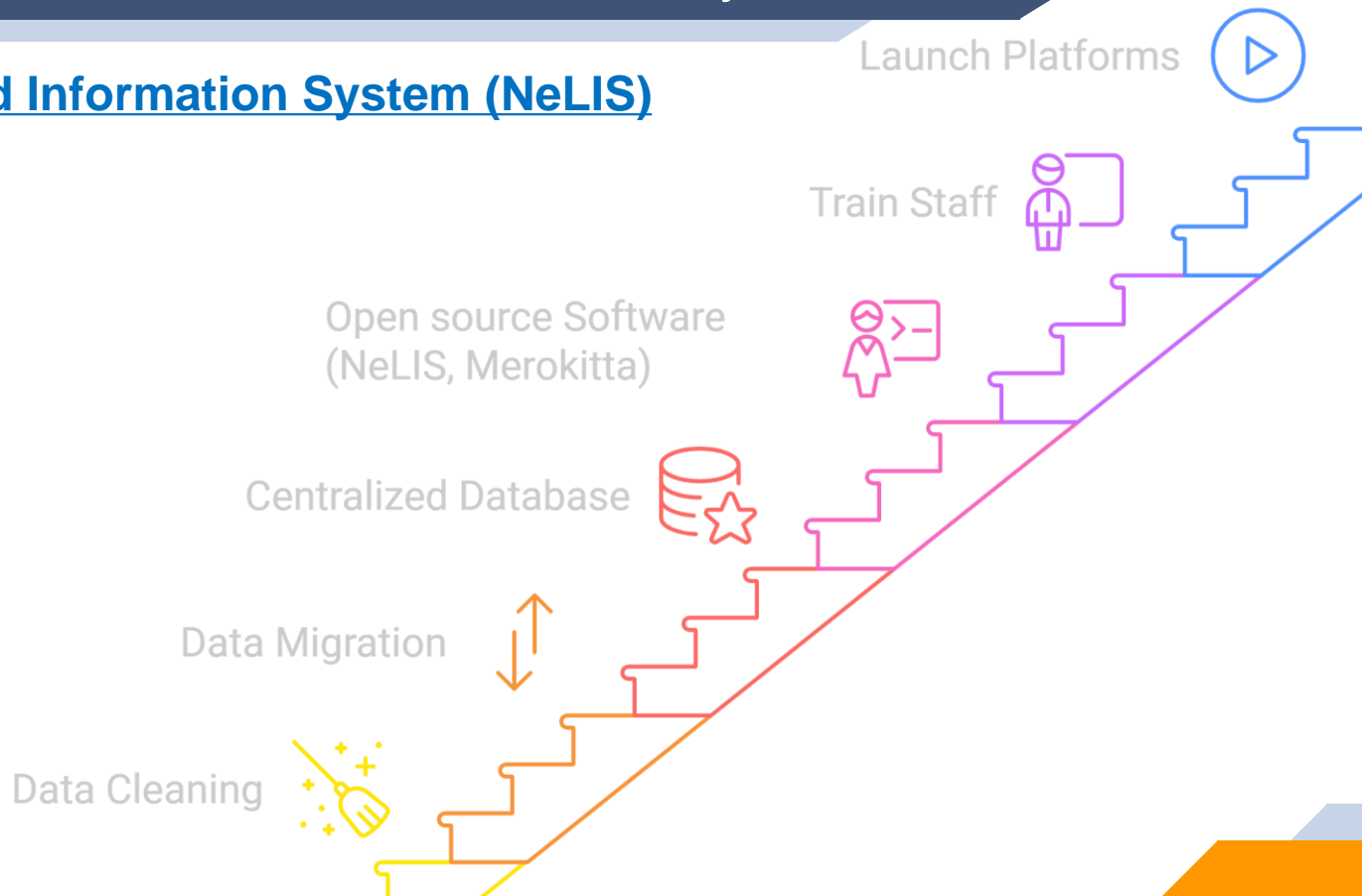
Server

Nepal Land Information System (NeLIS)

1. Open source based solution
2. User Management
3. History Management
4. Daily Transaction Management System
5. Central storage of all data
6. Web Application / Desktop Application

Backup and staging server at Survey Department

District Offices

Private Network

GIDC

Application server

Database server

Disaster recovery site

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Nepal Land Information System (NeLIS)

Launch Platforms

Train Staff

Open source Software
(NeLIS, Merokitta)

Centralized Database

Data Migration

Data Cleaning

Nepal Land Information System (NeLIS)

1. Centralized Database & Application system.

2. A4 and A3 computer printed Maps

online as well.
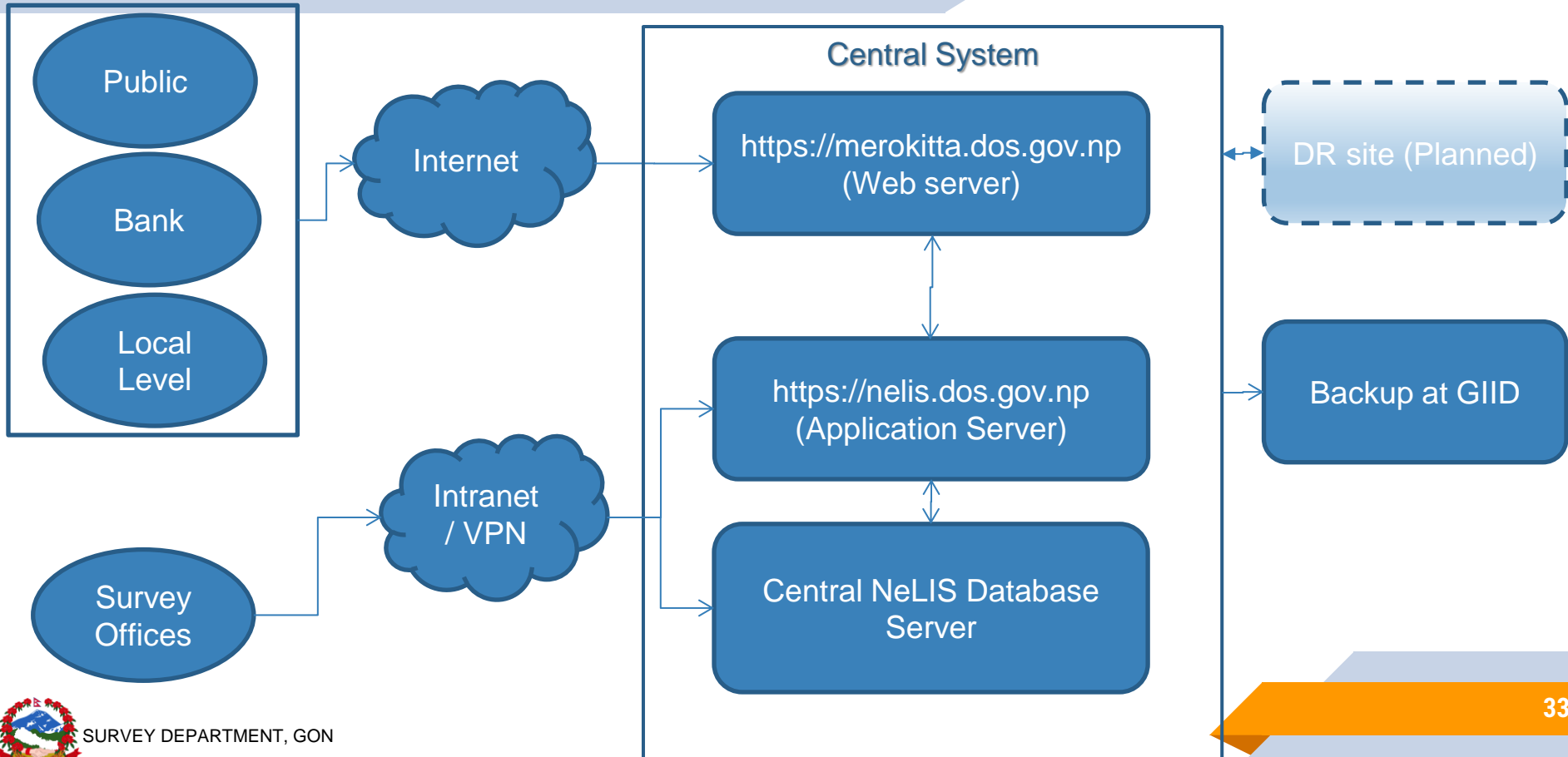

3. Printed copies of field book and plot register.

4. Parcel subdivision using NeLIS Software.

Digital Transformation: Service Delivery

Public

Bank

Local Level

Internet

Survey Offices

Intranet / VPN

Central System

https://merokitta.dos.gov.np
(Web server)

https://nelis.dos.gov.np
(Application Server)

Central NeLIS Database Server

DR site (Planned)

Backup at GIID

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Intranet Connectivity Monitoring

नेपाल सरकार
भूमि व्यवस्था,सहकारी तथा गरिबी निवारण मन्त्रालय
नापी विभाग
मिनभवन, काठमाडौं

🏠 गृहपृष्ठ   📧 सेवालिनको लागी निवेदन   🔍 निवेदनको अवस्था   🔍 कारोबारको अवस्था   ❓ सहयोगको लागी   🔒 संस्थागत लगईन

☑ साधारण प्रयोगकर्तासँग हुनुपर्ने कागजातहरु

👥 **जग्गाधनी प्रमाणपुर्जा**
पढ्न र बुझ्न सकिने १ MB वा सो भन्दा सानो साईजमा जग्गाधनी प्रमाणपुर्जाको स्क्यान कपी

जग्गाधनीको नागरिकता
पढ्न र बुझ्न सकिने १ MB वा सो भन्दा सानो साईजमा प्रमाणपुर्जामा अवस्थित जग्गाधनीको नागरिकताको स्क्यान कपी

✅ माथि भने अनुसारको बिबरणहरु जम्मा गरी सेवा लिने निवेदन को फारम भरी विवरण पेश गर्नुहोस।

✅ सेवाको लागि निवेदन पेश गरी सकेको भए सो को अवस्था चेक गर्न यहां क्लिक गरी आवश्यक (Mobile No, OTP) विवरण दिई हेर्नुहोस।

नापी कार्यालियमा पेश गर्ने निवेदन

देहायबमोजिमको बिबरण भरी संबन्धित नापी कार्यालयमा पेश गर्नुहोस । अन्यकुराहरु जानकारी लिनको लागी FAQ मा जानुहोस ।

सेवाको विवरण

सेवा लिने कार्यालय *
छान्नुहोस् ▼

सेवा लिने स्थानिय तह *
छान्नुहोस् ▼

सेवाको प्रकार *
छान्नुहोस् ▼

जग्गाधनी विवरण

जग्गाधनीको नाम थर *
owner full name

मोबाईल न. *
98xxxxxxxxxx

जग्गाधनी प्रमाणपुर्जा स्क्यान *
Choose File   no file selected

नागरिकता स्क्यान *
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अरु कागजातहरु
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नागरिकता नं. *
citizenship no

जारी मिती *
YYYY-MM-DD

जारी जिल्ला *
छान्नुहोस् ▼

जग्गाधनी प्रमाणपुर्जा अनुसार जग्गाको विवरण

साबिक गा.बि.स./न.पा. *
छान्नुहोस् ▼

वडा नं. *
छान्नुहोस् ▼

नक्सा नं. *
छान्नुहोस् ▼

किता नं *
parcel no   ➕

🗑 रद्द गर्नुहोस्   ✈ पेश गर्नुहोस्

Online Service

निवेदन दर्ता गर्दाको मोबाईल नम्बर र सो मोबाईलमा आएको OTP कोड दिएर अवस्था हेर्नुहोस

मोबाईल न.

9851365721

OTP Code

hx0450

🔍 खोजी गर्नुहोस

OTP अनुसार कारोबारको अवस्था

नक्सा प्रिन्ट

दर्ता नं : 43120
दर्ता मिति : 2081-6-2
कार्यालय : नापी कार्यालय, ललितपुर

हालको अवस्था : **Delivered**
कैफियत : Downloaded file with id (18215) of requestid (43120)

तपाईको कारोबार पुरा भएको छ। फाईल डाउनलोड गर्न तलको लिंक क्लिक गर्नुहोस्। नापी कार्यालयबाट प्राप्त फाईलहरु १५ दिन भित्र डाउनलोड वा प्रिण्ट गरी सुरक्षित गर्नुहोस्।
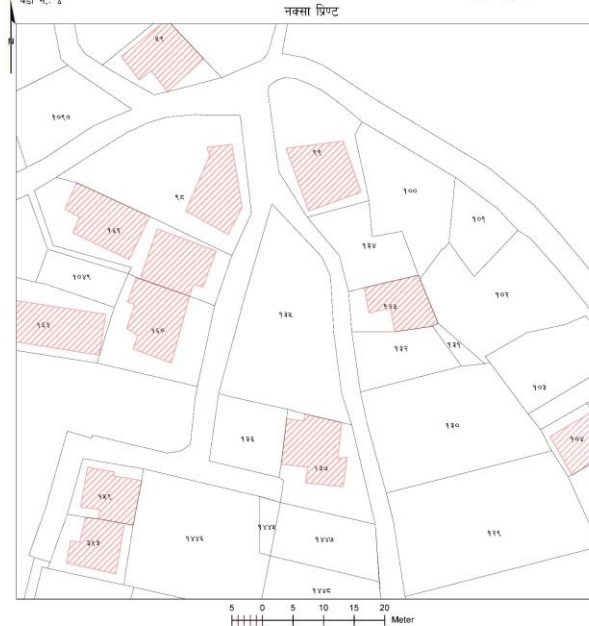
Online Service

नेपाल सरकार
भूमि व्यवस्था,सहकारी तथा गरिबी निवारण मन्त्रालय
नापी विभाग
नापी कार्यालय, कलंकी

Dashboard for Tracking status of transaction : Transparency

कारोबारहरुको बिवरण

मिति **२०८१-०६-०८** देखी **२०८१-०६-०८** सम्म

S.N.	कारोबार नं.	फांट नं.	मिति	कारोबार किसिम	कारोबारको उप-किसिम	जग्गा/कित्ता विवरण	कारोबारको अवस्था
1	२७०३८१८२०००९७३४	फांट-१	२०८१/०६/०८	कित्ता काट	मा पो का को पत्रानुसार	छैमले-६-१२९, छैमले-६-१२७	कित्ता काट/एकीकरण/अध्यावधिक कार्य हुँदै छ
2	२७०३८१८२०००९६९०	फांट-४	२०८१/०६/०८	कित्ता एकिकरण		भीमदुङ्गा-५-४३६, भीमदुङ्गा-५-१८१	चेक जाँच सम्पन्न
3	२७०३८१८२०००९६७८	फांट-५	२०८१/०६/०८	कित्ता एकिकरण		--	प्रमाणित (कार्य सम्पन्न)
4	२७०३८१८२०००९६७६	फांट-५	२०८१/०६/०८	कित्ता काट	राजिनामा	शेषनायायण-६-१६९, शेषनायायण-६-९४	कित्ता काट/एकीकरण/अध्यावधिक कार्य हुँदै छ
5	२७०३८१८२०००९६५८	फांट-२	२०८१/०६/०८	कित्ता काट	राजिनामा	--	कित्ता काट/एकीकरण/अध्यावधिक कार्य हुँदै छ
6	२७०३८१८२०००९६४४	फांट-५	२०८१/०६/०८	कित्ता काट	अंशवण्डा	--	प्रमाणित (कार्य सम्पन्न)
7	२७०३८१८२०००९५८६	फांट-१	२०८१/०६/०८	कित्ता एकिकरण		दहचोक-६-५७४, दहचोक-६-५९७	दर्ता सम्पन्न भयो

जम्मा 7 रेकर्डहरु भेटियो
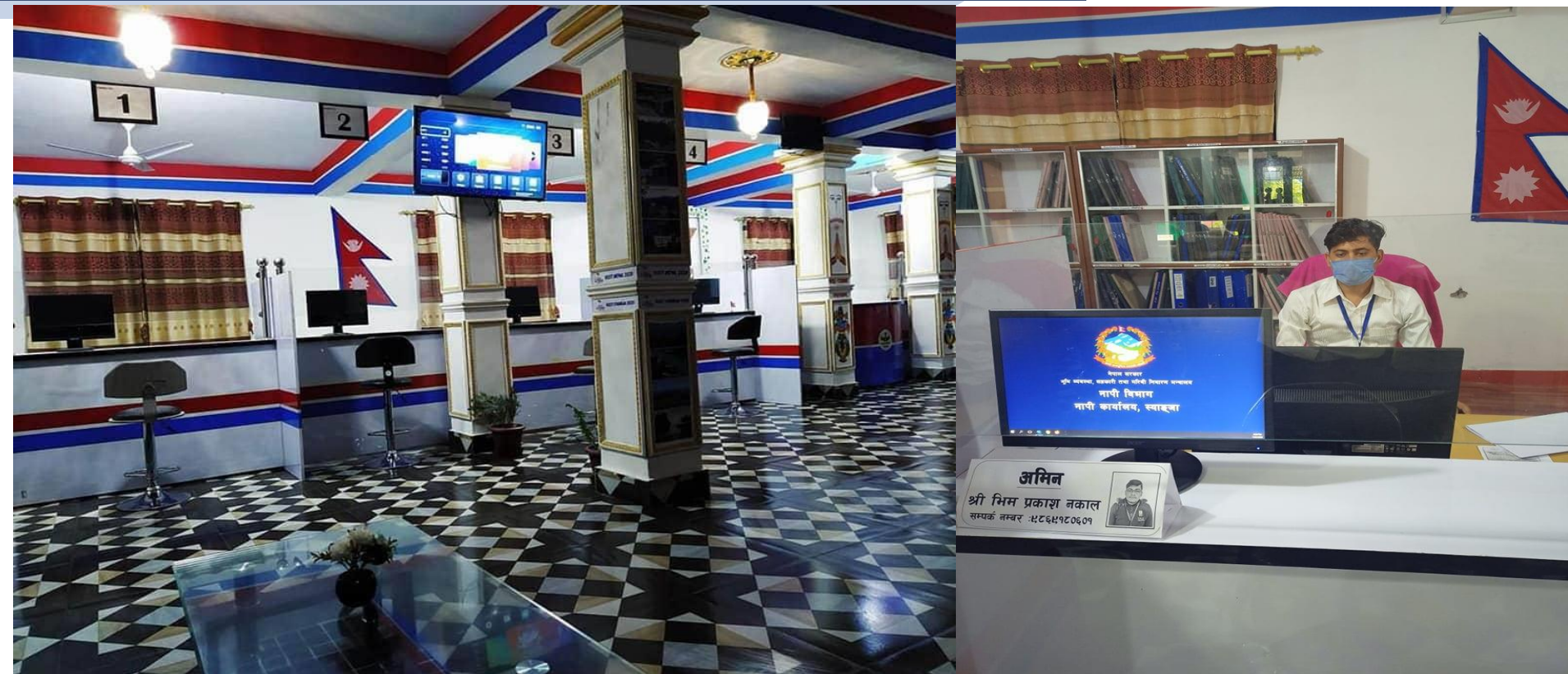
कारोबारको अवस्था चेक गर्नुहोस

कारोबार नम्बर

250181820010437   🔍 खोजी गर्नुहोस

Web facility for Checking the status of transaction : transparency

नापी कार्यालय, ललितपुर

कार्यालय	नापी कार्यालय, ललितपुर
दर्ता नं.	११४५२९
दर्ता मिति	2081/05/28
कारोबारको प्रकार	कित्ता काट
कारोबारको उप-प्रकार	राजिनामा

①——②——③——④
दर्ता सम्पन्न   कित्ता कारोबार सुरुवात   कित्ता कारोबार सम्पन्न   प्रमाणित

स्थिति	मिति/समय	युजर	कैफियत
Split/Merge/Update Complete	2081/05/28 11:59 AM	sudha	कि.का.
Checked	2081/05/31 04:45 PM	176610	चेक

SURVEY DEPARTMENT, GON

Land Administration Services

SURVEY DEPARTMENT, GON

Land Administration Services

Survey Offices (NeLIS & *MeroKitta*)

Local Level | Banks | Citizen

MeroKItta ← NeLIS

MeroKItta outputs:
Map Print,
Field book print
Plot Register print
Online E-payment

NeLIS outputs:
Cadastral Sub-division
Map Print
Field book print
Plot Register print
Land Register…….
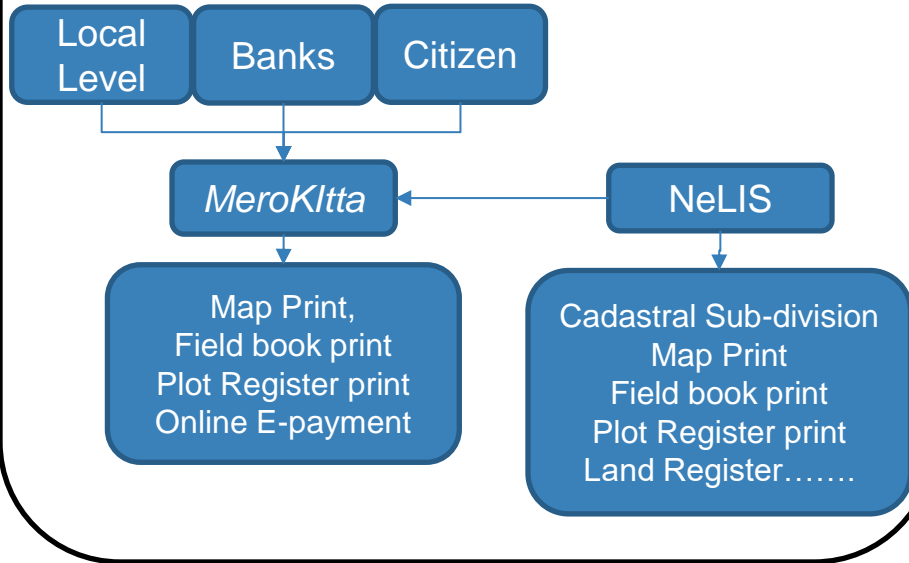
Integration

Land Revenue Offices (Land Record Information Management System (LRIMS))

Public Access Model

↓

LRIMS

↓

Deed registration
Ownership transfer
Mortgage
….

SURVEY DEPARTMENT, GON
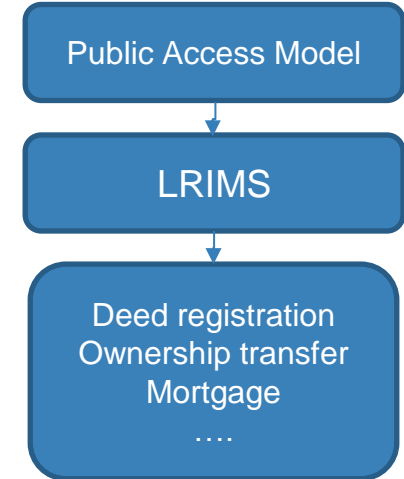
Prospect and Plans

First Phase

Complete National Coverage

Plans to cover all Survey Offices with NeLIS and Merokitta system within FY 2082/83.

Second Phase

Integration of LRIMS and NeLIS for One Stop Shop

Third Phase

Continuous Improvement and Innovation

Ongoing updates to technology and processes.

Fast, Reliable and Stable intranet connection

We can say that

The System:

➢ Supports in Management of Land records and Archives

➢ Supports in Regulation and Monitoring

➢ Supports Online Service Delivery

➢ System supports transparency

➢ Ultimately Supports Good Land Governance

➢ …………….

SURVEY DEPARTMENT, GON

THANK YOU FOR LISTENING !!!

SURVEY DEPARTMENT, GON