

Re-engineering of the Forestry GSB platform

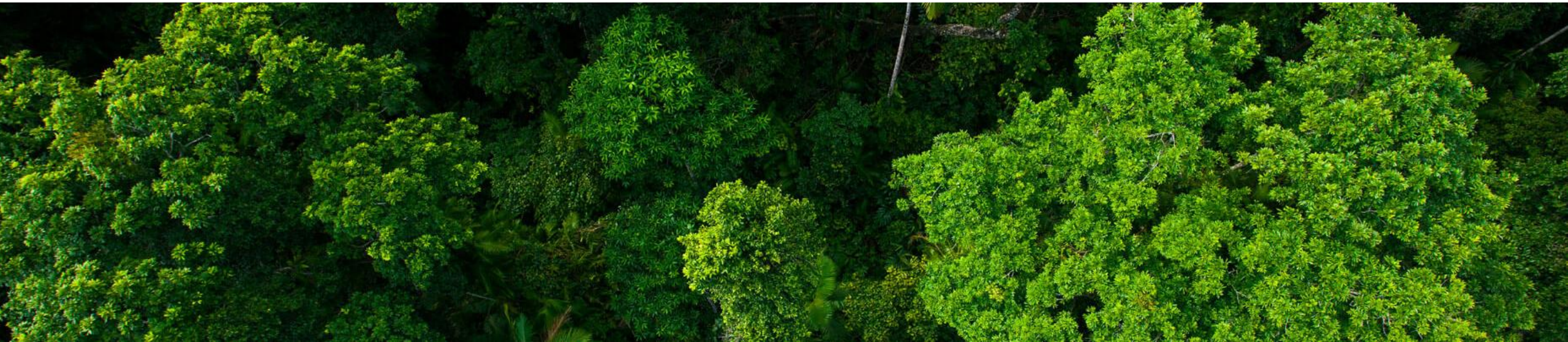
Integrating Timber Traceability

Susan Chishimba
susan@corelink.co.zm

Presented by:



CoreLink



BACKGROUND

- In recent years, the timber industry in Zambia has faced increasing scrutiny regarding sustainable practices and regulatory compliance.
- To address these challenges, the integration of a Timber Traceability Feature has become imperative.
- This feature aims to enhance transparency, improve resource management, and ensure that all timber products sourced from Zambia adhere to national and international timber traceability standards.



Project Objectives



**FULL TRACEABILITY
FUNCTIONALITY ACROSS
5 KEY SERVICES.**



**INTEGRATION OF MOBILE
APPLICATION WITH GSB
SYSTEM.**



**INTEGRATION OF GIS ON THE
FORESTRY SYSTEM.**

Corelink Consulting – Certified GSB Development Team



Some of the Corelink developers actively participating in the 3 week in-person training part of the 6-month training program.



COO for Corelink Consulting Susan Chishimba flanked by National Coordinator and the other company executives and the Accountant General

Team Members

Susan Chishimba

(Product Owner)

- Oversees vision, strategy & execution
- Manages product backlog & prioritizes tasks
- Ensures alignment between stakeholders & team

Maambo Munkuli

(Business Analyst)

- Gathers & analyzes business requirements
- Creates user stories & functional specs
- Ensures requirements are met throughout development

Musa Twabi

(Sr. Developer/Tech Lead)

- Leads development & technical decisions
- Ensures scalability, security, & performance
- Conducts code reviews & guides developers

Lubomba Mulomya & Ben Kabidiki

(Developers)

- Develop front-end & back-end features
- Ensure seamless system integration
- Collaborate with the Tech Lead for quality execution

Joseph Wamulume / David Witika

(QA Engineer)

- Develops test plans & executes testing
- Identifies & fixes defects
- Ensures product meets quality standards

Brian Sipula / Justin Chiluwe

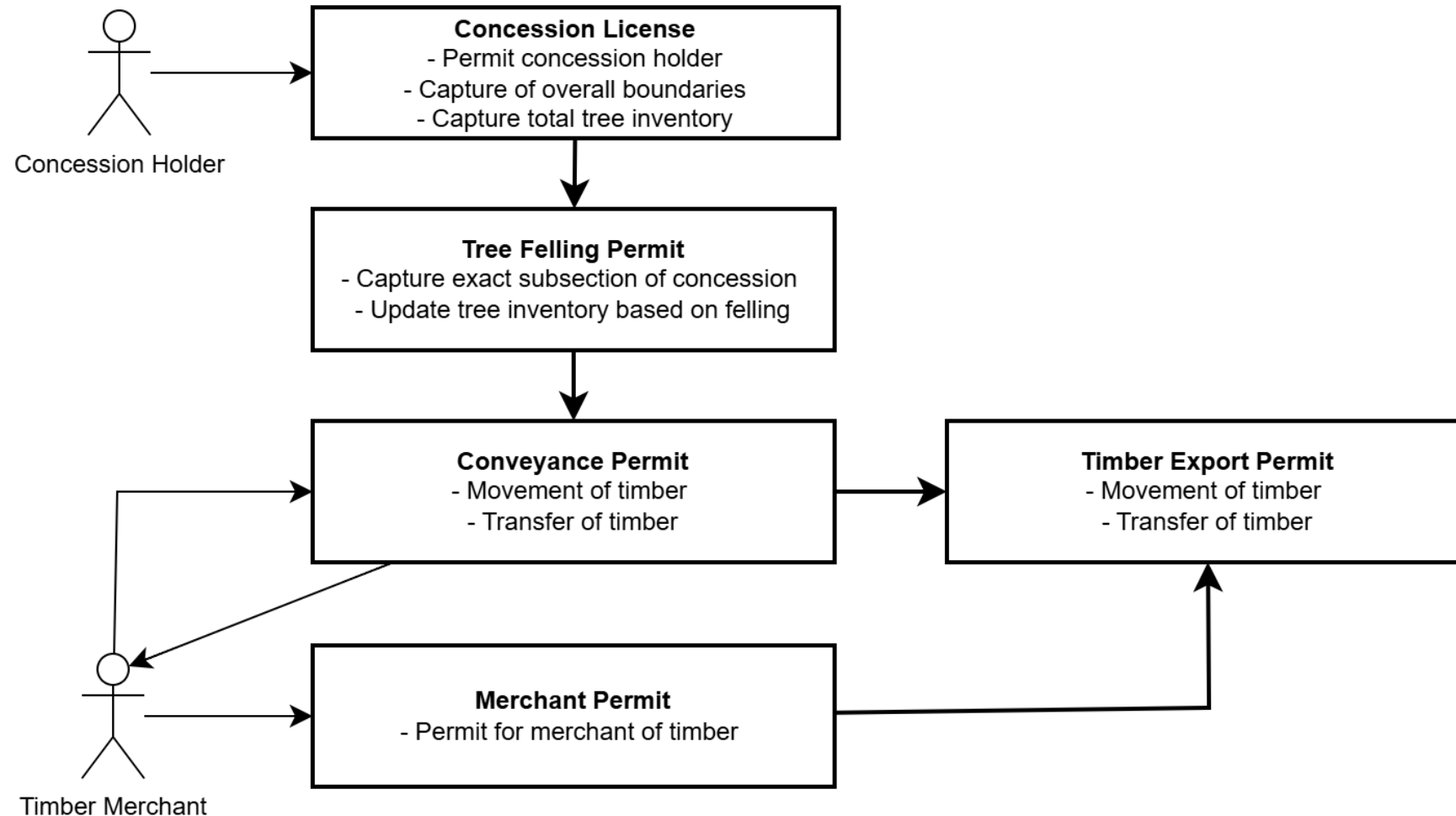
(DevOps Engineer)

- Manages CI/CD pipelines & infrastructure
- Ensures security, scalability & reliability
- Optimizes performance for smooth deployment

Targeted Services

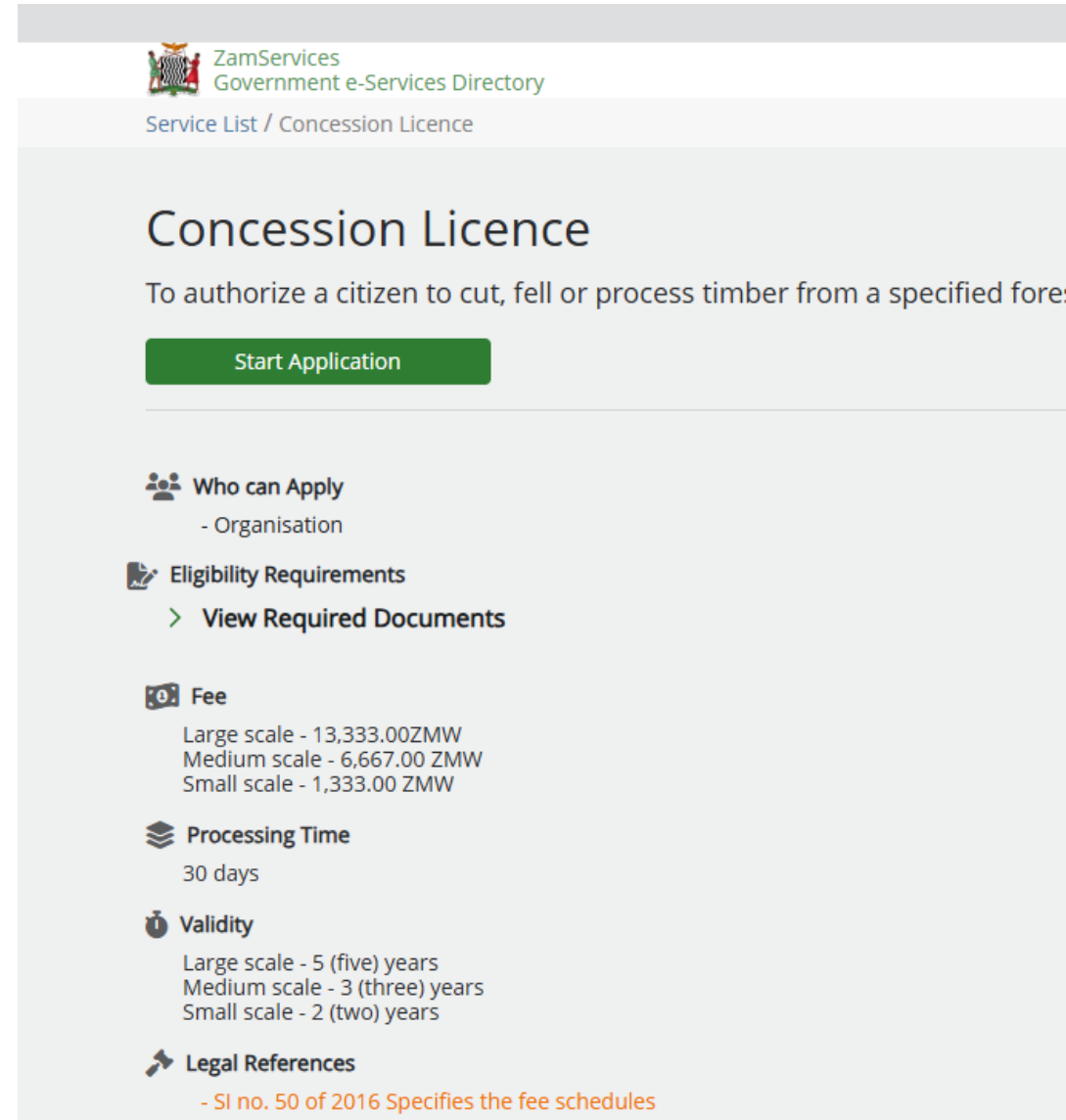
- Re-engineered **5 services** to include timber traceability
 - 1. Concession Licence**
 - 2. Tree Felling Permit**
 - 3. Conveyance Permit**
 - 4. Forest Produce Merchant Permit**
 - 5. Timber Export Permit**
- Upgraded **4 additional** non-timber related services to the new framework

Process Workflow TTS Related Services



Service 1: Concession Licence

- Capture of exact boundaries (GIS module)
- Capture detailed tree inventory
- Concession license will act as foundation for:
 1. Production Permit
 2. Tree Felling Permit
 3. Conveyance Permit
 4. Timber Export Permit



The screenshot displays the ZamServices Government e-Services Directory interface. At the top, the logo and name 'ZamServices Government e-Services Directory' are visible, along with a breadcrumb trail 'Service List / Concession Licence'. The main heading is 'Concession Licence', followed by a description: 'To authorize a citizen to cut, fell or process timber from a specified forest'. A prominent green button labeled 'Start Application' is positioned below the description. The page is organized into sections, each with an icon and a title: 'Who can Apply' (people icon) with the sub-point '- Organisation'; 'Eligibility Requirements' (document icon) with a link '> View Required Documents'; 'Fee' (currency icon) with a list of scales: 'Large scale - 13,333.00ZMW', 'Medium scale - 6,667.00 ZMW', and 'Small scale - 1,333.00 ZMW'; 'Processing Time' (stack of papers icon) with the value '30 days'; 'Validity' (clock icon) with a list of scales: 'Large scale - 5 (five) years', 'Medium scale - 3 (three) years', and 'Small scale - 2 (two) years'; and 'Legal References' (gavel icon) with the note '- SI no. 50 of 2016 Specifies the fee schedules'.


ZamServices
Government e-Services Directory


Service List / Concession Licence


Concession Licence


To authorize a citizen to cut, fell or process timber from a specified forest


[Start Application](#)


 **Who can Apply**
- Organisation

 **Eligibility Requirements**
[View Required Documents](#)

 **Fee**
Large scale - 13,333.00ZMW
Medium scale - 6,667.00 ZMW
Small scale - 1,333.00 ZMW

 **Processing Time**
30 days

 **Validity**
Large scale - 5 (five) years
Medium scale - 3 (three) years
Small scale - 2 (two) years

 **Legal References**
- SI no. 50 of 2016 Specifies the fee schedules

Applicant

- Query Company Details
- Not using corporate profile to make application accessible without the need to first have a corporate profile created.

Applicant Details

Applicant Type: Organization

Organisation Details

Registration Number *

120220026085

Entity Name *

CORELINK CONSULTING LIMITED

Entity Type *

Local Company

Entity Date of Registration *

04/01/2022

Entity Form

Entity Sub Form

E-Mail Address *

chishimbasusan3@icloud.com

Mobile Phone No. *

+260972615221

Registered Office Address

3794 NGWEREMA CLOSE, OLYMPIA PARK, LUSAKA,, LUSAKA PROVINCE, ZAMBIA, LUSAKA,, LUSAKA, LUSAKA

Postal Address

3794 NGWEREMA CLOSE, OLYMPIA PARK, LUSAKA,, LUSAKA PROVINCE, ZAMBIA, LUSAKA,, LUSAKA, LUSAKA

[Cancel](#)

[Previous](#)

[Save](#)

GIS integration

- Define Concession
 - Draw
 - Import shapefile
 - Type coordinates

Musa Twabi | DAMEL TRADING AND PROSPECTING COMPANY LIMITED | Corporate Administrator | English

ZamServices
Government e-Services Directory


ZamPortal | E-Services Directory | Corporate Workpla

Service List / Concession Licence

Service Details

National Geospatial Data Register

Click on Map Interactions to start marking Concession area



NGDR

Help

Legend

Tools

Shape

Submit

Import Coordinates

Map Interactions

Start Drawing

Reset Shape


Start Editing

Coordinate System: GCS Arc 1950

Coordinate Format: Degree Minutes Seconds

Part 1

Latitude				Longitude			
16	14	29.2	S	26	35	23.0	E
16	14	33.9	S	26	37	39.7	E
16	18	41.8	S	26	37	32.3	E
16	18	37.5	S	26	35	6.34	E
16	14	29.2	S	26	35	23.0	E



Process Steps

- Fill Application
- ✓ Case Details
- ✓ Applicant Details
- Service Details
- Pay
- Submit

Service 2: Tree Felling Permit



Applicant proposes the trees that will be harvested



Final marking by Forestry officers through the mobile app



Update tree-inventory of concession holder based on tree felling permits approved.

Concession Verification

- Query Concession License



ZamServices
Government e-Services Directory

Rowan Vos English

ZamPortal

E-Services Directory

My Workplace

Service List / Tree Felling Permit

Service Details

Concession Licence No: *

FDMS/0058/4/2025



Query

Verified, proceed by clicking 'Next' button

Process Steps


- Fill Application
- |
- ✓ Case Details
- |
- ✓ Applicant Details
- |
- Service Details
- |
- Pay
- |
- Submit

GIS integration


- Loads Concession boundaries
- Applicant pinpoints trees within concession boundaries for felling

Service Details


National Geospatial Data Register




NGDR



Help



Shape



Submit

Import Coordinates

Map Interactions

Stop Drawing

Reset Shape

Concession Details


Coordinate System: GCS Arc 1950

Coordinate Format: Degree Minutes Seconds

Part 1

Latitude			Longitude		
17	50	32.7	26	35	28.3
17	50	32.1	26	35	39.8
17	50	37.3	26	35	15.4

Click on Map Interactions and zoom into concession to mark trees for felling



To Cut and/or Manufacture *

Select an option

Process Steps

Fill Application

Case Details

Applicant Details

Service Details

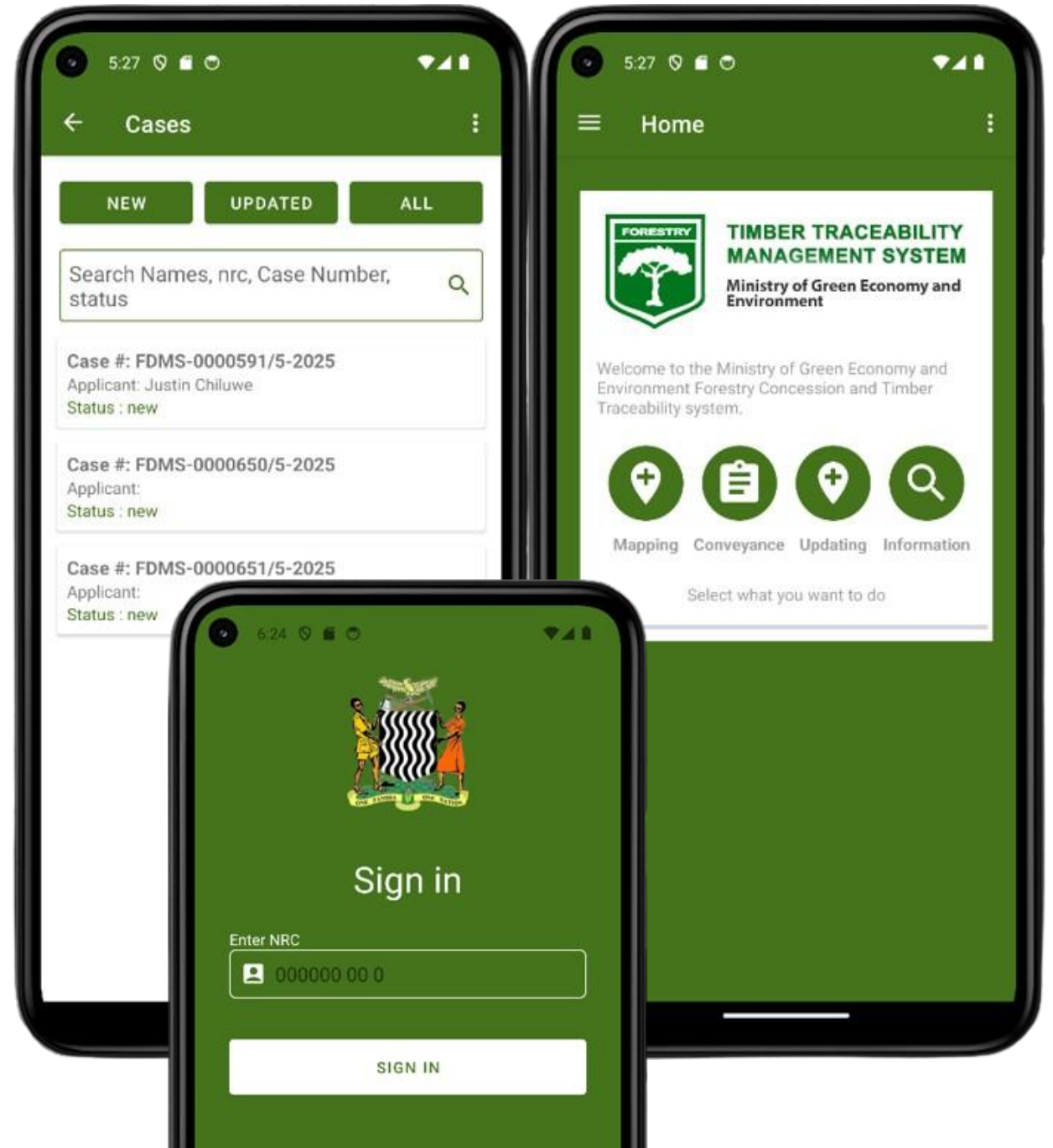
Service Details

Pay

Submit

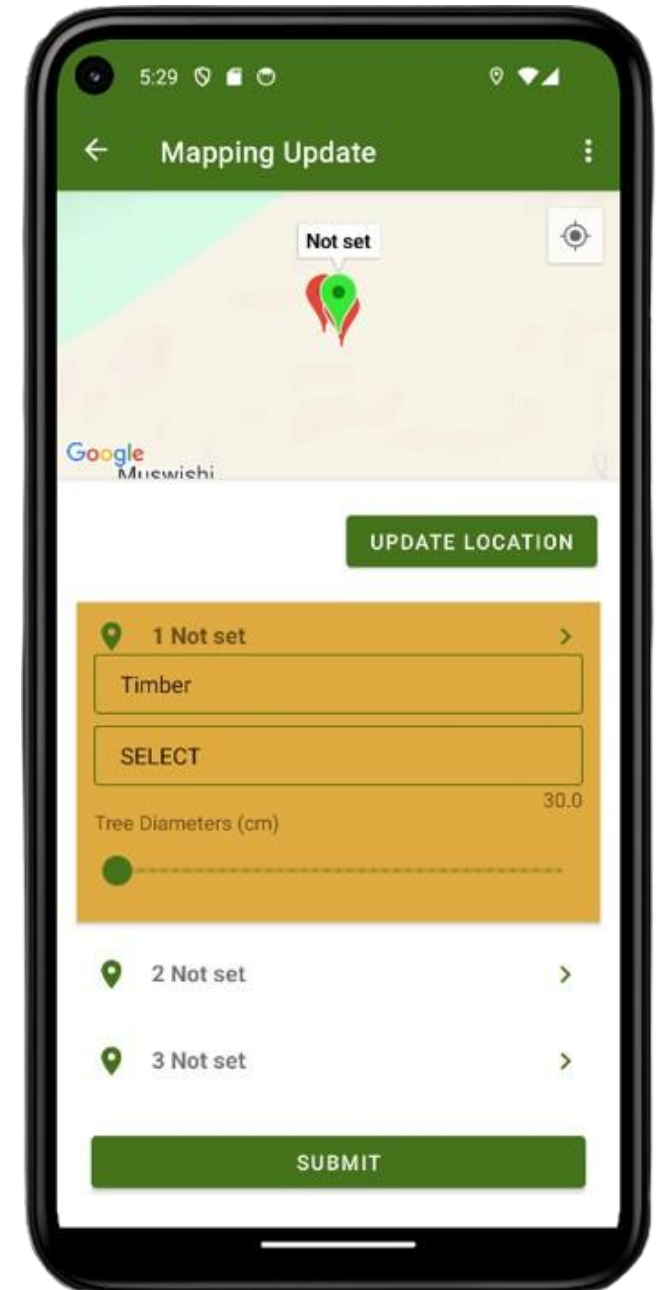
Mobile Application

- Toolkit for field officers
- Securely login with NRC and OTP
- View cases assigned to officer only.
- Tree felling marking
- Conveyance tracking
- In-field verification
- Field Reporting (requested)



Mobile Application

- Marking by Forestry Officer
- Digital marking hammer
- Tracking exact location of each tree.
- Shows proposed trees from the case.
- Tracking diameter of each tree
- Only when approved can tree be felled



Service 3: Conveyance Permit



Drivers input the route and destination for timber transportation.



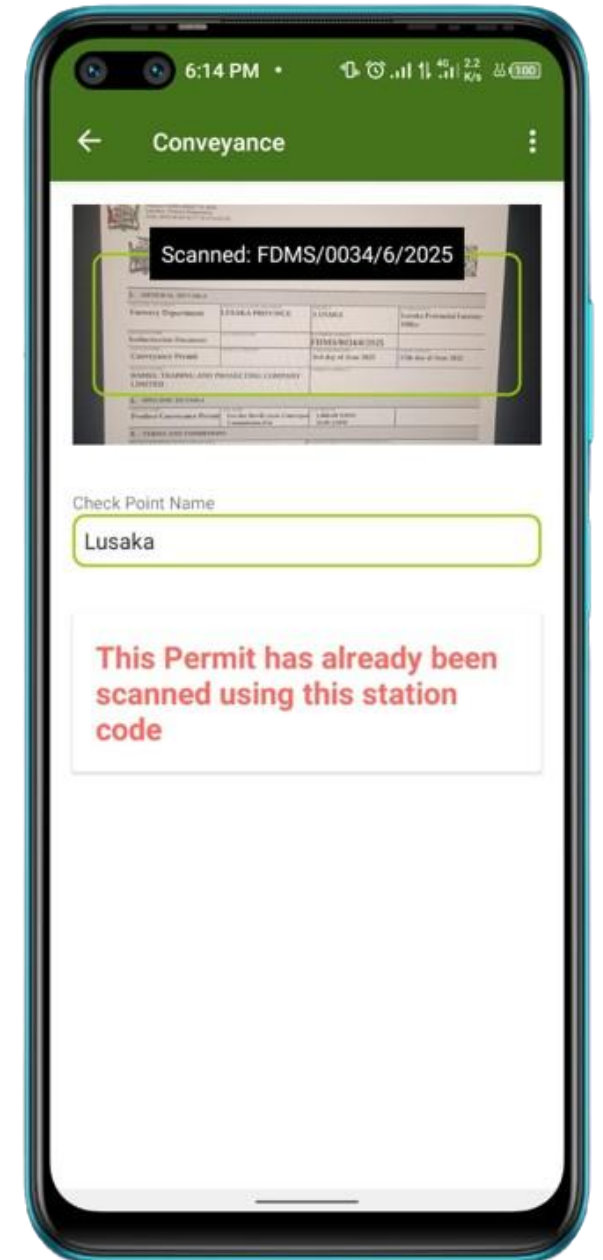
The source of the logs has been verified.



Integration with Mobile Application to allow for scanning of permits and log tags along the routes at various check points and updating of scans along the route to prevent re-use of permits.

Mobile Application

- Scanning permits validity at checkpoints.
- Check if permit has been used before at checkpoint.



Service 4: Timber Merchant Permit



Registration of timber merchants.



Allowing trade in inventory recorded from tree felling



Enable traceability from concession to end-user or export

Service 5: Timber Export Permit Reengineering



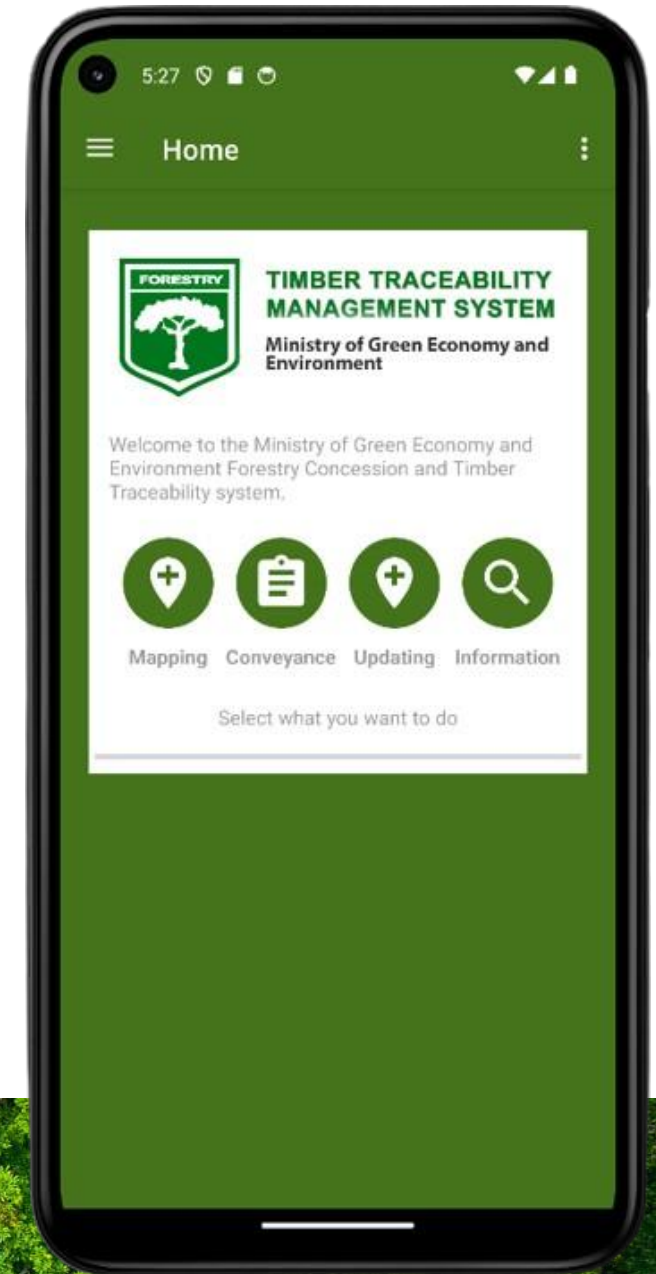
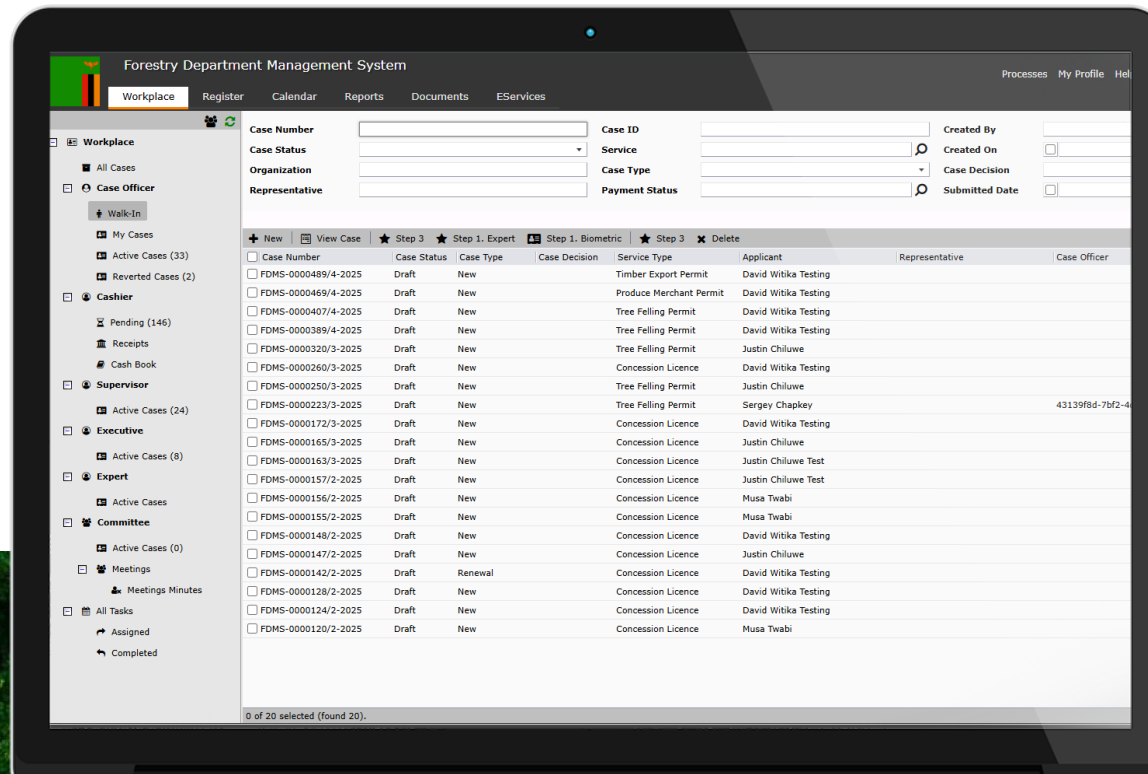
Submit details about the type, quantity, and destination of the timber for export.



A barcode is assigned to the timber, which is scanned at export checkpoints, ensuring that only legally permitted timber leaves the country.

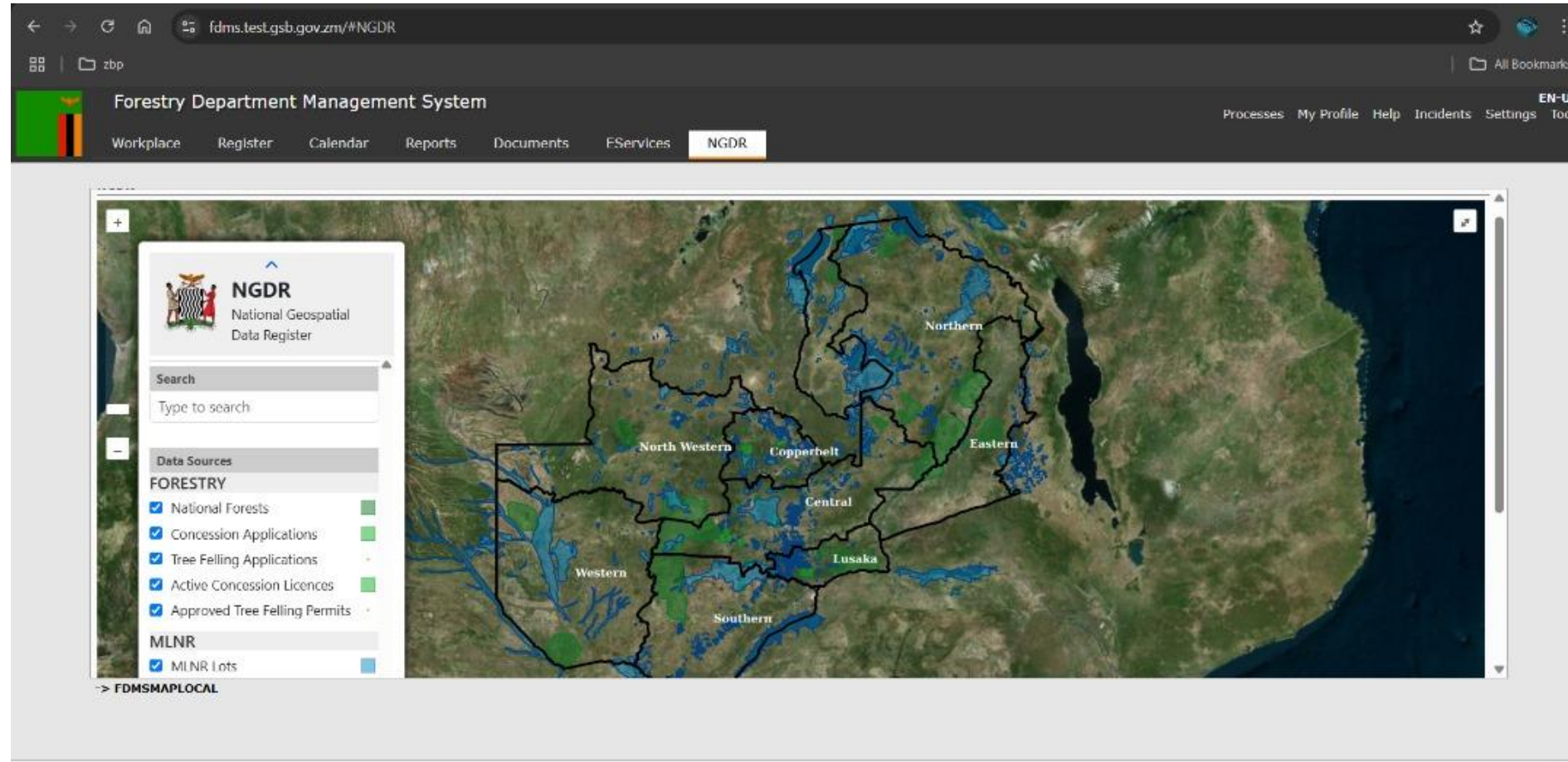
Platforms:

- GSB back-office (C#/.NET)
- GSB e-Services
- Mobile application (Android/Java)
- NGDR GIS Component (Geoserver/Openlayers) ngdr.gsb.gov.zm



NEW NGDR GIS DATA SOURCES CREATED

1. Concession Licenses
2. Production Permits
3. Tree Felling Permits
4. Community Forest Management Groups



Concession Licence inventory

- 1. Tracking tree inventory
- 2. View spacial data
- 3. View related tree felling permits
- 4. View licence details

License Information

FDMS INVENTORY LIST

Tree Species Inventory

Species Name	Tree Category	Tree Count
Pine Timber: Thinning (Immature crop)	pine	34

Concession Information

Concession Status	License
ACTIVE	FDMS/0095/6/2025
Province	District
Southern	Zimba
Duration (years)	Area (Ha)
4	1320.26
Issuance Date	
2025-06-18	
Expiry Date	
2030-06-18	

Contact Information

Organisation Name	DAMEL TRADING AND PROSECTING COMPANY LIMITED
Organisation Identity Number	119950034979
Manager's Phone	0973910538
Managers's Email	justinchiluwe@gmail.com

Save

Next

Close

License Information

Concession Area Map

Total trees: 34 Trees

Total area: 1320.26 Ha

NGDR

National Geospatial Data Register

Select Export Format

Data Sources

Zambia Border

Zambia Provinces

National Forests

Restricted Areas

Active Concessions

☒

☒

☒

☒

☒

Initial Tree List (On Application)

Species Name	Tree Category	Tree Count
Pine Timber: Thinning (Immature crop)	pine	34

Tree Felling Permits using this Concession

Permit Number	Issued On	Expiry Date
---------------	-----------	-------------

Save

Next

Close

Tree Felling Inventory

- 1. Tracking tree inventory
- 2. View spatial data
- 3. View individual tree details
- 4. View licence details
- 5. View trees marked on application

License Information

Permit Info

NGDR

Permit Verification

Inventory

FDMS INVENTORY LIST

Tree Species Inventory

Species Name	Tree Category	Tree Count	Unit Price (ZMW)	Total Amount (ZMW)
Timber: Afzelia quanzensis (Mupapa, Mwande)	timber	3	460	1,380
Branch-Wood Timber: Afzelia quanzensis (Mupapa, Mwande)	branch-wood	3	80	240

Felling Permit Information

Permit Status	License
ACTIVE	FDMS/0099/6/2025
Province	District
Kalumbila	North-Western
Duration (years)	Number of Trees Marked
0	3
Issuance Date	Concession License
2025-06-26	FDMS/0098/6/2025
Expiry Date	

Contact Information

Organisation Name
DAMEL TRADING AND PROSECTING COMPANY LIMITED

Organisation Identity Number
119950034979

Representative's Phone
0973910538

Representative's Email
justinchiluwe@gmail.com

Save

Next

Close

Tree Felling Licence

License Information

Permit Info

NGDR

Permit Verification

Inventory

Felling marked Coordinates

NGDR
National Geospatial
Data Register

Select Export Format

Data Sources

- Zambia Border
- Zambia Provinces
- National Forests
- Restricted Areas
- Active Concessions

Map

Copperbelt

Initial Tree List (On Application)

Species Name	Tree Category	Tree Count
--------------	---------------	------------

Available Trees (Individual)

Species Name	Diameter	Latitude	Longitude	Bar-code
Timber: Afzelia	30	26.13863433	-12.24146227	TREE-

Save

Next

Close

Tree Felling Licence

CONVEYANCE PERMIT VERIFICATION

View checkpoints where permit has been used

Forestry Department Management System

Workplace

Register

Calendar

Reports

Documents

EServices

NGDR

Mobile App

EN-US

Processes

My Profile

Help

Incidents

Settings

Tools

Licenses

Concession Licence (73)

Tree Felling Permit (23)

Produce Conveyance Permit (14)

Produce Merchant Permit (9)

Timber Export Permit (10)

Register

Cases (768)

Active (100)

Completed (99)

Approved (97)

Rejected (1)

Certificates (131)

Individuals (221)

Citizens (24)

Residents (1)

Foreigners (197)

Organizations

Entrepreneurs (129)

Companies (149)

License Information

Find: Permit Number

Go

+ New

More Actions

Permit Number	Expert NRC	Station Code	Updated At
FDMS/0072/5/2025	523757101	Lusaka	6/3/2025

1 of 1 selected (found 1).

Permit Info

NGDR

Permit Verification

Inventory

Created By

Created On

Twabi

6/26/2025 2:52 PM

er 1 Tester 1

6/18/2025 10:07 AM

n Chiluwe

5/23/2025 11:01 AM

n Chiluwe

5/13/2025 10:22 AM

d Witika

5/9/2025 11:14 AM

a Twabi

4/29/2025 3:11 PM

n Chiluwe

4/25/2025 3:05 PM

n Chiluwe

4/25/2025 11:23 AM

n Chiluwe

4/25/2025 9:32 AM

s Twabi

4/25/2025 9:31 AM

d Witika

4/21/2025 8:01 AM

n Chiluwe

4/11/2025 2:30 PM

n Chiluwe

4/11/2025 12:07 PM

d Witika

4/8/2025 10:57 PM

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User: Musa Twabi

Role: Administrators

Logout

Project Results



Re-engineered the 5 largest revenue generators in Forestry



GIS integrated



Mobile app integrated



Services setup to include TTS



Usable services for Forestry

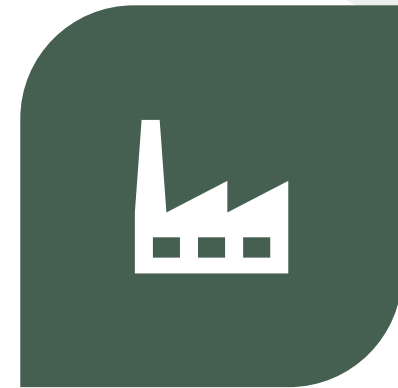
Next Steps



ADDITIONAL SERVICES
REQUESTED



TRAINING USERS



DEPLOYMENT ON
PRODUCTION