Department of Environment and Natural Resources - XI
Provincial Environment and Natural Resource Office - Tagum City

DIGITAL GOVERNANCE 2025

THE FOREST PRODUCTS TRANSPORT MONITORING DASHBOARD V1.2

USER MANUAL

DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
PROVINCIAL ENVIRONMENT AND NATURAL RESOURCES
TAGUM TAGUM CITY, DAVAO DEL NORTE

FOREST PRODUCTS TRANSPORT MONITORING DASHBOARD USER MANUAL

Version 1.2 | 2025

FOREWORD

It is with great pride that I present the Forest Products Transport Monitoring Dashboard User Manual, a product of the Department of Environment and Natural Resources (DENR) Region XI's ongoing commitment to digital transformation and effective environmental law enforcement. This initiative embodies our goal to enhance transparency, efficiency, and accountability in the monitoring of forest products and wildlife transport within Davao del Norte.

The Forest Products Transport Monitoring Dashboard serves as a crucial monitoring system for regulating the movement of forest products and wildlife resources. Through the use of this dashboard, our field personnel and enforcement officers are now equipped with a real-time digital platform that simplifies documentation, improves accuracy, and strengthens decision-making. This innovation significantly reduces the limitations of manual reporting and enhances the integrity of environmental enforcement operations.

As we embrace this technological advancement, we also strengthen our capacity to respond swiftly to environmental violations and ensure compliance with forestry and wildlife protection laws. The Forest Products Transport Monitoring Dashboard supports our mission to safeguard natural resources and to promote good governance within the DENR's operational framework.

I wish to commend the dedicated efforts of the DENR-PENRO Davao del Norte, the CENRO New Corella, and our ICT development team for their commitment and expertise in realizing this initiative. Their collaborative effort demonstrates our shared dedication to integrating modern solutions for more efficient and transparent environmental management.

May this dashboard and its accompanying manual serve as an essential guide in the performance of our duties. Together, let us continue to uphold the principles of integrity, professionalism, and innovation as we work toward a more sustainable and accountable DENR.

ATTY. MARIA MERCEDES V. DUMAGAN, CPA
Regional Executive Director
Department of Environment and Natural Resources – Region XI

MESSAGE

It is with great satisfaction that I extend my message to the users of the Forest Products Transport Monitoring Dashboard User Manual. This system represents a remarkable achievement in the continuing efforts of the Department of Environment and Natural Resources- Provincial Environment and Natural Resources Office (DENR-PENRO) Davao del Norte to strengthen monitoring, enforcement, and data management related to forest products and wildlife transport within Davao del Norte.

The Forest Products Transport Monitoring Dashboard User Manual provides our personnel and management teams with a more efficient and transparent way to record, track, and analyze transport activities. By replacing manual processes with real-time digital tools, this system enhances accuracy, reduces delays, and promotes accountability in our environmental law enforcement operations.

This initiative serves as a testament to our commitment to good governance and technological innovation. It reflects our collective goal to utilize modern solutions that make our daily operations more effective and responsive to the growing challenges of natural resource protection.

I extend my appreciation to the dedicated ICT team and all DENR-PENRO personnel who contributed to the development and implementation of this system. Their efforts demonstrate the spirit of teamwork and shared responsibility that drives our success.

May this dashboard and its manual serve as a valuable tool in ensuring that our checkpoints continue to operate efficiently and uphold the DENR's mission of sustainable forest and wildlife management.

ALBERTO N. BANDIOLA
PENR Officer
DENR-PENRO Davao del Norte

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MISSION

A nation enjoying and sustaining its natural resources and a clean and healthy environment.

VISION

To mobilize our citizenry in protecting, conserving, and managing the environment and natural resources for the present and future generations.

MANDATE

The Department is the primary agency responsible for the conservation, management, development, and proper use of the country's environment and natural resources.

LEGAL BASIS

- *Presidential Decree No. 705 - Revised Forestry Code of the Philippines*
- *DENR Administrative Order No. 97-32 - Rules for the issuance of Certificates of Verification and transport permits*
- *Executive Order No. 23 - Moratorium on cutting and harvesting of timber in natural and residual forests*
- *Republic Act No. 9147 - Wildlife Resources Conservation and Protection Act*
- *Other relevant DENR issuances and local environmental ordinances*

RELEVANT SUSTAINABLE DEVELOPMENT GOALS (SDGS)

SDG 15 – Life on Land

Protect, restore, and promote sustainable use of terrestrial ecosystems, manage forests sustainably, halt deforestation, and prevent biodiversity loss.

SDG 12 – Responsible Consumption and Production

Ensure lawful and sustainable production and trade of forest products.

SDG 13 – Climate Action

Take urgent action to combat climate change and its impacts through forest conservation.

SDG 16 – Peace, Justice, and Strong Institutions

Promote transparency, rule of law, and strong environmental governance.

1. INTRODUCTION

The Forest Products Transport Monitoring Dashboard is a digital monitoring system developed by the Department of Environment and Natural Resources- Provincial Environment and Natural Resources Office (DENR-PENRO) Region XI to enhance transparency, efficiency, and data accuracy in forest product and wildlife transport monitoring. It serves as a centralized platform that consolidates checkpoint activities, enabling personnel to record, track, and analyze data in real time.

This dashboard aims to replace manual reporting processes with an automated, user-friendly interface designed for checkpoint officers, enforcement teams, and management. Through this system, users can log vehicle inspections, track transport permits, and generate analytical reports that support data-driven decision-making.

The Environment and Natural Resources also contributes to the DENR's broader mission of sustainable forest management and environmental law enforcement. By improving the traceability of forest products and wildlife movement, it helps minimize illegal trade and enhances accountability across operational checkpoints.
This user manual provides detailed instructions on how to navigate, operate, and maintain the KM58 Checkpoint Dashboard. It is designed to guide users in understanding system features, functionalities, and protocols to ensure efficient and consistent use of the platform.

1.1 PURPOSE OF THE MANUAL

This User Manual serves as a comprehensive reference and instructional guide for all users and administrators of the Forest Products Transport Monitoring Dashboard. It provides detailed information on the system's objectives, functionalities, and operational processes to ensure its effective and consistent use across all levels of the Department of Environment and Natural Resources (DENR) – Provincial Environment and Natural Resources Office (PENRO) Tagum, Davao del Norte.

The purpose of this manual is to assist users in understanding how to navigate the system, perform key tasks, and utilize its features to their full potential. It aims to promote uniformity in system operation, minimize user errors, and improve efficiency in monitoring and reporting forest product transport activities.

1.2 SCOPE AND AUDIENCE

The scope of this manual covers both technical and operational aspects of the Forest Products Transport Monitoring Dashboard, ensuring that all stakeholders involved in the management, monitoring, and regulation of forest product transportation can effectively perform their roles within the system.
This manual is specifically intended for:

- DENR Officers and Administrators – Responsible for overseeing system use, approving transport permits, and ensuring compliance with environmental policies.
- CENRO Personnel – Tasked with data encoding, verification of permits, and monitoring of forest product movement within their jurisdictions.
- Checkpoint Monitors and Enforcement Officers – Responsible for validating transport documents and vehicle compliance on the ground.
- Technical Staff and IT Support – Assigned to manage system operations, troubleshoot technical issues, and maintain database integrity.

The manual also serves as a resource for stakeholders or partner agencies who require an understanding of the system's reporting and data verification features. It provides detailed explanations on login procedures, data entry, analytics interpretation, visualization tools, and report generation, enabling users to make informed decisions and contribute to transparent, data-driven environmental governance.

1.3 SYSTEM OVERVIEW

The Forest Products Transport Monitoring Dashboard is an innovative, web-based platform designed to enhance the monitoring, regulation, and management of forest product transportation within the jurisdiction of PENRO Tagum, Davao del Norte. It was developed to support the DENR's commitment to sustainable forest management, transparency, and accountability through the use of real-time data analytics and digital recordkeeping.

The system consolidates a wide range of operational data—including transport permits, vehicle details, checkpoint activities, consignee information, and product specifications—into one secure and centralized interface. This integration allows authorized personnel to access accurate, up-to-date information anytime and anywhere, eliminating delays caused by manual processing or fragmented data sources.
Key features of the dashboard include:

- Real-Time Monitoring: Enables instant tracking of forest product movement and permit validation.
- Data Visualization: Provides dynamic charts, graphs, and summaries to support data analysis and decision-making.
- Centralized Recordkeeping: Ensures that all permit and transport records are stored securely and can be easily retrieved for audits or inspections.
- User Accessibility: Designed with a user-friendly interface that supports both administrative and operational functions.

By providing a comprehensive, technology-driven solution, the system helps DENR offices, CENROs, and field units maintain operational efficiency, uphold environmental regulations, and ensure that all forest product transport activities are conducted in accordance with national laws and sustainable practices.

2. STRATEGIC ALIGNMENT

The Forest Products Transport Monitoring Dashboard is an innovative digital system developed to enhance the monitoring and regulatory capabilities of the DENR – PENRO Tagum, Davao del Norte. Its main goal is to ensure efficient, transparent, and data-driven oversight of forest product transportation across the province. By embracing technology, the system reflects DENR's commitment to digital transformation and sustainable forest management.

Designed as an interactive, real-time platform, the dashboard consolidates operational data such as transport permits, vehicle registrations, checkpoint records, and consignee details into a single interface. This integration enables DENR personnel and decision-makers to view, analyze, and respond to field activities promptly, facilitating proactive decision-making and immediate action against irregularities or potential violations. By streamlining traditional manual processes, it reduces delays, inconsistencies, and data fragmentation while ensuring faster validation of transport permits and minimizing unauthorized forest product transport.

Beyond monitoring, the system strengthens transparency, accountability, and coordination among DENR units, CENROs, checkpoints, and stakeholders. Its reporting and visualization tools provide evidence-based insights that support trust and collaboration among communities, industry players, and government agencies. By unifying critical functions into one platform, the dashboard aligns with DENR's mission to protect and sustainably manage natural resources, fostering a culture of data empowerment, environmental responsibility, and technology-enabled governance.

3. IMPACT

a. Operational Transparency and Compliance

The system supports the **real-time monitoring** of forest product transport through:

1. **Permit Tracking** – All issued transport permits are recorded and visualized for easy verification.
2. **Checkpoints Monitoring** – Integration of checkpoint data ensures movement legitimacy.
3. **Analytics Visualization** – Visual charts summarize product types, species, and destinations.

This transparency ensures that every permit, volume, and consignee can be easily validated by authorized personnel, minimizing unauthorized transactions and promoting lawful operations.

b. Data-Driven Decision Making

The **Analytics Dashboard** converts raw data into meaningful visual information through:

- Real-time filtering options by date, species, CENRO, or consignee.
- Bar, line, radar, and pie charts for product types, volume, and destinations.
- Dynamic summaries for Total Permits, Volume (CU.M), BD. FT, and Pieces.

Through these insights, supervisors and administrators can detect trends, monitor volume flow, and make data-supported decisions to improve operational efficiency.

c. Environmental and Organizational Advantages

1. **Improved Regulatory Oversight:** The system centralizes permit verification, reducing manual errors and ensuring consistent monitoring.
2. **Faster Validation:** Automated record-keeping enables immediate verification of transport legality.
3. **Enhanced Accountability:** Every transaction and record can be traced back to a specific office or officer.
4. **Transparency to Stakeholders:** Promotes trust among partners, communities, and governing agencies.
5. **Support for Sustainable Development Goals (SDGs):** Contributes to climate action, responsible production, and life on land (SDG 13, 12, and 15).

4. KEY FEATURES

Dashboard Highlights:

- **Real-time Data Integration:** *Connects directly to Google Sheets for live data updates.*
- **Interactive Visualizations:** *Seven different chart types for comprehensive data analysis.*
- **Advanced Filtering:** *Multi-dimensional filtering by date, location, species, and more.*
- **Monthly Navigation:** *Easy browsing through historical data by month and year.*
- **PDF Report Generation:** *Automated comprehensive reports with analytics and insights.*
- **Mobile Optimization:** *Fully responsive design for tablets and smartphones.*
- **Data Export:** *Download capabilities for further analysis.*

Quick Stats:

- 7 Interactive Charts
- 4 Key Metrics
- Unlimited Data Records
- 100% Mobile Responsive

SYSTEM REQUIREMENTS

Recommended Browsers

• **Google Chrome 90 + (Recommended)**	
• **Mozilla Firefox 88 +**	
• **Safari 14 +**	
• **Microsoft Edge 90 +**	

Technical Requirements

- Internet connection for data loading
- JavaScript enabled
- Minimum screen resolution 1024×768
- Pop-up blocker disabled for PDF downloads

⚠️ **Important:** Internet Explorer is not supported.
Use the latest ChromeorFirefox for best experience.

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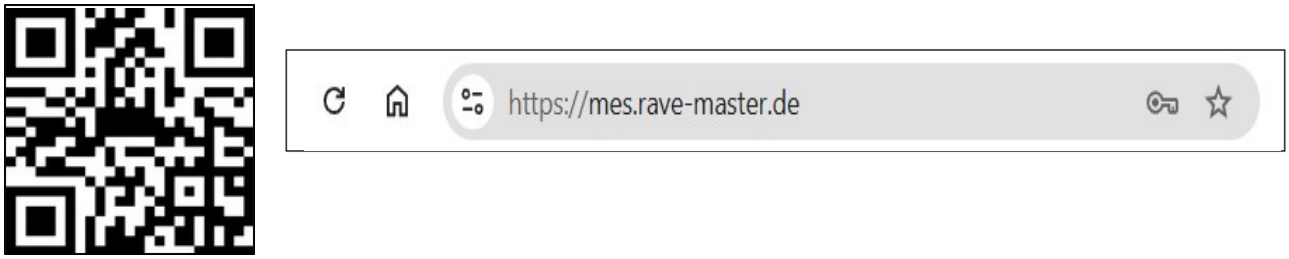
5. Getting Started

First Time Setup

Open your browser's address bar, type https://mes.rave-master.de, and press Enter, or scan the QR code below to access the mobile interface.



When you first open the dashboard, it automatically loads data from the connected Google Sheets database. Loading usually takes 5–10 seconds, depending on connection speed and data size.

💡 **Tip:** Wait until the *"Loading data…"* message disappears before interacting with filters or navigation.

Initial Data Load Process:

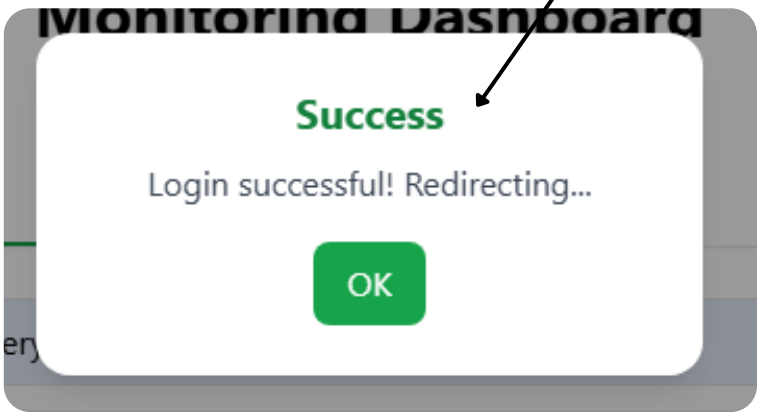
1. Connects to GoogleSheets API
2. Downloads and processes data
3. Generates charts and statistics
4. Displays current month data
5. Populates filter options

6. CHOOSE LOGIN METHOD

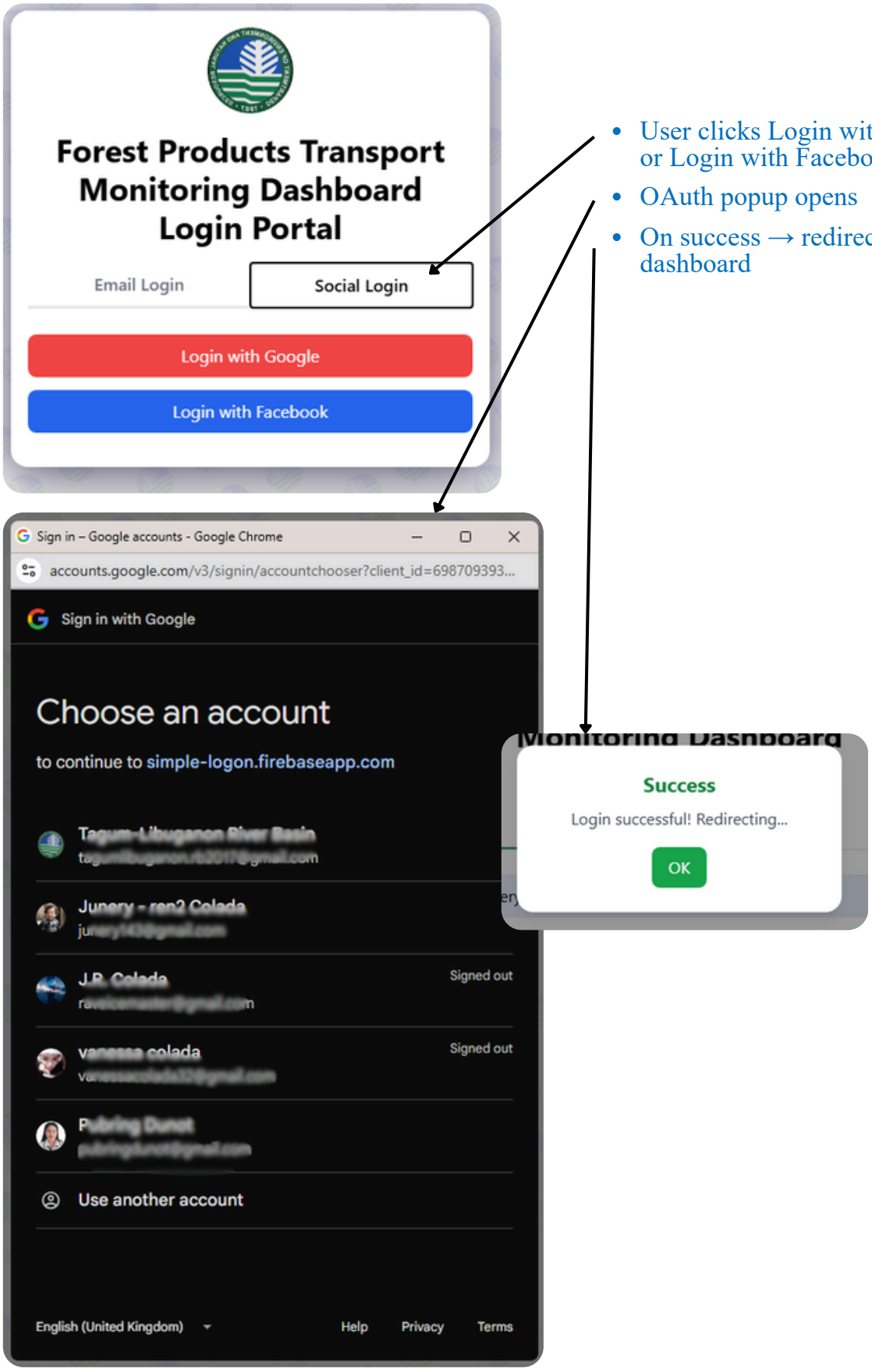
Email Login

⚠️ **Important:** ***If you don't have an account yet, please ask the admin to create one, or you may log in using your Google or Facebook account.***

- User enters email
- User enters password
- User may toggle password visibility
- Click Login
- Loading modal shows → then success or error alert



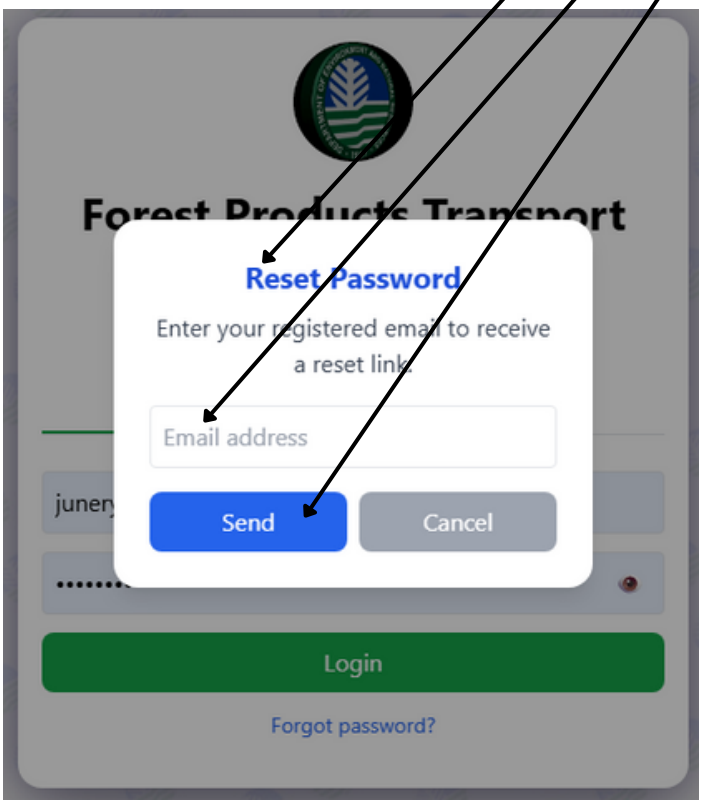
Social Login

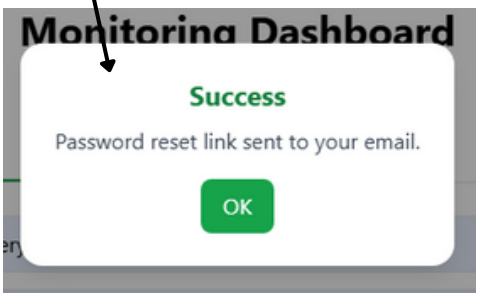


- User clicks Login with Google or Login with Facebook
- OAuth popup opens
- On success → redirected to dashboard

Forgot Password

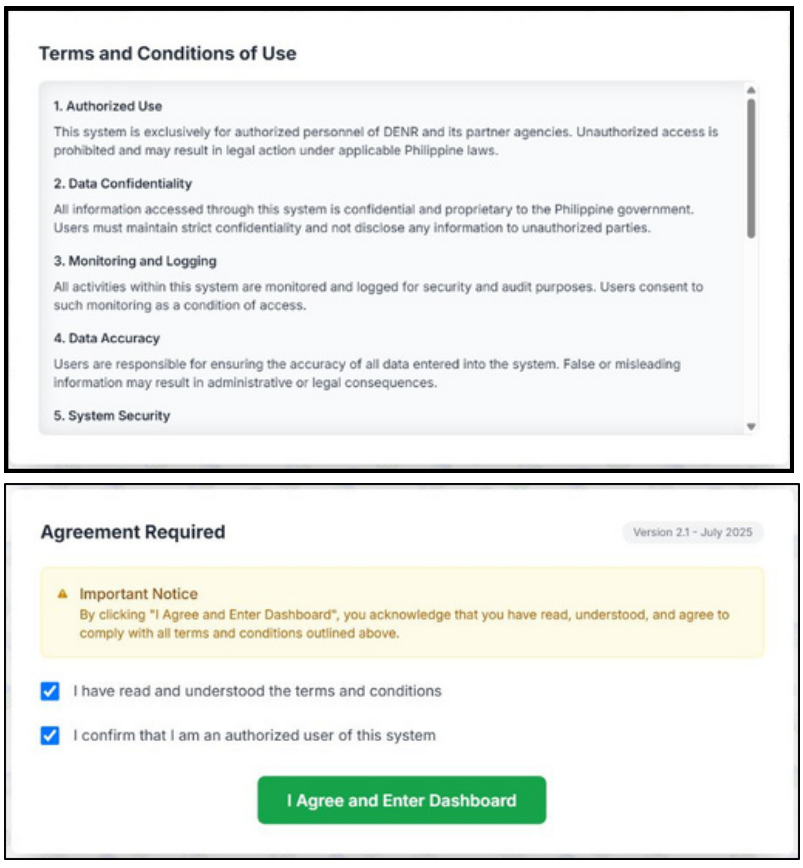
- User clicks Forgot password?
- Modal opens
- User enters email
- Click Send
- Email with reset link is delivered





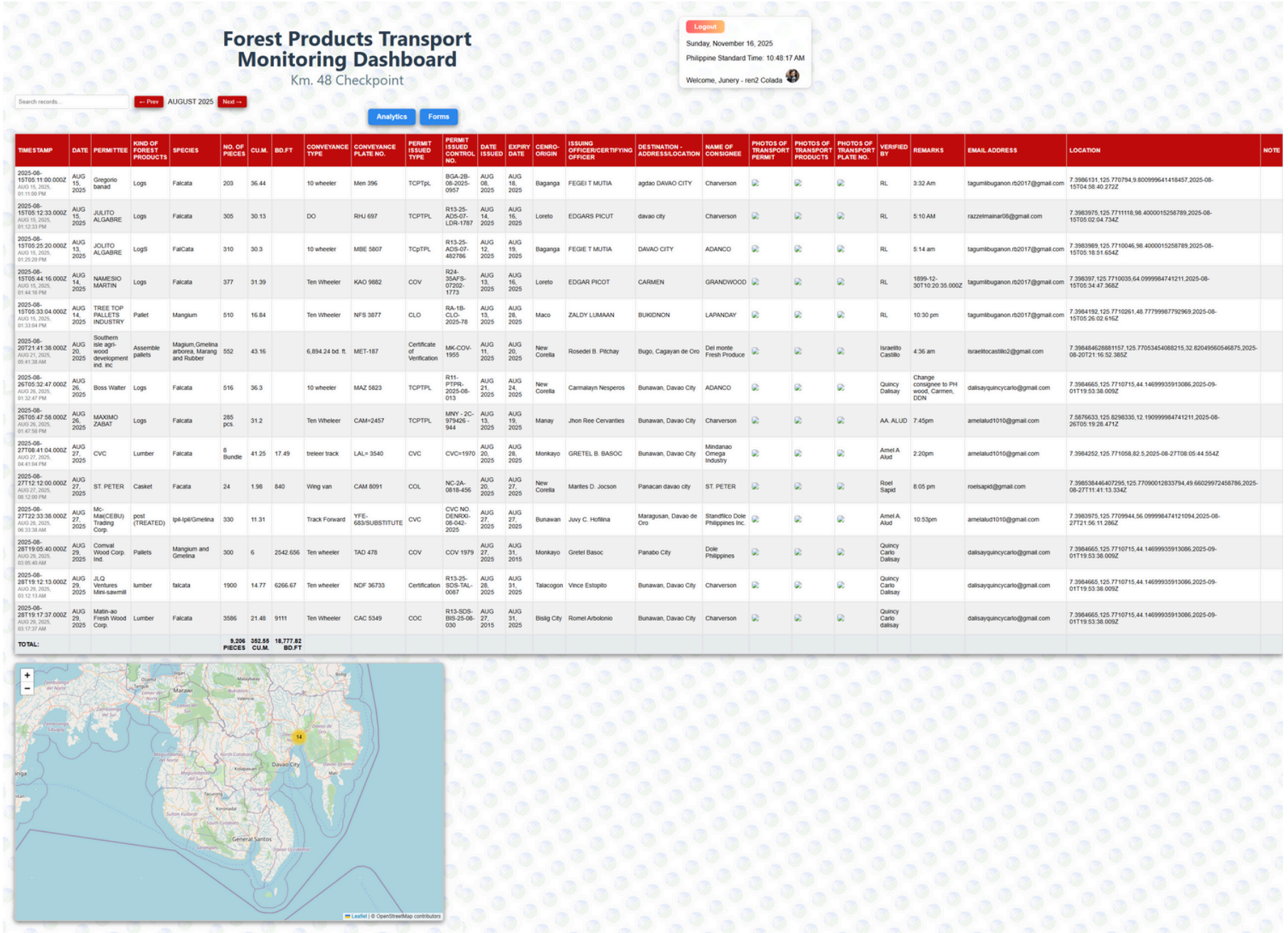
7. USER AGREEMENT PAGE

- Displays DENR Vision and Mission, Legal Mandates, and Terms of Use.



- Users must confirm understanding before proceeding to the main dashboard.

THE DASHBOARD



Forest Products Transport Monitoring Dashboard
Km. 48 Checkpoint

Logout
Sunday, November 16, 2025
Philippine Standard Time: 10:48:17 AM
Welcome, Junery - ren2 Colada

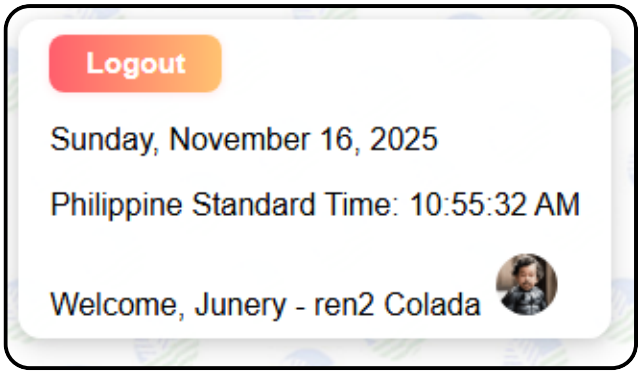
Search records... ← Prev AUGUST 2025 Next →

Analytics Forms

TIMESTAMP	DATE	PERMITTEE	KIND OF FOREST PRODUCTS	SPECIES	NO. OF PIECES	CU.M.	BD.FT	CONVEYANCE TYPE	CONVEYANCE PLATE NO.	PERMIT ISSUED TYPE	PERMIT ISSUED CONTROL NO.	DATE ISSUED	EXPIRY DATE	CENRO-ORIGIN	ISSUING OFFICER/CERTIFYING OFFICER	DESTINATION - ADDRESS/LOCATION	NAME OF CONSIGNEE	PHOTOS OF TRANSPORT PERMIT	PHOTOS OF TRANSPORT PRODUCTS	PHOTOS OF TRANSPORT PLATE NO.	VERIFIED BY	REMARKS	EMAIL ADDRESS	LOCATION	NOTE
2025-08-15T05:11:00.000Z AUG 15, 2025, 01:11:00 PM	AUG 15, 2025	Gregorio banad	Logs	Falcata	203	36.44		10 wheeler	Men 396	TCPTpL	BGA-2B-08-2025-0957	AUG 08, 2025	AUG 18, 2025	Baganga	FEGEI T MUTIA	agdao DAVAO CITY	Charverson				RL	3:32 Am	tagumlibuganon.rb2017@gmail.com	7.3986131,125.770794,9.8009996414184 57,2025-08-15T04:58:40.272Z	
2025-08-15T05:12:33.000Z AUG 15, 2025, 01:12:33 PM	AUG 15, 2025	JULITO ALGABRE	Logs	Falcata	305	30.13		DO	RHJ 697	TCPTPL	R13-25-ADS-07-LDR-1787	AUG 14, 2025	AUG 16, 2025	Loreto	EDGARS PICUT	davao city	Charverson				RL	5:10 AM	razzelmainar06@gmail.com	7.3983975,125.7711118,98.4000015258789,2025-08-15T05:02:04.734Z	
2025-08-15T05:25:20.000Z AUG 15, 2025, 01:25:20 PM	AUG 13, 2025	JOLITO ALGABRE	LogS	FalCata	310	30.3		10 wheeler	MBE 5807	TCpTPL	R13-25-ADS-07-482786	AUG 12, 2025	AUG 19, 2025	Baganga	FEGIE T MUTIA	DAVAO CITY	ADANCO				RL	5:14 am	tagumlibuganon.rb2017@gmail.com	7.3983989,125.7710046,98.4000015258789,2025-08-15T05:18:51.654Z	
2025-08-15T05:44:16.000Z AUG 15, 2025, 01:44:16 PM	AUG 14, 2025	NAMESIO MARTIN	Logs	Falcata	377	31.39		Ten Wheeler	KAO 9882	COV	R24-35AFS-07202-1773	AUG 13, 2025	AUG 16, 2025	Loreto	EDGAR PICOT	CARMEN	GRANDWOOD				RL	1899-12-30T10:20:35.000Z	tagumlibuganon.rb2017@gmail.com	7.398397,125.7710035,64.0999984741211,2025-08-15T05:34:47.368Z	
2025-08-15T05:33:04.000Z AUG 15, 2025, 01:33:04 PM	AUG 14, 2025	TREE TOP PALLETS INDUSTRY	Pallet	Mangium	510	16.84		Ten Wheeler	NFS 3877	CLO	RA-1B-CLO-2025-78	AUG 13, 2025	AUG 28, 2025	Maco	ZALDY LUMAAN	BUKIDNON	LAPANDAY				RL	10:30 pm	tagumlibuganon.rb2017@gmail.com	7.3984192,125.7710261,48.77799987792969,2025-08-15T05:26:02.616Z	
2025-08-20T21:41:38.000Z AUG 21, 2025, 05:41:38 AM	AUG 20, 2025	Southern isle agri-wood development ind. inc	Assemble pallets	Magium,Gmelina arborea, Marang and Rubber	552	43.16		6,894.24 bd. ft.	MET-187	Certificate of Verification	MK-COV-1955	AUG 11, 2025	AUG 20, 2025	New Corella	Rosedel B. Pitchay	Bugo, Cagayan de Oro	Del monte Fresh Produce				Israelito Castillo	4:36 am	israelitocastillo2@gmail.com	7.3984862888157,125.77053454088215,32.82049560546875,2025-08-20T21:16:52.385Z	
2025-08-26T05:32:47.000Z AUG 26, 2025, 01:32:47 PM	AUG 26, 2025	Boss Walter	Logs	Falcata	516	36.3		10 wheeler	MAZ 5823	TCPTPL	R11-PTPR-2025-08-013	AUG 21, 2025	AUG 24, 2025	New Corella	Carmalayn Nesperos	Bunawan, Davao City	ADANCO				Quincy Dalisay	Change consignee to PH wood, Carmen, DDN	dalisayquincycarlo@gmail.com	7.3984665,125.7710715,44.14699935913086,2025-09-01T19:53:38.009Z	
2025-08-26T05:47:58.000Z AUG 26, 2025, 01:47:58 PM	AUG 26, 2025	MAXIMO ZABAT	Logs	Falcata	285 pcs.	31.2		Ten Wheleer	CAM=2457	TCPTPL	MNY - 2C-979426 - 944	AUG 13, 2025	AUG 19, 2025	Manay	Jhon Ree Cervanties	Bunawan, Davao City	Charverson				AA. ALUD	7:45pm	arnelalud1010@gmail.com	7.5876633,125.8298335,12.190999984741211,2025-08-26T05:19:28.471Z	
2025-08-27T08:41:04.000Z AUG 27, 2025, 04:41:04 PM	AUG 27, 2025	CVC	Lumber	Falcata	8 Bundle	41.25	17.49	treleer track	LAL= 3540	CVC	CVC=1970	AUG 20, 2025	AUG 28, 2025	Monkayo	GRETEL B. BASOC	Bunawan, Davao City	Mindanao Omega Industry				Arnel A Alud	2:20pm	arnelalud1010@gmail.com	7.3984252,125.771058,82.5,2025-08-27T08:05:44.554Z	
2025-08-27T12:12:00.000Z AUG 27, 2025, 08:12:00 PM	AUG 27, 2025	ST. PETER	Casket	Facata	24	1.98	840	Wing van	CAM 8091	COL	NC-2A-0816-456	AUG 20, 2025	AUG 27, 2025	New Corella	Marites D. Jocson	Panacan davao city	ST. PETER				Roel Sapid	8:05 pm	roelsapid@gmail.com	7.398538446407295,125.77090012833794,49.660299724587 86,2025-08-27T11:41:13.334Z	
2025-08-27T22:33:38.000Z AUG 28, 2025, 06:33:38 AM	AUG 27, 2025	Mc-Mai(CEBU) Trading Corp.	post (TREATED)	Ipil-Ipil/Gmelina	330	11.31		Track Forward	YFE-683/SUBSTITUTE	CVC	CVC NO. DENRXI-08-042-2025	AUG 27, 2025	AUG 27, 2025	Bunawan	Juvy C. Hofilina	Maragusan, Davao de Oro	Standfilco Dole Philippines Inc.				Arnel A. Alud	10:53pm	arnelalud1010@gmail.com	7.3983975,125.7709944,56.099998474121094,2025-08-27T21:56:11.286Z	
2025-08-28T19:05:40.000Z AUG 29, 2025, 03:05:40 AM	AUG 29, 2025	Comval Wood Corp. Ind.	Pallets	Mangium and Gmelina	300	6	2542.656	Ten wheeler	TAD 478	COV	COV 1979	AUG 27, 2025	AUG 31, 2015	Monkayo	Gretel Basoc	Panabo City	Dole Philippines				Quincy Carlo Dalisay		dalisayquincycarlo@gmail.com	7.3984665,125.7710715,44.14699935913086,2025-09-01T19:53:38.009Z	
2025-08-28T19:12:13.000Z AUG 29, 2025, 03:12:13 AM	AUG 29, 2025	JLQ Ventures Mini-sawmill	lumber	falcata	1900	14.77	6266.67	Ten wheeler	NDF 36733	Certification	R13-25-SDS-TAL-0087	AUG 28, 2025	AUG 31, 2025	Talacogon	Vince Estopito	Bunawan, Davao City	Charverson				Quincy Carlo Dalisay		dalisayquincycarlo@gmail.com	7.3984665,125.7710715,44.14699935913086,2025-09-01T19:53:38.009Z	
2025-08-28T19:17:37.000Z AUG 29, 2025, 03:17:37 AM	AUG 29, 2025	Matin-ao Fresh Wood Corp.	Lumber	Falcata	3586	21.48	9111	Ten Wheeler	CAC 5349	COC	R13-SDS-BIS-25-08-030	AUG 27, 2015	AUG 31, 2025	Bislig City	Romel Arbolonio	Bunawan, Davao City	Charverson				Quincy Carlo dalisay		dalisayquincycarlo@gmail.com	7.3984665,125.7710715,44.14699935913086,2025-09-01T19:53:38.009Z	
TOTAL:					9,206 PIECES	352.55 CU.M.	18,777.82 BD.FT																		

8. THE DASHBOARD

8.1 Login & View Top Bar



- You may click Logout anytime.
- After logging in, your profile, date, and time appear.

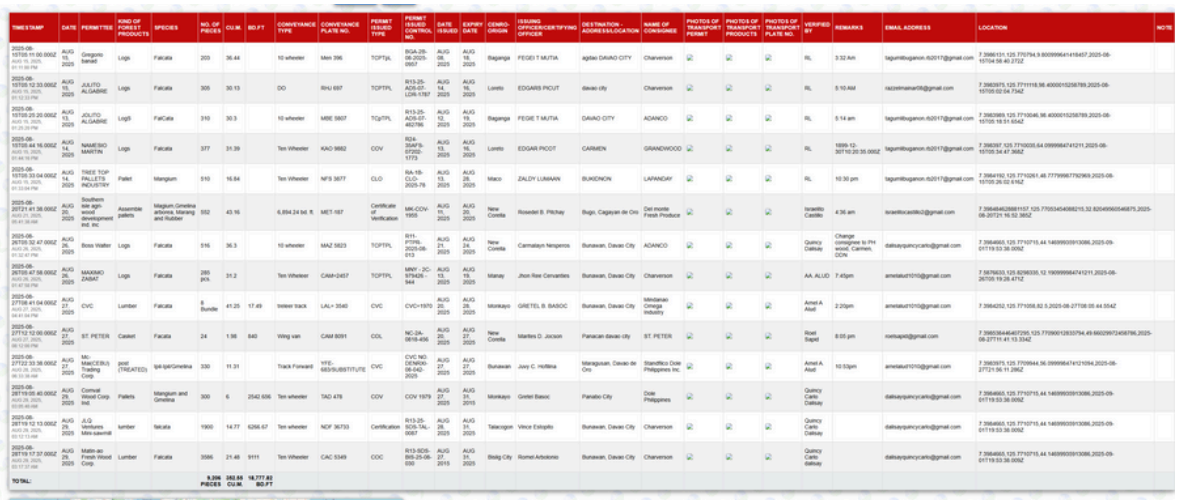
8.2 Search Records

- Type keywords in the Search box.
- The table updates instantly.

8.3 Toggle Months

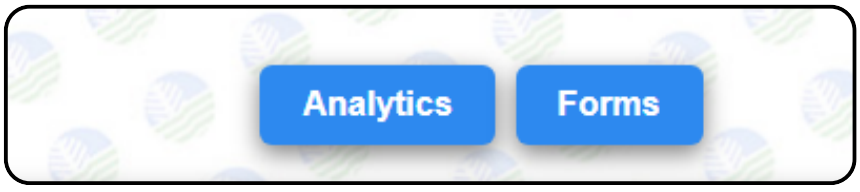
- Click Prev or Next to move between months.
- The label updates (e.g., August 2025).
- If no records exist, a No Records message appears.

8.4 Data Table



- Table automatically loads entries for the selected month.
- Footer calculates totals/summary data.

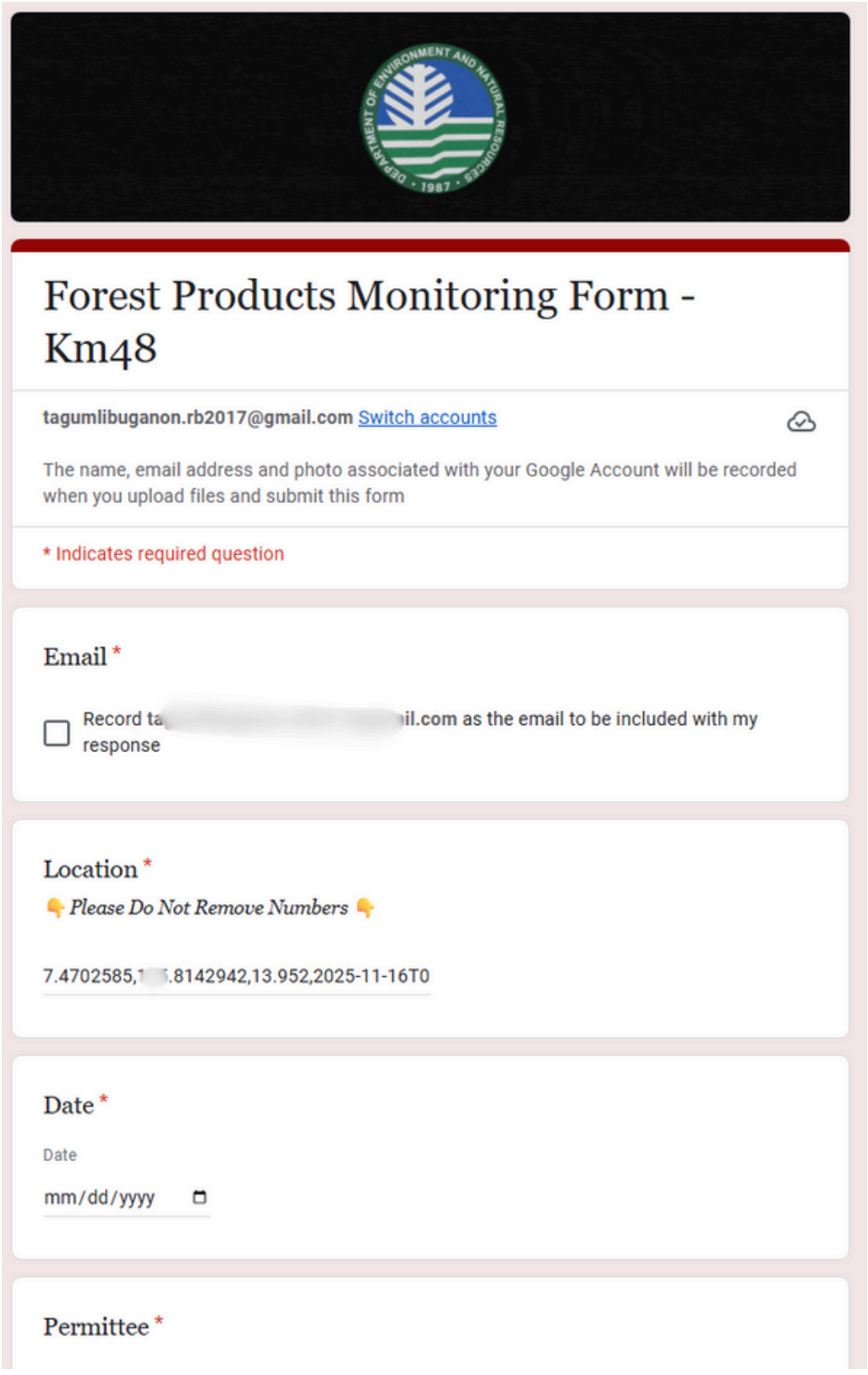
8.5 Open Other Sections



- Click Analytics → Charts and summaries
- Click Forms → Submit new monitoring records

9. FORM

⚠️ **Caution:** ***This form is intended for authorized personnel only.***



Forest Products Monitoring Form - Km48

tagumlibuganon.rb2017@gmail.com Switch accounts

The name, email address and photo associated with your Google Account will be recorded when you upload files and submit this form

* Indicates required question

Email *

Record ta[redacted]il.com as the email to be included with my response

Location *

👇 *Please Do Not Remove Numbers* 👇

7.4702585,1[redacted].8142942,13.952,2025-11-16T0

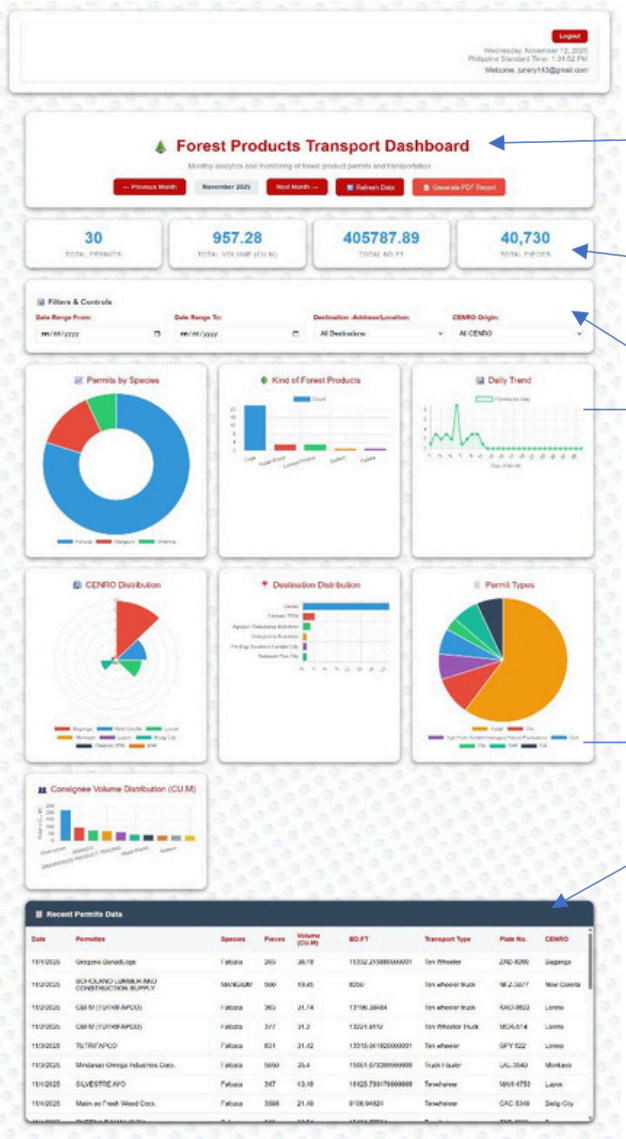
Date *

Date

mm/dd/yyyy

Permittee *

10. ANALYTIC



Layout Components:

- **HeaderSection:** Title, navigation, and action buttons
- **Statistics Cards:** Four key performance indicators
- **Filters Panel:** Date range and categorical filters
- **Charts Grid:** Seven interactive visualization charts
- **Data Table:** Detailed permit records

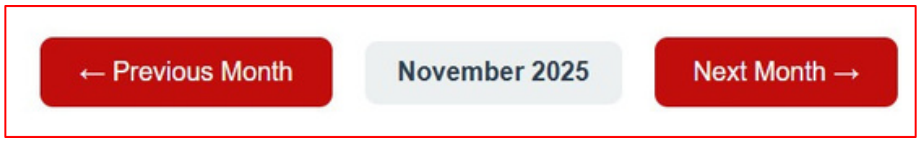
Basic Navigation

The dashboard uses consistent, intuitive navigation patterns.

✅ **BestPractice:** Startwith monthly navigation, then use filters to refine the dataset.

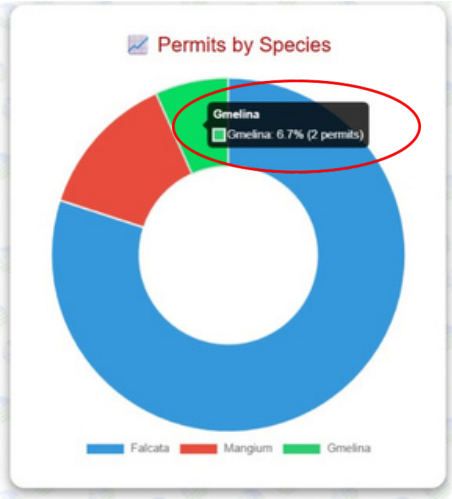
Navigation Elements:

- **Month Navigation:** Previous/Next buttons

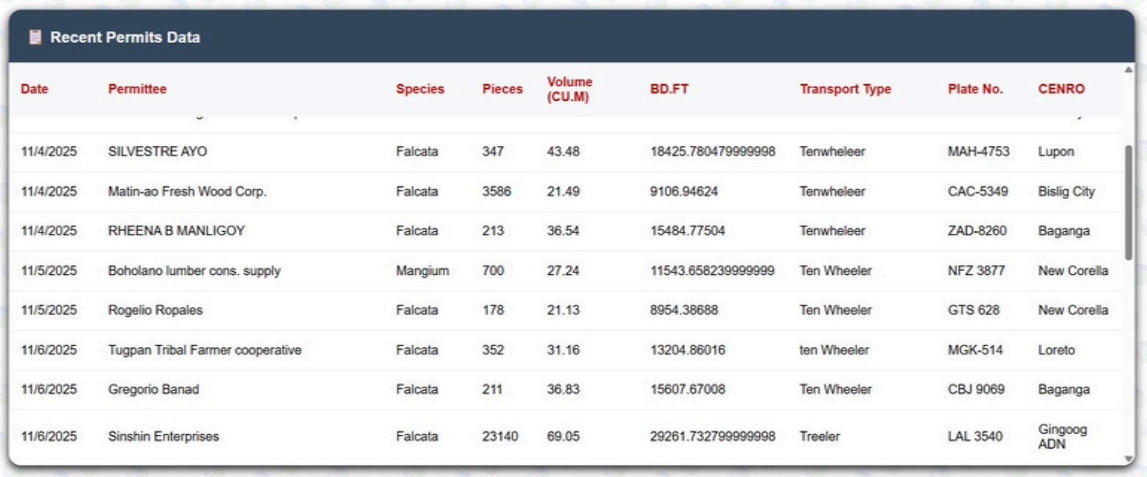


- **Filter Controls:** Dropdown menus, date pickers

- **Chart Interactions:** Hover for tooltips, click for details



- **Table Scrolling:** Vertical scroll for large datasets



Date	Permittee	Species	Pieces	Volume (CU.M)	BD.FT	Transport Type	Plate No.	CENRO
11/4/2025	SILVESTRE AYO	Falcata	347	43.48	18425.780479999998	Tenwheleer	MAH-4753	Lupon
11/4/2025	Matin-ao Fresh Wood Corp.	Falcata	3586	21.49	9106.94624	Tenwheleer	CAC-5349	Bislig City
11/4/2025	RHEENA B MANLIGOY	Falcata	213	36.54	15484.77504	Tenwheleer	ZAD-8260	Baganga
11/5/2025	Boholano lumber cons. supply	Mangium	700	27.24	11543.658239999999	Ten Wheeler	NFZ 3877	New Corella
11/5/2025	Rogelio Ropales	Falcata	178	21.13	8954.38688	Ten Wheeler	GTS 628	New Corella
11/6/2025	Tugpan Tribal Farmer cooperative	Falcata	352	31.16	13204.86016	ten Wheeler	MGK-514	Loreto
11/6/2025	Gregorio Banad	Falcata	211	36.83	15607.67008	Ten Wheeler	CBJ 9069	Baganga
11/6/2025	Sinshin Enterprises	Falcata	23140	69.05	29261.732799999998	Treeler	LAL 3540	Gingoog ADN

- **Refresh Button:** Manual data reload

11. DASHBOARD COMPONENTS

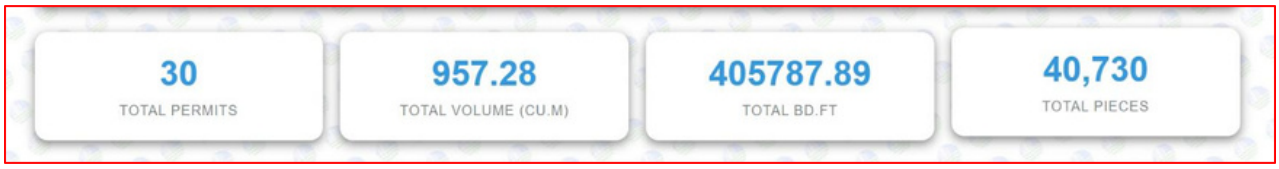
11.1 Statistics Cards

The **statistics cards** show KPIs for the selected time period. They update automatically when filters change.

Available Statistics

- **Total Permits:** Number of permits issued
- **Total Volume (CU.M):** Cumulative volume in cubic meters
- **Total BD.FT:** Total board feet
- **Total Pieces:** Sum of individual items

💡 **Tip:** Values reflect only currently filtered data.

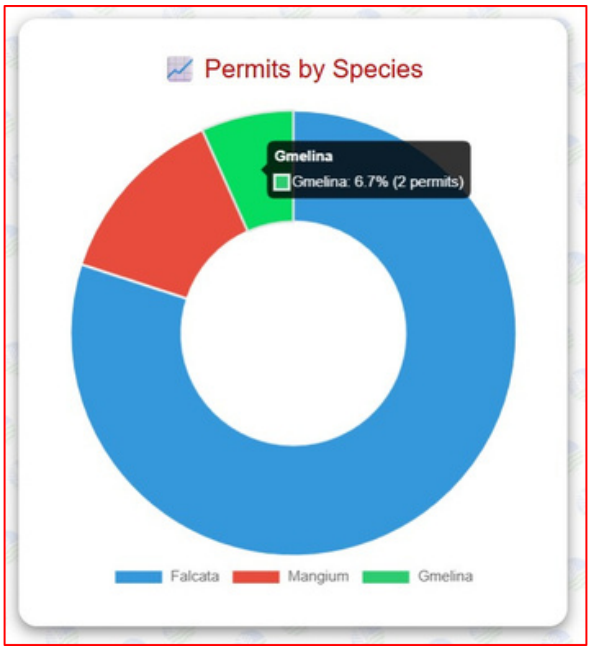


11.2 Interactive Charts

The dashboard includes **seven specialized charts** providing different insights.

📈Permits by Species (Doughnut Chart)

- Shows percentage distribution by species
- Hover to see percentages and permit counts
- Identifies dominant species



Kind of Forest Products (Bar Chart)

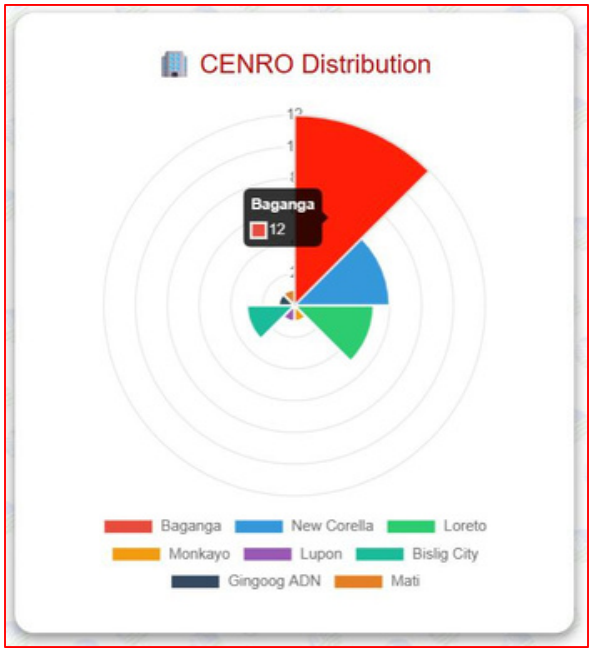
- Displays quantities by product type
- Compares product diversity

Daily Trend (Line Chart)

- Shows daily permit issuance patterns
- Highlights peak activity days

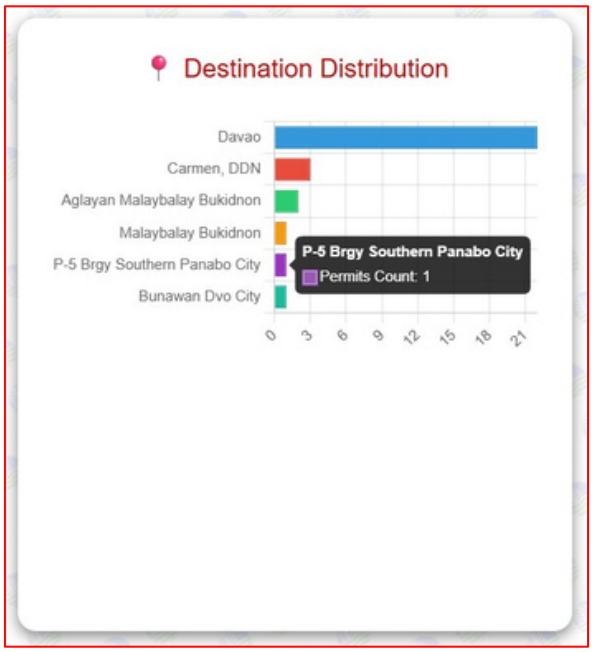
CENRO Distribution (Polar Area Chart)

- Geographic distribution by CENRO office
- Identifies most active regions



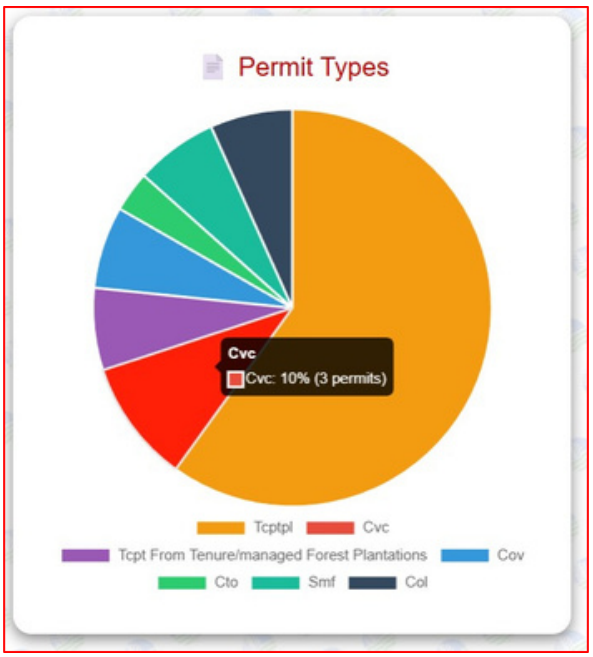
Destination Distribution (Horizontal Bar Chart)

- Top destinations for forest products
- Highlights primary markets



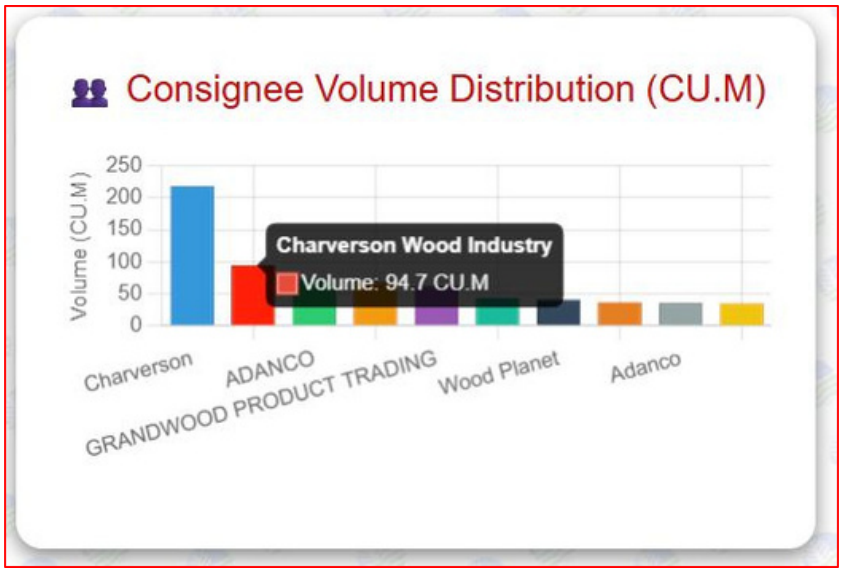
Permit Types (Pie Chart)

- Breaks down permit types by percentage



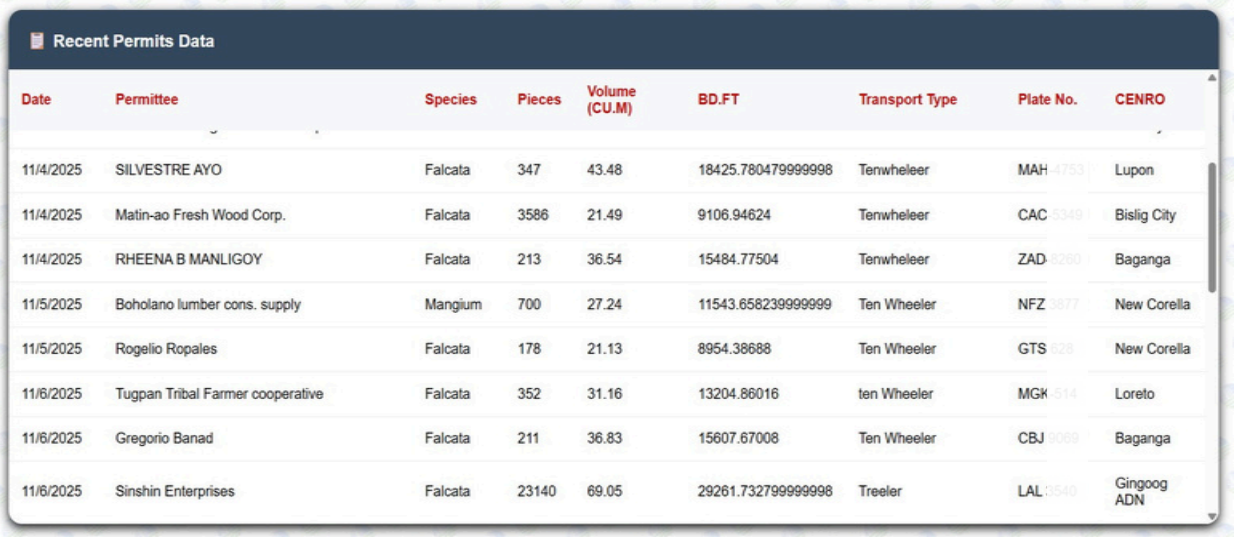
Consignee Volume Distribution (Bar Chart)

- Shows top consignees by volume (CU.M)



11.3 Data Table

The **Recent Permits Table** displays detailed permit records filtered by month.



Recent Permits Data

Date	Permittee	Species	Pieces	Volume (CU.M)	BD.FT	Transport Type	Plate No.	CENRO
11/4/2025	SILVESTRE AYO	Falcata	347	43.48	18425.780479999998	Tenwheleer	MAH	Lupon
11/4/2025	Matin-ao Fresh Wood Corp.	Falcata	3586	21.49	9106.94624	Tenwheleer	CAC	Bislig City
11/4/2025	RHEENA B MANLIGOY	Falcata	213	36.54	15484.77504	Tenwheleer	ZAD	Baganga
11/5/2025	Boholano lumber cons. supply	Mangium	700	27.24	11543.658239999999	Ten Wheeler	NFZ	New Corella
11/5/2025	Rogelio Ropales	Falcata	178	21.13	8954.38688	Ten Wheeler	GTS	New Corella
11/6/2025	Tugpan Tribal Farmer cooperative	Falcata	352	31.16	13204.86016	ten Wheeler	MGK	Loreto
11/6/2025	Gregorio Banad	Falcata	211	36.83	15607.67008	Ten Wheeler	CBJ	Baganga
11/6/2025	Sinshin Enterprises	Falcata	23140	69.05	29261.732799999998	Treeler	LAL	Gingoog ADN

Columns

- Date
- Permittee
- Species
- Pieces
- Volume (CU.M)
- BD.FT
- Transport Type
- Plate No.
- CENRO

Features

- Upto 50 most recent records
- Auto-filtered by selected month
- Responsive and scrollable
- Displays “No permits found” when empty

⚠ **Limitation:** Shows only latest 50 records for performance.

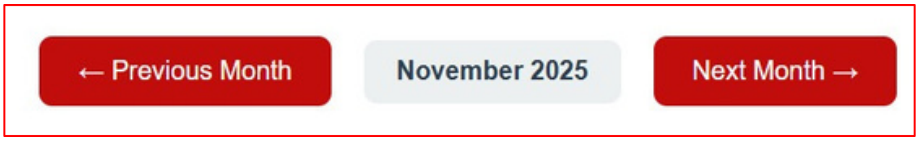
12. DASHBOARD COMPONENTS

12.1 Monthly Navigation

The monthly navigation system lets you browse historical data by month and year — the main method for time-based analysis.

Navigation Controls:

- ← **Previous Month:** Go backward in time
- **Current Month Display:** Shows month + year
- **Next Month →:** Go forward



How it Works:

1. Click Previous or Next Month
2. Dashboard filters all data for that month
3. Statistics update instantly
4. Charts regenerate
5. Data Table refreshes
6. Filters repopulate for relevant options

💡 **Tip:** Starts with current month. Use navigation to explore trends.

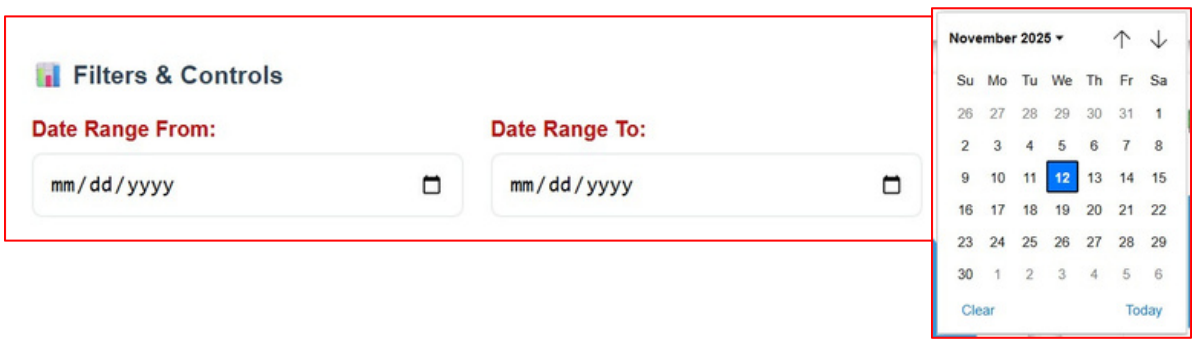
12.2 Advanced Filters

Use the **Filters & Controls** panel to narrow down specific data for analysis. Filters combine with month selection.

Available Filters

📅 Date Range Filters

- **DateFrom /Date To:** Define period inside current month
- Analyze weeks, events, or short-term shifts



📍 Location Filters

- **Destination Filter:** Filter by delivery location
- **CENRO Origin Filter:** Filter by issuing office
- Dropdown lists update dynamically

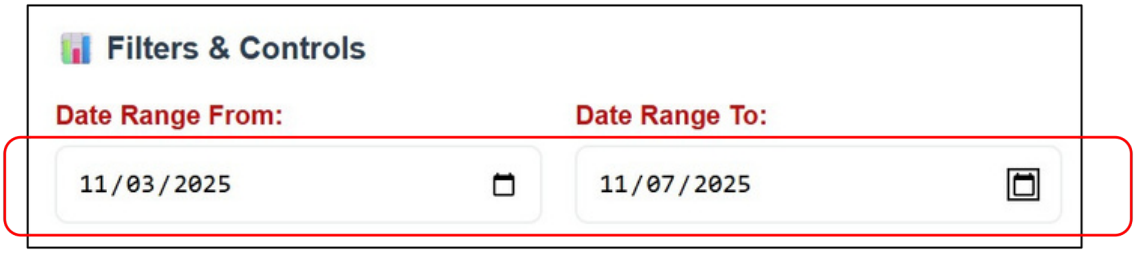
Filter Behavior

- Multiplefilters stack (AND logic)
- "All" resets a filter
- Filters persist across months

✅ **Strategy:** Start broad, then drill down with specific filters.

12.3 Date Range Filtering

Fine-tune analysis inside the current month.



Use Cases

- Weeklyoreventanalysis
- Comparebefore/after holidays
- Customreportingperiods

Best Practices

- Staywithinselected month
- Beginbroad,narrow gradually
- Clearfilterstoreset
- Combinewithother filters for precision

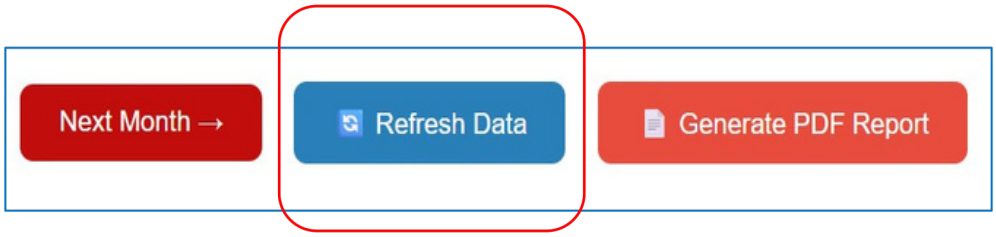
⚠️ **Note:** Cannotspanmultiple months. Compare months separately.

13. Data Management

13.1 Data Refresh

Connected live to **Google Sheets** for current info.

Refresh Steps



1. Click “ Refresh Data”
2. “Loading data…” appears
3. Connects to API
4. Downloads and processes data
5. Charts regenerate
6. Filters update

When to Refresh

- Start ofasession
- After newpermits
- If chartslook outdated
- After maintenance or updates

💡 **Tip:** Takes 5–15 seconds; indicator disappears when ready.

13.2 Data Sources

Primary Source: Google Sheets database

Key Points

- Liveupdates, standardized columns
- Maintains historical records

Data Fields

- Permit Info: Date, permittee, permit type
- Product Details: Species, volume, pieces, board feet
- Transport: Vehicle type, plate no., destination
- Administrative: CENRO, consignee

13.3 Data Validation

Ensures consistency and handles missing info.

Validation Features

- Missing data→ “Unknown”
- Numeric conversion and date parsing
- Text normalization groups similar entries

Quality Indicators

- “Unknown”categories visible Invalid
- values ignored in stats Error message
- for connection issues “No permits
- found” for empty results

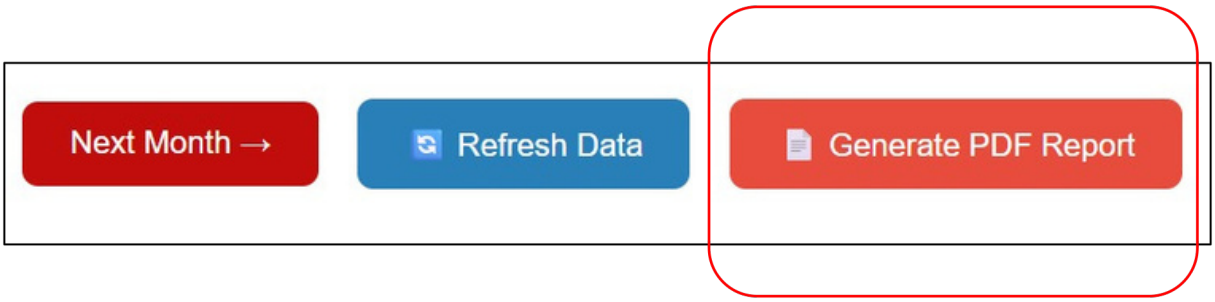
⚠ **Note:** Edits must be made in the original Google Sheet.

---

14. REPORTING FEATURES

14.1 PDF Report Generation

Generates detailed PDF reports from your current filters.



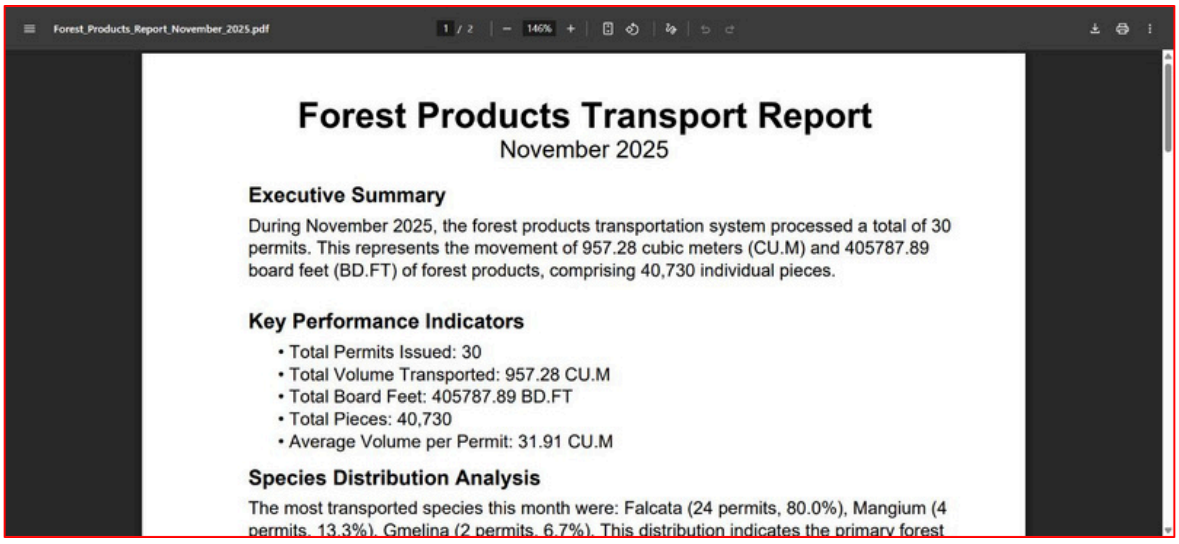
Steps

1. Select month
2. Apply filters
3. Click "Generate PDF Report"
4. Wait for analysis
5. PDF downloads automatically

Report Contents

- ExecutiveSummary
- KPIs andstatistics
- Species/CENRO / Consignee analyses
- Destinationbreakdown
- Daily activity patterns
- Recommendations

Features: Client-side generation, formatted layout, auto-named by period.



14.2 Report Customization

Adjust filters before generating to tailor content.

Customization Options

- **Time Period:** Month or range
- **Region:** CENRO focus
- **Destination:** Market reports
- **Date Range:** Weekly or event focus

Report Types

- Monthly(default)
- Regional(CENRO-based)
- Market-specific (destination)
- Period (custom dates)

14.3 Scheduled Reports

No auto-scheduler, butyoucan adopt manual routines.

Recommended Schedule

- Monthly (end ofmonth)
- Weekly updates(viadate range)
- Quarterly reviews
- Annual summaries

💡 **Tip:** Include month+filters in filenames for organized archives.

14. ANALYTICS & INSIGHTS

14.1 Species Analysis

Understand species composition and movement trends.

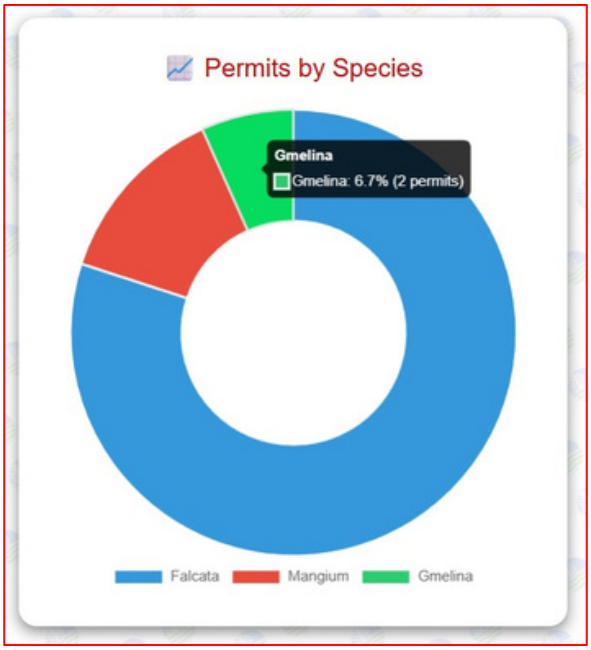
Features

- Percentage breakdown charts
- Hover for counts + percentages
- Color-coded species
- Auto-group similar names

Use Cases

- Biodiversity monitoring
- Sustainability checks
- Market demand analysis
- Compliance tracking

✅ **Tip:** Compare species across months to spot seasonal patterns.



14.2 Volume Tracking

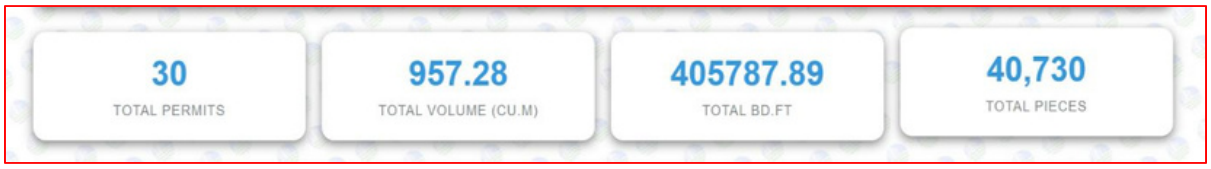
Quantitative view of movements.

Metrics

- Cubic Meters (CU.M)
- Board Feet (BD.FT)
- Piece Count
- Average Volume per Permit

Applications

- Economic impact calculation
- Capacity planning
- Consignee analysis
- Trend monitoring



14.3 Trend Analysis

Identify patterns over time.

Tools

- Daily Trend Chart
- Monthly comparisons
- Month-over-month changes
- Peak activity detection

Patterns to Monitor

- Seasonal variation
- Weekly patterns
- Growth trends
- Regulatory impact

📈 **Best Practice:** Compare several months to distinguish true trends.

15. TROUBLESHOOTING

15.1 Common Issues

Data Loading

Problem: “Loading data…” stays forever
Solutions:

- Check internet
- Refresh (F5 / Ctrl + R)
- Click “🔄 Refresh Data”
- Clear cache
- Try another browser

Charts Blank

Problem: Charts don’t appear
Solutions:

- Enable JavaScript
- Disable blocking extensions
- Refresh
- Confirm data exists
- Use supported browser

PDF Failing

Problem: PDF doesn’t download
Solutions:

- Allow pop-ups
- Check downloads folder
- Ensure data loaded
- Try other filters
- Clear cache and retry

15.2 Performance Tips

Browser

- Use Chrome / Firefox
- Keep updated
- Close unused tabs
- Disable heavy extensions

Data Handling

- Filter large datasets
- Refresh only as needed
- Use monthly navigation first
- Clear filters when switching focus

System

- Stable internet (≥ 1 Mbps) 4 GB RAM
- recommended Resolution ≥ 1024×768
- (ideal 1920×1080)

8.3 Error Messages

`"Failed to load data. Please check your connection and try again."`

- Meaning: Network or API issue
- Fix: Reconnect & refresh

`"No permits found for the selected period"`

- Meaning: Filters exclude all data
- Fix: Change month or clear filters

`"Charts not available - JavaScript required"`

- Meaning: JavaScript disabled
- Fix: Enable JS in settings

💡 Most errors resolve after refresh or data reload.

---

16. MOBILE USAGE

16.1 Mobile Features

Fully responsive for phones & tablets.

Optimizations

- Auto-adjust layout
- Touch-friendly buttons
- Responsive charts
- Scrollable tables
- Stacked navigation

Layout Changes

- Single column view
- Larger text
- Simplified controls
- Collapsible sections

✅ **Tip:** Use landscape mode for better chart visibility.

16.2 Touch Interactions

Gestures

- **Tap:** Activate buttons / filters
- **Hold:** Show chart tooltips
- **Swipe:** Scroll tables
- **Pinch:** Zoom browser

Mobile Extras

- Large touch targets
- Swipe-friendly tables
- Mobile-optimized PDFs

📱 **Tip:** Stable internet gives smoother chart animation.

17. SECURITY & PRIVACY

17.1 Data Security

Measures

- Read-only access
- HTTPS encryption
- Nolocal storage
- Client-side PDF generation
- Nothird-party sharing

Protections

- Secure API integration
- No persistent sessions
- Uses browser security
- Login required

🔒 **Note:** All processing is local to the user's browser.

17.2 Privacy Policy

Practices

- Personal data collection
- No tracking or analytics
- No cookies
- Local processing only

Usage

- Data shown for visualization only
- Cleared on browser close
- No retention or uploading
- Full user control

✅ **Assurance:** Privacy by Design — minimal exposure, maximum control.

---

18. SUPPORT & UPDATES

18.1 Getting Help

Self-Help Resources

- This manual
- Troubleshootingsection
- Built-inerrormessages
- Browserhelppages

Escalation Steps

1. Check this manual
2. Try basictroubleshooting
3. Documenttheissue (error, browser, steps)
4. Contactsystemadministrator (for data issues)
5. Reportbugstodevelopment team

When Reporting: Include

- What youweredoing
- Error message
- Browser+version
- Consistencyofissue
- Screenshot(ifpossible)

18.2 Version History

Current Version 1.2

- Complete dashboard launch
- 7 Chart types
- PDF reporting
- Mobile responsive
- Advanced filters
- Live Google Sheets link

Planned Enhancements

- New chart types
- CSV/Excel exports
- Predictive analytics
- Custom dashboards
- Automated alerts

🔄 **Note:** Loads latest version on refresh — no manual update needed.

Feature Requests

Provide:

- Clear description
- Use case
- Priority level
- Specific requirements

✅ **Continuous Improvement:** User feedback drives future development.

APPENDICES

APPENDIX A – GLOSSARY OF TERMS

Term / Acronym	Definition
DENR	*Department of Environment and Natural Resources. (1987). Reorganization of the Department of Environment and Natural Resources (Executive Order No. 192)*. Official Gazette of the Republic of the Philippines. *https://www.officialgazette.gov.ph/1987/06/10/executive-order-no-192-s-1987/*
PENRO	*Provincial Environment and Natural Resources Office. (1987). Provincial offices of the Department of Environment and Natural Resources (Executive Order No. 192)*. Official Gazette of the Republic of the Philippines. *https://www.officialgazette.gov.ph/1987/06/10/executive-order-no-192-s-1987/*
CENRO	*Community Environment and Natural Resources Office* – a local office under the DENR responsible for implementing environmental programs and monitoring activities at the community level. *(Department of Environment and Natural Resources, n.d.).* https://denr.gov.ph/
Dashboard	A digital interface that visually presents real-time data and analytics to facilitate monitoring and decision-making. *(Microsoft, n.d.). What is a data dashboard? https://www.microsoft.com/en-us/power-bi/data-dashboard*
Permittee	An individual or company authorized by the DENR to transport, harvest, or process forest products. *(Department of Environment and Natural Resources, n.d.). Forest Management Bureau: Policies and guidelines. https://forestry.denr.gov.ph/*
Forest Products	Materials derived from forests, including timber, logs, lumber, and non-timber resources. *(Food and Agriculture Organization of the United Nations, n.d.). Forest products definitions.* https://www.fao.org/forestry/
Monitoring Map	A geographic feature within the system that displays transport routes, checkpoints, and product movement locations. (Esri, n.d.). What is a monitoring map? https://www.esri.com/
Analytics Visualization	Graphs, charts, and tables used in the system to represent and analyze operational data. https://www.tableau.com/learn/articles/data-visualization
BD. FT (Board Feet)	A standard unit of measurement used to quantify lumber volume. (U.S. Forest Service, n.d.). Timber measurement and conversion. https://www.fs.usda.gov/
CU. M (Cubic Meter)	A unit of volume used to measure logs or timber in bulk quantities. (International System of Units, n.d.). SI base units: The cubic meter. https://www.bipm.org/

CVC (Certificate of Verification and Compliance)	A document issued by the DENR verifying that forest products being transported or processed have been inspected and comply with legal requirements. *(Forest Management Bureau, n.d.). Forest product transport documentation.* https://forestry.denr.gov.ph/
TCPTPL (Transport Certificate Permit to Transport Processed Lumber)	A permit authorizing the legal transport of processed lumber from one location to another. *(Forest Management Bureau, n.d.). Permits and transport requirements for forest products.* https://forestry.denr.gov.ph/
CVCN (Certificate of Verification and Compliance Number)	A unique control number assigned to each issued CVC for record tracking and validation. *(Forest Management Bureau, n.d.). Forest product verification system.* https://forestry.denr.gov.ph/
COV (Certificate of Verification)	A document certifying that forest products have been physically verified by authorized DENR personnel. *(Department of Environment and Natural Resources, n.d.). Verification and compliance guidelines.* https://denr.gov.ph/
CPO (Certificate of Product Origin)	A document indicating the lawful origin of forest products, ensuring compliance with DENR regulations. *(Forest Management Bureau, n.d.). Product origin certification standards.* https://forestry.denr.gov.ph/
SMF (Self-Monitoring Form)	A legal document required to accompany the transport of harvested timber from a tree plantation with a Certificate of Private Tree Plantation Ownership (CTPO). *(Department of Environment and Natural Resources, n.d.). Citizen's Charter No. RO-F-02: Issuance of Self-Monitoring Form (SMF).* https://www.penroiloilo.com.ph/wp-content/uploads/2020/12/RO-F-02-ISSUANCE-OF-SELF-MONITORING-FORM-SMF.pdf
CLO (Certificate of Lumber Origin)	A formal document confirming the origin and legality of lumber or forest materials. *(Forest Management Bureau, n.d.). Certificate of lumber origin procedures.* https://forestry.denr.gov.ph/

APPENDIX B – SYSTEM REQUIREMENTS

The Forest Products Transport Monitoring Dashboard is a web-based application accessible through a secure browser connection. To ensure optimal performance, the following system requirements must be met:

Minimum Requirements:

- Hardware:
  - Dual-core processor (2.0 GHz or higher)
  - 8 GB RAM
  - 10 GB available disk space
  - 1280x720 screen resolution
- Software:
  - Operating System: Windows 10 or later / macOS 10.14+
  - Web Browser: Google Chrome (latest version) or Microsoft Edge
- Internet:
  - Stable broadband connection (minimum 5 Mbps)
- User Access:
  - Active DENR or CENRO account credentials

Recommended Setup:

- Quad-core processor (2.5 GHz or higher)
- 16 GB RAM
- Dual-monitor configuration for data analysis
- High-speed internet (10 Mbps or more)

APPENDIX C – USER ROLES AND ACCESS LEVELS

User Role	Description	Access Level / Privileges
Administrator	Manages system configuration, user registration, data integrity, and report	Full access to all modules, including database and settings.
PENRO Officer	Oversees all CENRO activities, validates permits, and monitors dashboard analytics.	Access to analytics dashboard, monitoring maps, and report exports.
CENRO Staff	Encodes and verifies permit details, monitors transport activity, and updates records.	Access to data entry forms, monitoring dashboard, and summary tables.
Checkpoint Officer	Validates transport documents, confirms vehicle movement, and updates checkpoint logs.	Limited access to permit validation and monitoring map.
Viewer / Auditor	Observes analytics, reviews data trends, and verifies compliance reports.	Read-only access to analytics dashboard and summary reports.

APPENDIX D – SAMPLE FORMS

Field	Description
Timestamp	Automatically recorded date and time of the transaction or system entry.
Date	The date when the record was created or updated.
Permittee	Authorized individual or company transporting forest products.
Kind of Forest Products	Classification of forest product (e.g., logs, lumber, poles, fuelwood, non-timber).
Species	Scientific or common name of the forest species (e.g., Falcata, Mahogany, Lauan).
No. of Pieces	Total number of pieces included in the shipment.
CU.M.	Total volume of forest products in cubic meters.
BD.FT.	Total volume measured in board feet.
Conveyance Type	Type of vehicle or transport used (e.g., truck, van, multicab).
Conveyance Plate No.	Registered plate number of the vehicle transporting the forest products.
Permit Issued Type	Type of permit granted (e.g., CVC, TCPTPL, COV, COL, CLO, CPO, SMF).
Permit Issued Control No.	Official control number of the issued permit for tracking and verification.

Date Issued	Date when the permit was formally issued by the authorized officer.
Expiry Date	Last valid date for transporting forest products under the permit.
CENRO – Origin	The CENRO office where the permit was issued or where the forest products originated.
Issuing Officer / Certifying Officer	Name and designation of the DENR officer who approved or certified the permit.
Destination – Address / Location	The final delivery point or address where forest products are to be received.
Name of Consignee	Individual or company designated to receive the forest products.
Photos of Transport Permit	Digital image or scanned copy of the approved transport permit for verification.
Photos of Transport Products	Images showing the actual forest products being transported.
Photos of Transport Plate No.	Photo evidence of the vehicle's plate number used in transport.
Verified by	Name and position of the officer who verified the transport and documents.
Remarks	Additional notes or findings from inspection or verification.
Email Address	Contact email of the permittee or consignee for communication purposes.
Location	Geographic coordinates or site details where the transaction or inspection took place.

APPENDIX E – TROUBLESHOOTING GUIDE

Issue	Possible Cause	Recommended Action
Unable to log in	Incorrect password or inactive user account	Reset password using "Forgot Password" option or contact the administrator.
Dashboard not loading	Browser not updated or slow internet connection	Clear browser cache, update the browser, or check your network connection.
Missing data in dashboard	Delay in database synchronization	Wait for a few minutes or refresh the page; if issue persists, report to IT support.
Error message when exporting reports	PDF plugin not installed or export timeout	Ensure PDF viewer is enabled and retry exporting the report.
Map not displaying	Browser's location permissions disabled	Enable location access or check if map service is active.
Analytics charts not updating	Filter or date range not selected	Reset filters and select the desired parameters before viewing charts.

APPENDIX E – TECHNICAL SUPPORT

For system-related issues, technical support, or inquiries, users may contact:
Department of Environment and Natural Resources-
Provincial Environment and Natural Resources Office (DENR-PENRO) –
Tagum, Davao del Norte

- Office Address: *FR26+HXP, Daang Maharlika Hwy, Tagum, Davao del Norte*
- Telephone: *(084) 216-6302*
- Email: *penrodavaodelnorte@denr.gov.ph*
- Official Website: *www.r11.denr.gov.ph*
- Office Hours: *Monday to Friday, 8:00 AM – 5:00 PM*

Technical Support Contact:

- System Administrator: *Junery Colada*
- Email: *info@rave-master.de*
- Contact No.: *+63 9092534256*

SYSTEMS EVALUATION

The development and implementation of the **Forest Products Transport Monitoring Dashboard** represent a significant advancement in **digital governance, environmental monitoring, and operational transparency**.

The system enhances DENR's ability to maintain a centralized, verifiable, and data-driven record of all forest product transport activities. This innovation not only supports enforcement but also encourages accountability and fosters public confidence in environmental regulation.

Users and administrators report the following benefits:

- **Ease of Use:** Simple navigation and responsive visual analytics.
  Time Efficiency: Reduced manual checking and data consolidation.
- **Improved Decision-Making:** Quick access to critical data enables proactive management.
  Enhanced Reporting: Exportable, visual summaries for monthly and annual reporting.

To maintain its effectiveness, the following continuous improvement steps are recommended:

1. Regular **system updates** to ensure stability and security.
2. Ongoing **user feedback collection** to refine functionality and usability.
3. **Periodic training** for new personnel to ensure proper system utilization.
4. **Integration planning** with future digital systems (e.g., enforcement, GIS mapping).

Ultimately, this system reflects DENR's core values of Discipline, Excellence, Nobility, Responsibility, and Care for the Environment. It empowers personnel to work more efficiently, strengthens public trust, and supports the agency's vision of a cleaner, greener, and more transparent Philippines.

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