

# Transparent Traceability Systems for Deforestation-Driving Commodities

5 key principles for effective supply chains  
applied in Gabon's national timber traceability  
system, SNTBG



environmental  
investigation  
agency

# The EUDR and Traceability

Art 1,1. : The EUDR requires declaration of the origin farm or forest “for relevant products [placed on the European market] that contain, have been fed with, or have been made using relevant commodities, namely cattle, cocoa, coffee, oil palm, rubber, soya and wood”







Art 9, 1. (d): [Operators shall collect...] “the **geolocation of all plots of land** where the relevant commodities that the relevant product contains, or has been made using, were produced, as well as the **date or time range of production**”

To do this efficiently and with confidence, operators need to establish **traceability**

# Why do supply chains break down?

\$, €,  
£, ¥, ...

## The Retail Value of Transnational Crime

Counterfeiting		\$923 billion to \$1.13 trillion
Drug Trafficking		\$426 billion to \$652 billion
Illegal Logging		\$52 billion to \$157 billion
Human Trafficking		\$150.2 billion
Illegal Mining		\$12 billion to \$48 billion
IUU Fishing		\$15.5 billion to \$36.4 billion
Illegal Wildlife Trade		\$5 billion to \$23 billion
Crude Oil Theft		\$5.2 billion to \$11.9 billion
Small Arms & Light Weapons Trafficking		\$1.7 billion to \$3.5 billion
Organ Trafficking		\$840 million to \$1.7 billion
Trafficking in Cultural Property		\$1.2 billion to \$1.6 billion
<b>Total</b>		<b>\$1.6 trillion to \$2.2 trillion</b>

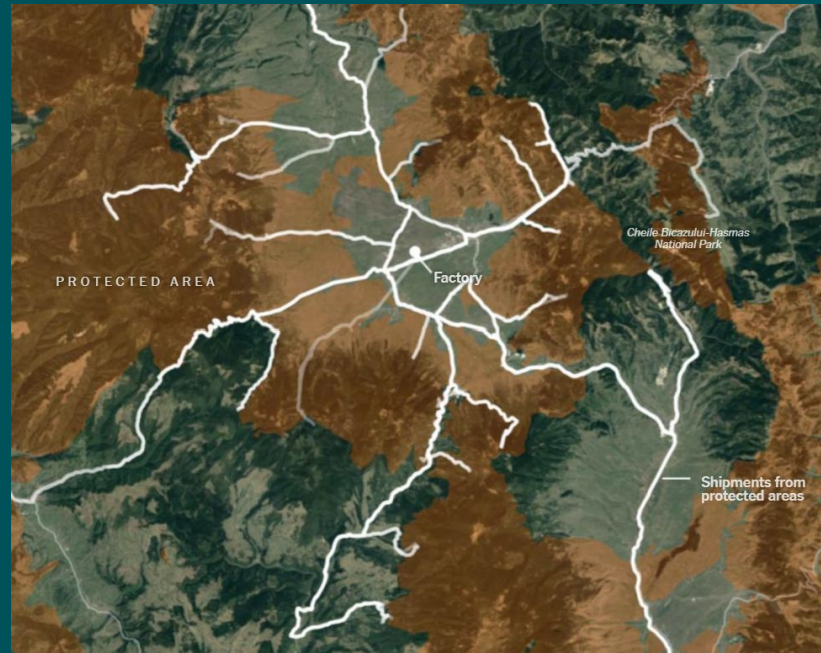


Source: *Transnational Crime and the Developing World*



# 5 principles of effective national commodity traceability systems

- 1) unbroken supply chain
- 2) traceability to the source
- 3) direct digital inputs
- 4) offline functionality
- 5) transparent open data



New York Times, "Europe Is Sacrificing Its Ancient Forests for Energy", Sept 7, 2022:  
<https://www.nytimes.com/interactive/2022/09/07/world/europe/eu-logging-wood-pellets.html?partner=slack&smid=sl-share>



# EIA's Vision for Transparent and Traceable Natural Resource Management



**VS**



Widely recognized need for digital traceability systems

## Status Quo

- Paper permits
- Most international initiatives set out to create the “Cadillac” system
- Too expensive, too much time → lose the moment of political will

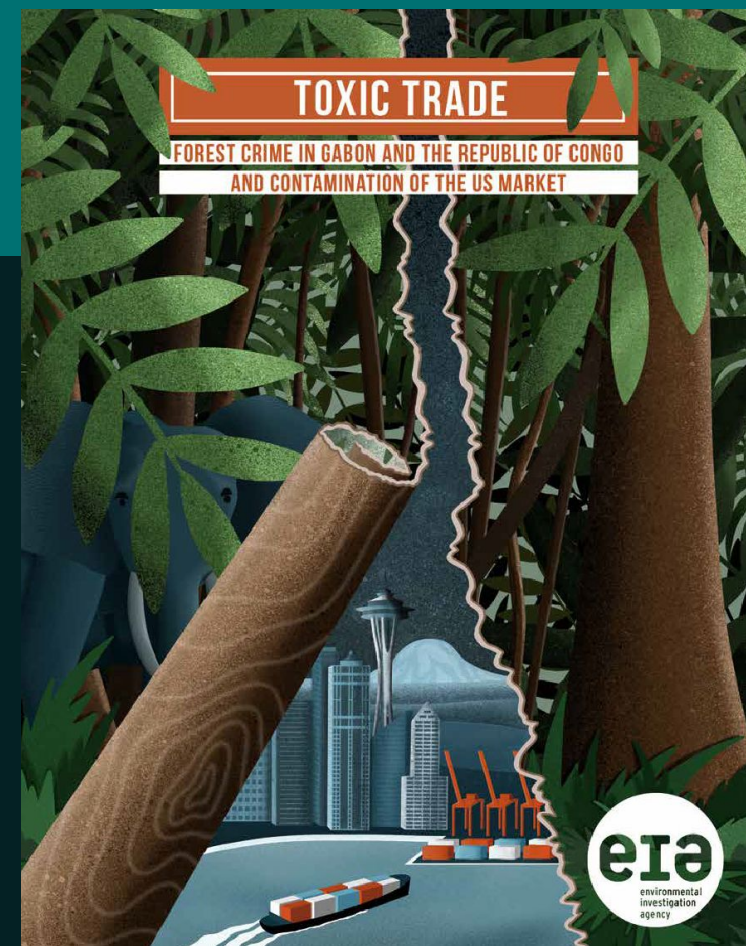
## EIA's Vision

Offer an open-source system that can quickly be adapted to new countries

# Gabon: Context

## EIA Investigation: 2018

- Main documented illegalities (Gabon and Republic of Congo):
  - Fraudulently obtaining concession rights (100,000+ ha)
  - Over-harvesting (in particular okoume, by 5,000+ m<sup>3</sup>)
  - Harvest of non-authorized species;
  - Operation without management plan for 10+ year (>1 million m<sup>3</sup> exported)
  - Exporting well over log quota
  - Tax evasion (\$3-6.7 million/year)
  - Corruption (few thousand to hundreds of thousands, and likely millions of dollars in bribes)



## Kevazingo-gate: 2019

- 300 containers of seized kevazingo logs went missing
- VP and Minister of Water, Forests and the Environment sacked

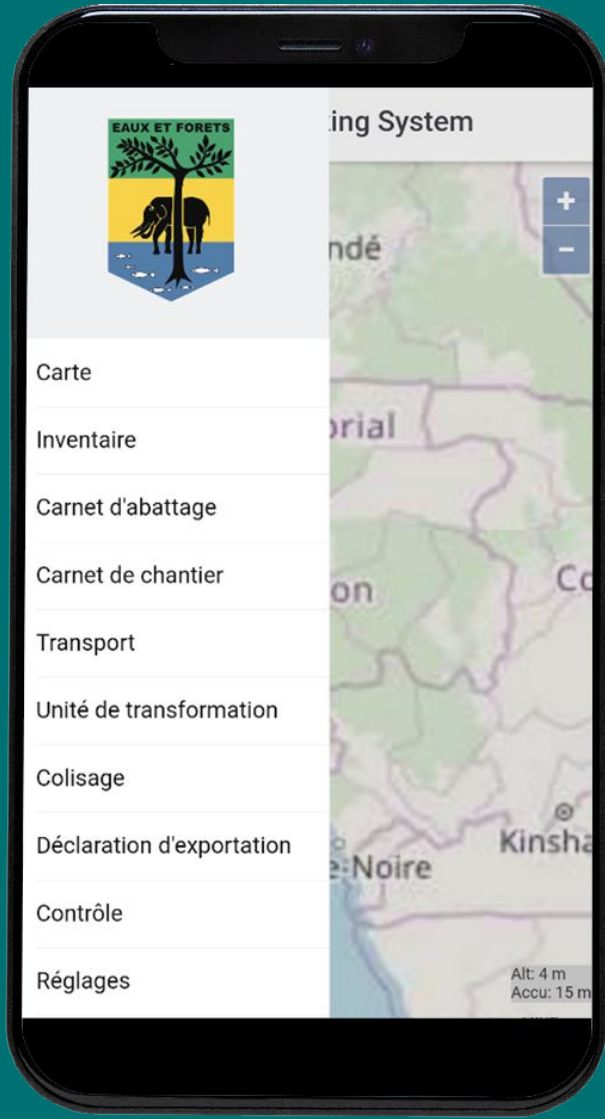
# Gabon: SNTBG Overview

## le Système National de Traçabilité du Bois du Gabon

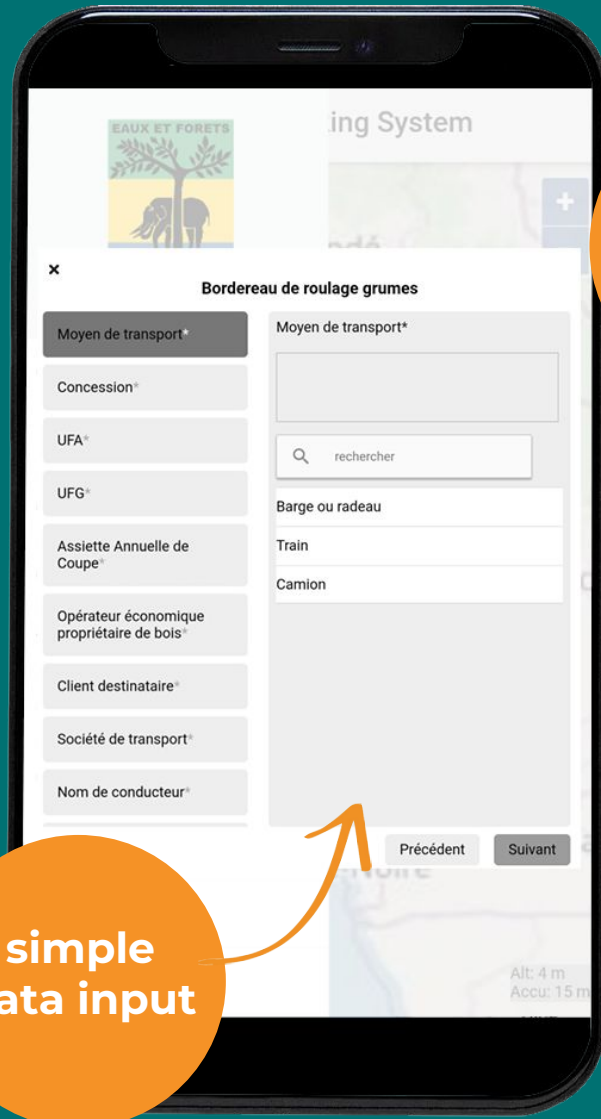
- Built as open-source software by Code4Nature in cooperation with EIA, and in close collaboration with Gabon's MEF
- Digitization of Gabon's forest sector regulations – moving from paper to digital; Android smartphone based; functions offline
- Differentiated user access according to permission level:
  - Gov't admin – full access
  - General gov't user – specified access according to role
  - Company – management access over own company data
  - Public – transparent access without login to all non-sensitive data

**EIA's GOAL:** to make digital, transparent, traceable supply chains easy, cheap and universal





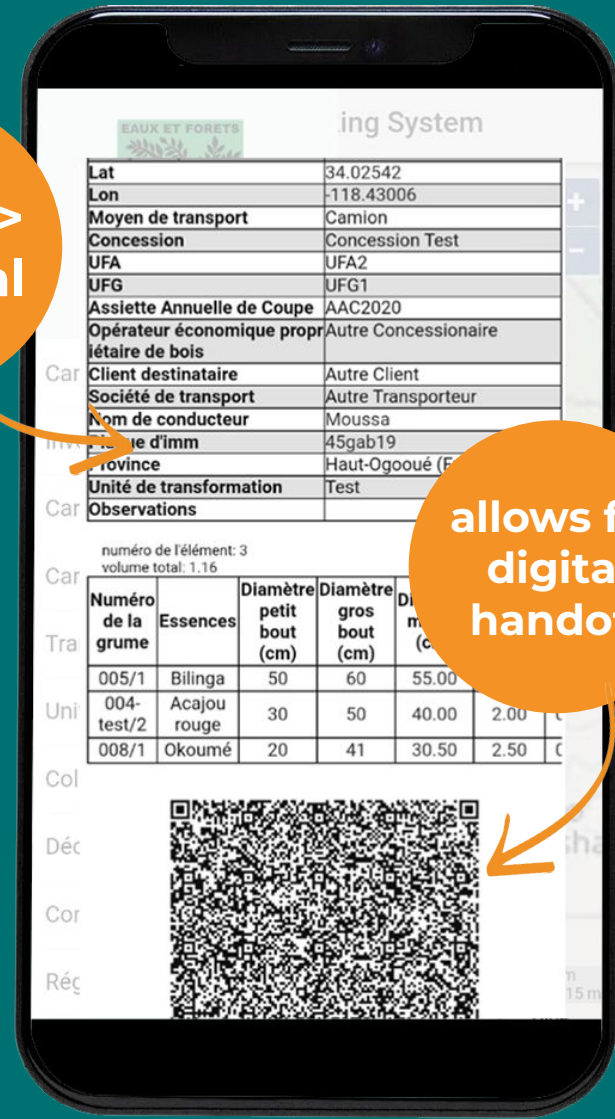
**Mobile app**



simple data input

**Registering a digital permit to transport logs**

digital > physical



allows for digital handoff

**Generates a permit**





## Tree Inventoried



Registered + Photographed

## Log Trucks Scanned



Control Officers Verify Truck Registration

## Arrival at Sawmill



Logs Scanned at Entry

## Tree Harvested



Log Registered + Numbered

## Logs Loaded



Logs Scanned + Truck Registered

## Wood Processed



Processed Wood Scanned



# Concession and AAC Boundaries

## Web Application and Geoportail

options

Couches

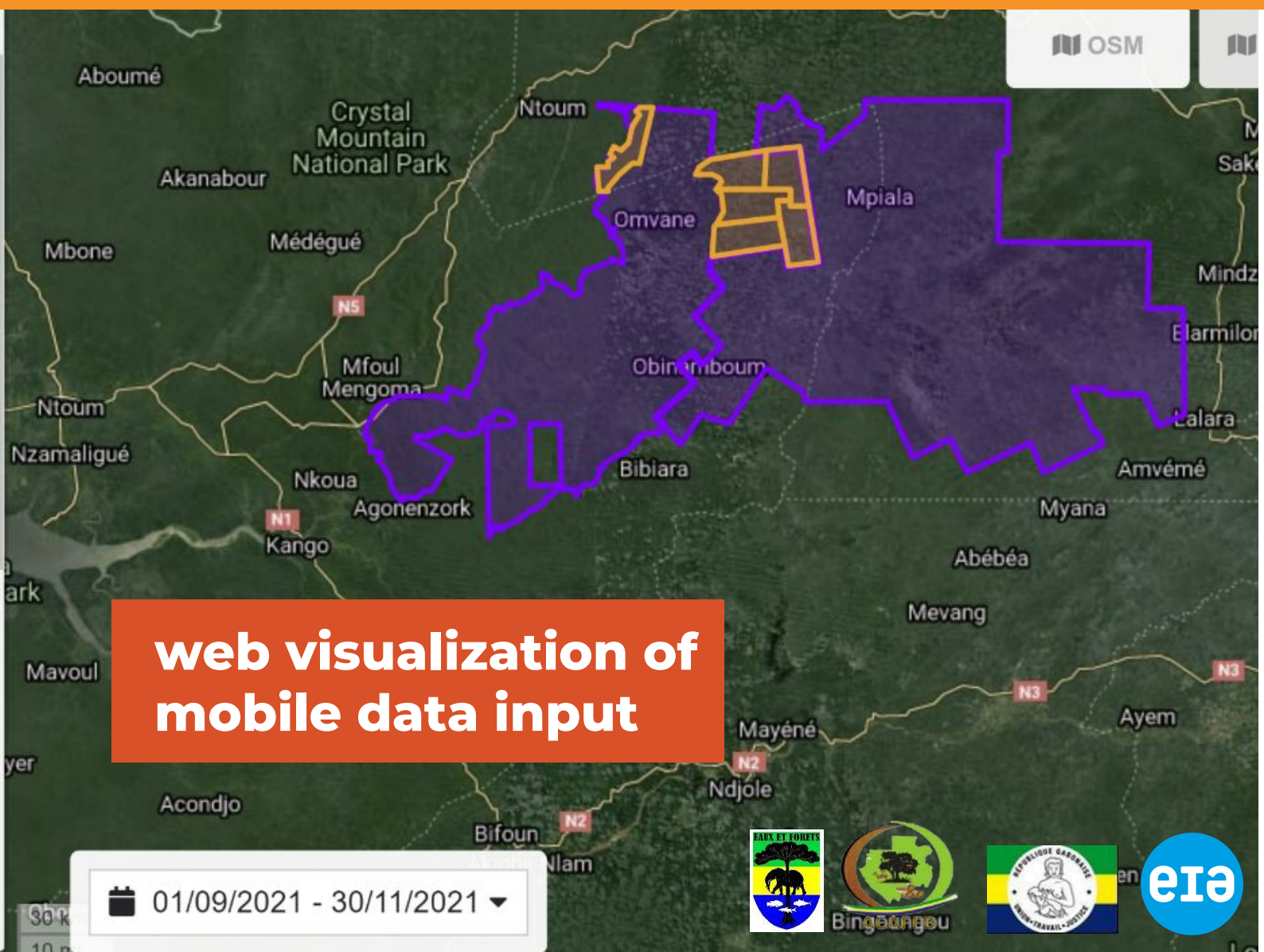
Concessions

- Concessions
- UFA
- UFG
- AAC
- Parcelles
- Arbres inventoriés
- Arbres exploités

Exploitation

Transports

- Transports
- Transports grumes
- Transports colis
- Points de départ
- Points d'arrivée



web visualization of mobile data input

# AAC Inventory (tree by tree)

## Web Application and Geoportal

No other system in the world is tracking individual trees in this way

options

Couches

Concessions

- Permis constituants
- Permis constituants PFA
- Permis constituants PI
- Permis constituants PTE
- Permis constituants EXT
- Concessions
- UFA
- UFGs
- AAC
- Arbres inventoriés
- Arbres exploités
- Arbres triés

Exploitation

Transports

Usines de transformation

Empotage

- Certificats d'emportage
- Provinces
- Aires protégées

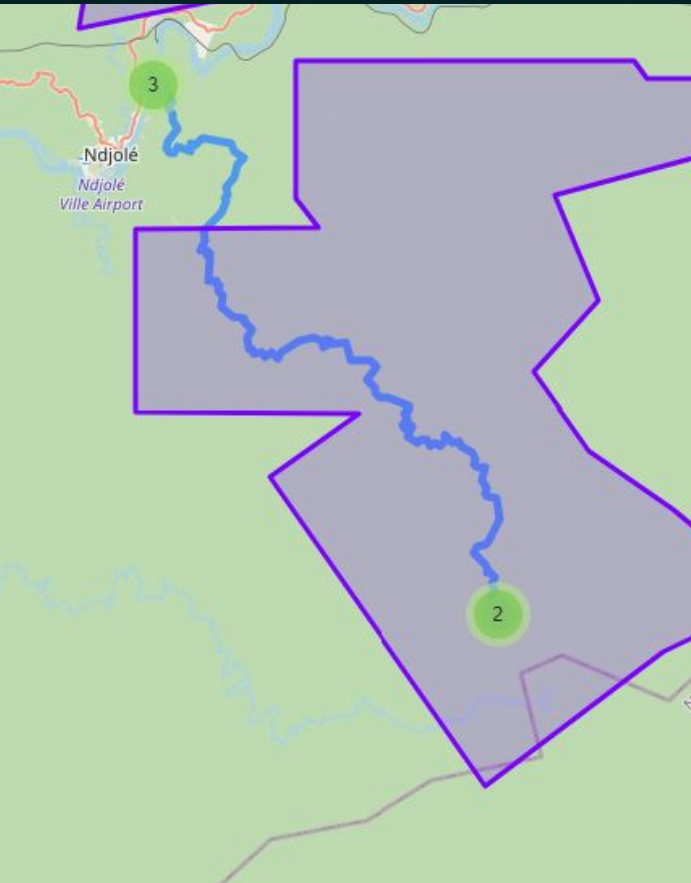
30/06/2022 - 28/09/2022

AAC: AAC 2021  
Essence: Okoumé(91/Aucoumea klaineana Pierre)  
Diamètre à hauteur de poitrine: 75  
Qualité: 3  
Arbres inventoriés: true  
Arbres triés: false

200 m  
500 ft

# Transport Permits

## Web Application and Geoportal



Information principale

\*permit\_no\_geo\* 22\_13\_ZAP\_27      Observé le 2022-07-13 10:08:22

\*PermitType\* PI

Information

Société de transport: Société de transport AHN

Expéditeur: Chauffeur

Client destinataire: Moyen de transport Truck

Plaque d'immatriculation JM-166-AA

Images du transport

EXPORTER PDF

VOIR LE TRANSPORT SUR LA CARTE

### Bordereau de roulage 22\_13\_ZAP\_27

<b>ID:</b>	4054	<b>Numéro bordereau:</b>	22_13_ZAP_27
<b>Concession:</b>	Zap Kango Bloc 3	<b>UFA:</b>	Zap Kango UFA Bloc 3
<b>AAC:</b>	Zap Kango AAC Bloc 3	<b>UFG:</b>	Zap Kango UFG Bloc 3
<b>Client destinataire:</b>	AHN	<b>Propriétaire du bois:</b>	NZILA-FORÊT-BOIS
<b>Société de transport:</b>	AHN	<b>Statut:</b>	*in_progress*
<b>Nom de conducteur:</b>	Theo	<b>Plaque d'imm:</b>	JM-166-AA
<b>*ProvinceName*:</b>	Estuaire (Libreville)	<b>Unité de transformation:</b>	AHN
<b>Moyen de transport:</b>	Camion	<b>Nombre total de pièces:</b>	9
<b>Lat:</b>	0.04136	<b>Longitude:</b>	10.26239
<b>Date:</b>	2022-07-13 09:50:00	<b>email:</b>	
<b>Source du bois:</b>	-	<b>Observations:</b>	RAS

Numéro bordereau	Numéro de la grume	Le nom complet de l'essence	Diamètre petit bout (cm)	Diamètre gros bout (cm)	Diamètre moyen (cm)	Longeur (m)	Volume (m³)
22_13_ZAP_27	3003/2	Padouk(102/Pterocarpus soyauxii Taub.)	45	50	47.5	12.5	2.217
22_13_ZAP_27	3004/1	Padouk(102/Pterocarpus soyauxii Taub.)	52	56	54	10.9	2.497
22_13_ZAP_27	3004/2	Padouk(102/Pterocarpus soyauxii Taub.)	42	52	47	11.3	1.968
22_13_ZAP_27	218/1	Okoumé(91/Aucoumea klaineana Pierre)	74	80	77	12.3	5.731
22_13_ZAP_27	3002/1	Padouk(102/Pterocarpus soyauxii Taub.)	69	70	69.5	13	4.932
22_13_ZAP_27	3003/1	Padouk(102/Pterocarpus soyauxii Taub.)	50	64	57	13	3.334
22_13_ZAP_27	1040/2	Padouk(102/Pterocarpus soyauxii Taub.)	46	50	48	11.9	2.155
22_13_ZAP_27	1040/1	Padouk(102/Pterocarpus soyauxii Taub.)	50	60	55	11.6	2.764

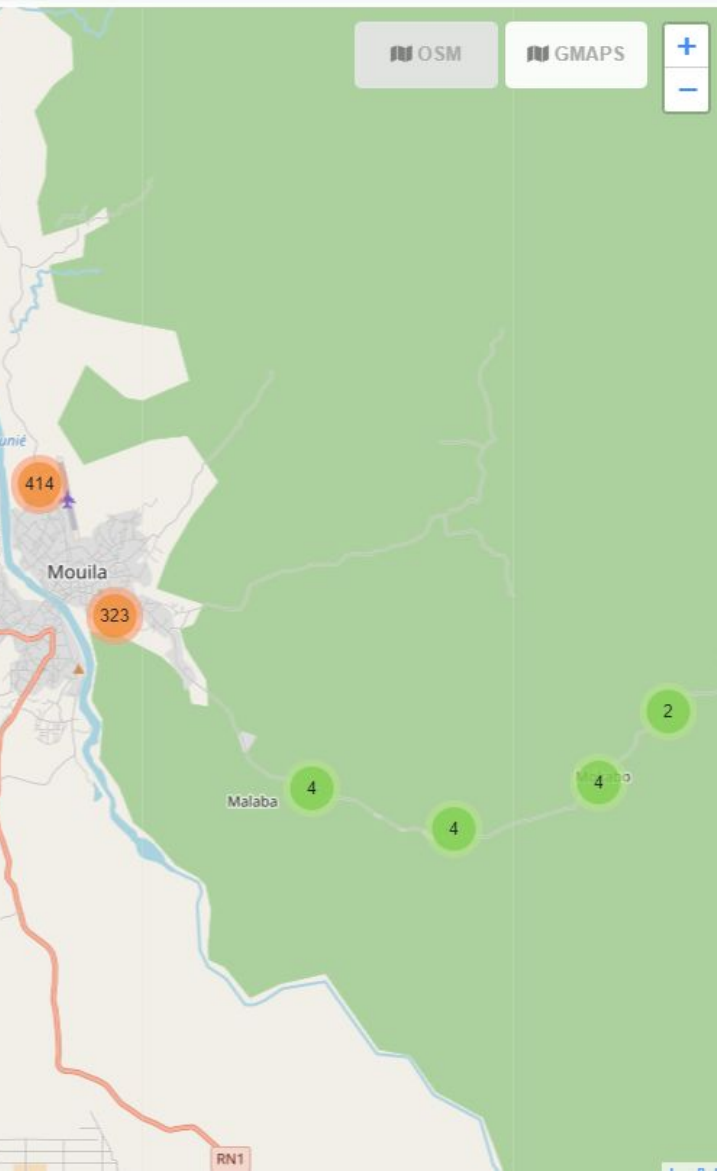
  

Numéro bordereau	Numéro de la grume	Le nom complet de l'essence	Diamètre petit bout (cm)	Diamètre gros bout (cm)	Diamètre moyen (cm)	Longeur (m)	Volume (m³)
22_13_ZAP_27	1041/1	Padouk(102/Pterocarpus soyauxii Taub.)	40	40	40	11.6	1.458



# Finished Projects Registration

## Processing



colis

approuver  APPLIQUER EN MASSE

date de début - date de fin tout rechercher

éléments visualisés 20 par page:

<input type="checkbox"/>	numéro	essence	numéro colis	Nombre total de pièces	volume	type de produit	Type de bois	unité de transformation	société propriétaire du bois	email	approuvé	date	actions
<input type="checkbox"/>		Okan(OKAN/Cylicodiscus g..	GQO 09	28	2.835	Débites ou sciage	green wood	Scierie mokabo	GWI MOKABO		true		
<input type="checkbox"/>		Okan(OKAN/Cylicodiscus g..	CQO 14	28	2.268	Débites ou sciage	green wood	Gwi MOKABO	Gwi MOKABO		true		
<input type="checkbox"/>		Okan(90/Cylicodiscus gab..	GQK 11	110	0.325	Débites ou sciage	green wood	Usine GWI Mokabo	GWI MOKABO		true		
<input type="checkbox"/>		Okan(90/Cylicodiscus g..	GQK 10	104	0.615	Débites ou sciage	green wood	Usine GWI Mokabo	GWI MOKABO		true		

# Export

options

- Couches
- Concessions
- Exploitation
- Transports
- Usines de transformation
- Empotage
  - Certificats d'empotage
  - Provinces
  - Aires protégées
- 30/06/2022 - 28/09/2022
- Images satellitaires
- Recherches

Société:  
Essence: Andoung Le Testu  
Numéro colis: ZBH835,ZBH950,ZBG 746,CG354,CG745,AJ 547,AJ353,CG 583,CG750,AI450  
Type de produit: pt\_sawnwood  
Certification: Non Certified  
Valeur volume: 220.000,00  
Valeur totale: 3.080.000,00  
\*total\_price\_geo\*: 0,00  
Volume exporté: 14,000  
Niveau de transformation: 2nd transformation  
Pourcentage MINEF: 92.400.00  
Numéro de contrat: 186299 et 186300  
\*container\_no\_geo\*: **MSMU1043929**  
\*seal\_no\_geo\*: 1124122160  
Mode d'embarquement: Conteneur  
Destination: Chine  
Postes de contrôle fluviaux/maritimes: Owendo  
Observé le: 2022-07-07 16:11:58

track-trace Container tracking for: **MSMU1043929** origin: Mediterranean Shipping

Mediterranean Shipping Alternative tracking options: [RSS](#) [msc.com](#)

Select company

**Transshipment Discharged in LOME**  
Location: LOME, TG  
Description: Transshipment Discharged  
Date: August 18, 2022  
Vessel: MSC PANAYA  
Voyage: WT230R

**Loaded in LIBREVILLE**  
Location: LIBREVILLE, GA  
Description: Loaded  
Date: August 5, 2022  
Vessel: MSC PANAYA  
Voyage: WT230R

**Gate In Full in LIBREVILLE**  
Location: LIBREVILLE, GA  
Description: Gate In Full  
Date: July 29, 2022

**Empty to Shipper in LIBREVILLE**  
Location: LIBREVILLE, GA  
Description: Empty to Shipper  
Date: July 29, 2022

**the container number connects to downstream trade data**



# Reports and Statistics

## Web Application and Geoportail

### Statistiques

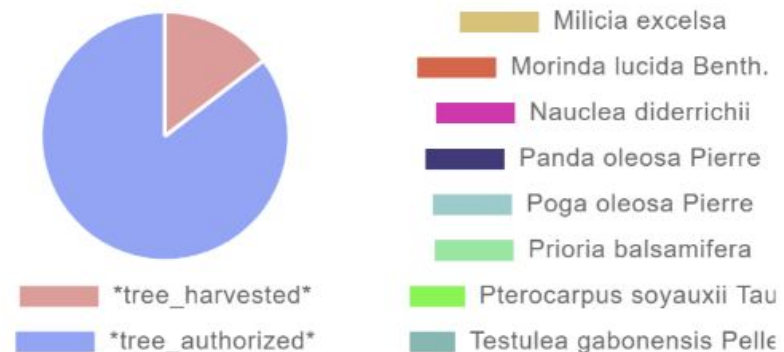
type de forêt ▼

\*concession\_breakdown\* ▼

Sélectionnez essence ▼

SOUMETTRE

nom de l'AAC	arbres exploités	arbres autorisés	volume exploité	grumes confisquées	superficie
AAC2017	5.00	34.00	14953.42	34.00	511.32
AAC2018	1.00	40.00	70.54	0.00	468.86
AAC2021	55.00	177.00	170664.65	0.00	464.24
AAC2019	7.00	151.00	2797.12	0.00	474.23
AAC2020	8.00	42.00	688.01	714.00	466.26
<b>Total</b>	<b>76.00</b>	<b>444.00</b>	<b>189173.75</b>	<b>748.00</b>	<b>2384.91</b>



# Extra Layers

## Web Application and Geoportal

Usines de transformation

- Débités ou sciages
- Plaquages
- Contreplaqué
- Autres

Déclarations d'exportation

- Provinces
- Aires protégées

Images satellitaires

- Alertes GLAD
- Alertes RADD

From  To

- Planet Labs

\*period\_geo\*

\*color\_geo\*

OSM

GMAPS

10 km

5 mi

01/09/2021 - 30/11/2021

PAIX ET FORÊTS

AEAFFB

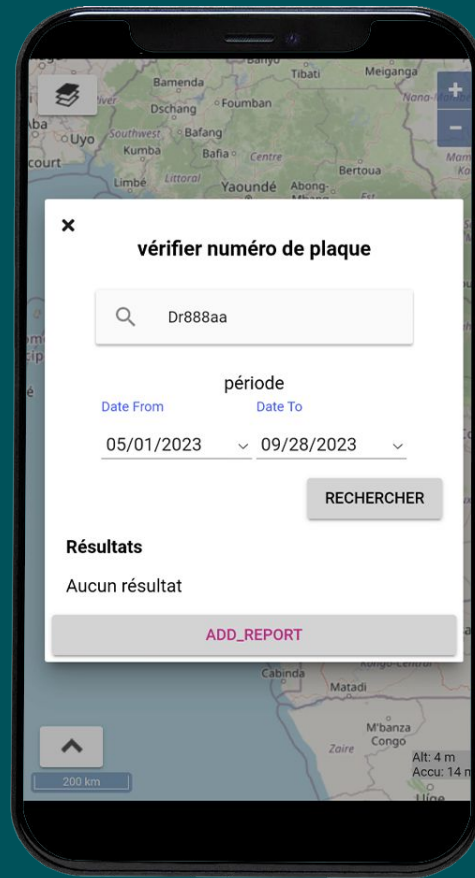
REPUBLIQUE CAMBODGE

INDUSTRIE, TRAVAIL & JUSTICE

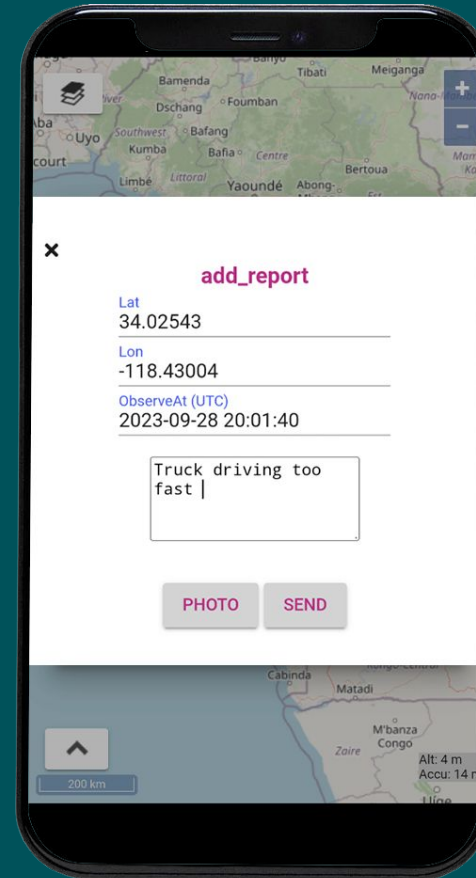
eia



# Transparency + Civil Society Outreach



The Citizen App allows the Gabonese public to check license plates of log trucks in real time to learn if a transport is legally registered in the SNTBG.



The Citizen App allows the public to report possible legal violations to the authorities.



EIA is engaging with Gabonese civil society to present the SNTBG and discuss the level of transparency needed, and how the public can best engage with the SNTBG.

# Romania

SUMAL: national timber traceability system

Forest Inspector: public transparency window into SUMAL - geoportal and mobile app

Informații Aviz de Transport

Tip Transport: Locul Recoltării      Proveniența: 2000158500181 - 1606 Obarsia Priboiesei 1729027

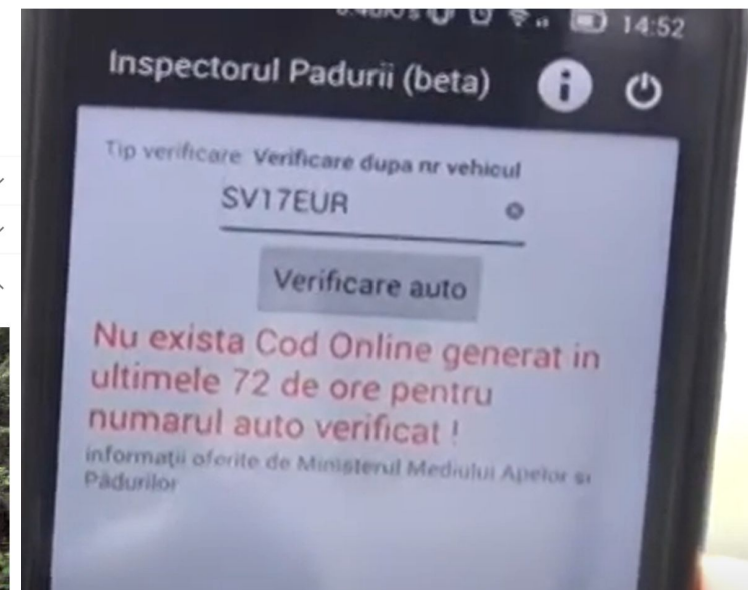

Cod Aviz: AP21005649001202347806141506      Data Emiterii: 14/06/2021 05:06:24

Nr. Identificare Mijloc Transport: VL10VIR      Valabilitate: 14/06/2021 05:06:24 - 14/06/2021 11:06:24

Informații Entități Implicate

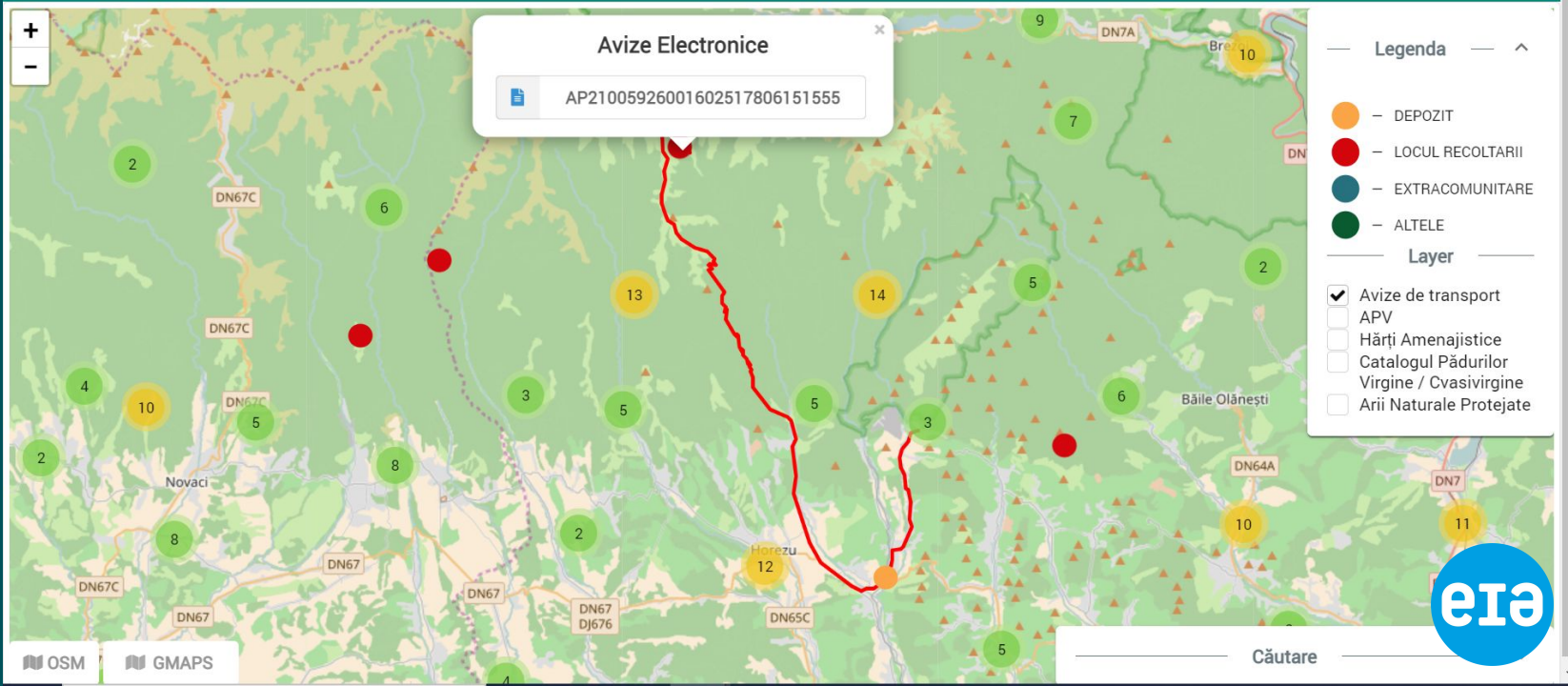
Volum

Poze Transport



inspectorulpadurii.ro/#/

## SUMAL 2.0 - Inspectorul Pădurii



Avize Electronice

AP21005926001602517806151555

Legenda


- DEPOZIT
- LOCUL RECOLTARII
- EXTRACOMUNITARE
- ALTELE

Layer

- Avize de transport
- APV
- Hărți Amenajistice
- Catalogul Pădurilor Virgine / Cvasivirgine
- Arii Naturale Protejate

OSM    GMAPS

Căutare

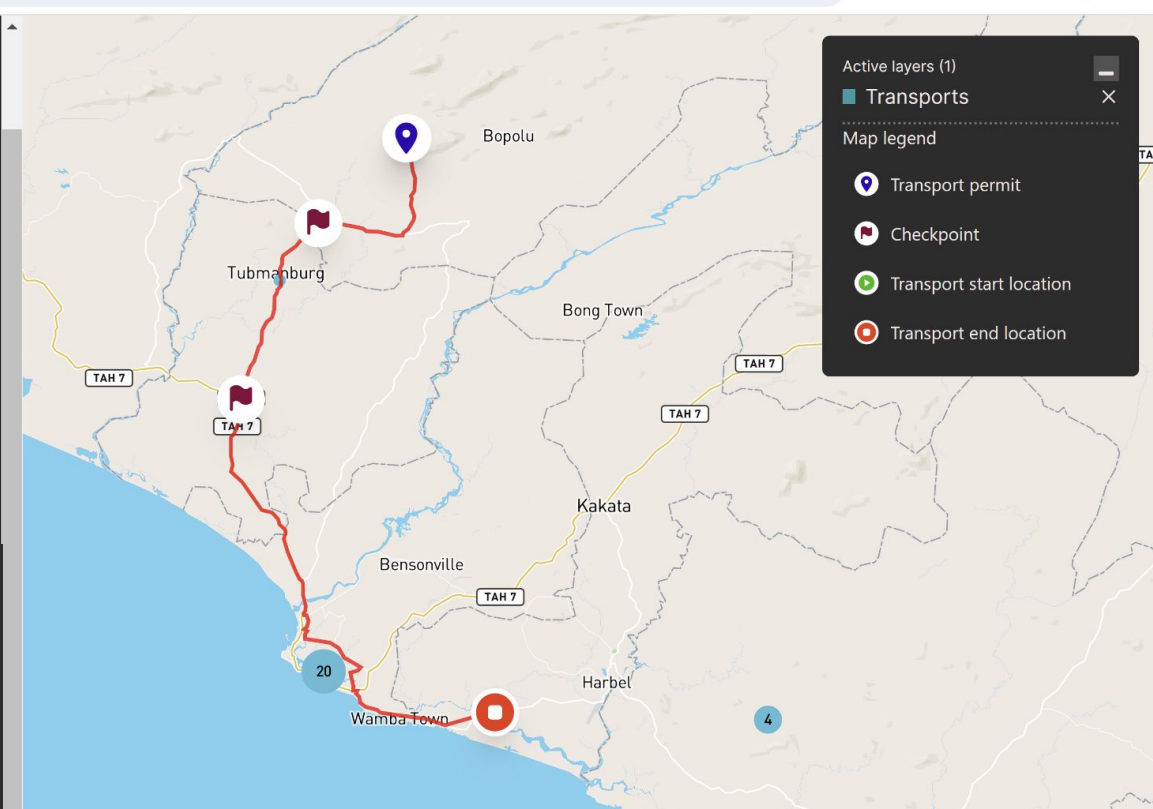
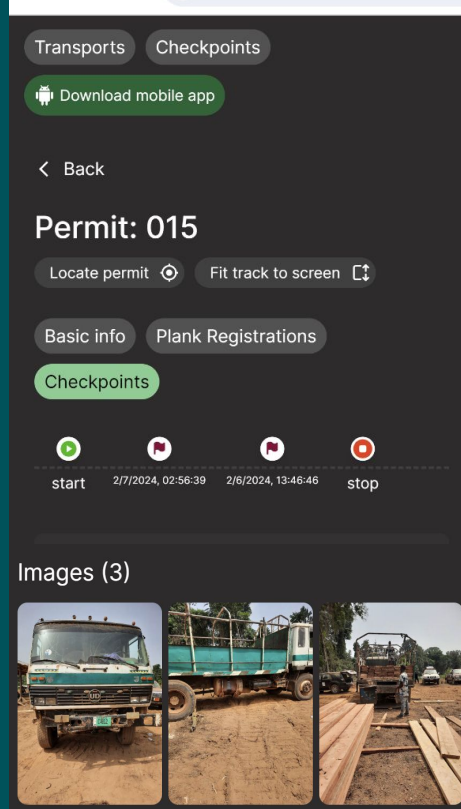


# Liberia

Pilot timber traceability system with the Liberian Chainsaw Millers Association (LICSATDUN) and Liberian civil society.

Mobile App: Transport permit registration and Checkpoint control;

Transparent Geoportal



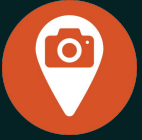
# What makes EIA's system unique?



Direct digital inputs



Inventory of each tree



Transport with GPS track + photos



Real-time access to data



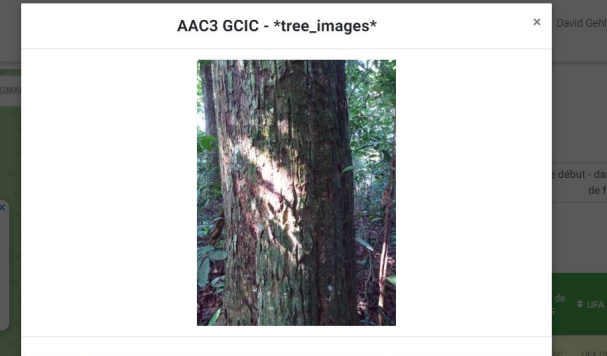
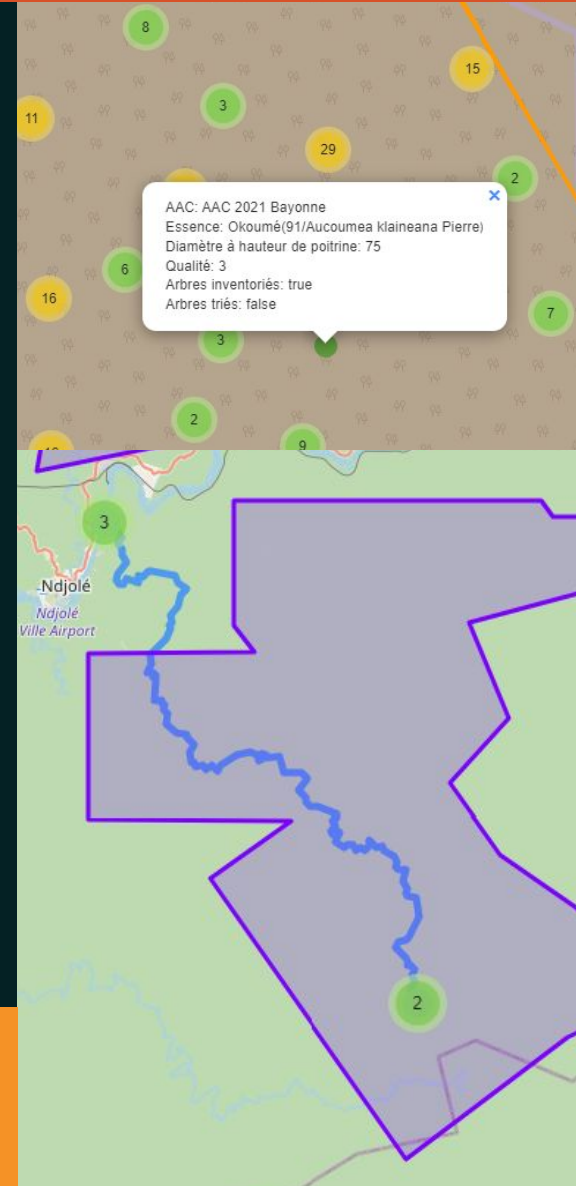
Functions Offline



Affordable to implement



Public Transparency



ID	Date	Essence	Qualité	Arbres inventoriés	Arbres triés
44536	2022-07-13	AAC3 GCIC	3	true	false

Information principale  
\*permit\_no\_geo\* 22\_13\_ZAP\_27  
\*PermitType\* PI  
Observé le 2022-07-13 10:08:22

Information  
Société de transport: Société de transport AHN  
Expéditeur: Chauffeur Theo  
Moyen de transport: Truck  
Client destinataire: Plaque d'immatriculation JM-166-AA



EXPORTER PDF

VOIR LE TRANSPORT SUR LA CARTE





# Thank You



**David Gehl**

**[davidgehl@eia-global.org](mailto:davidgehl@eia-global.org)**

**Environmental Investigation Agency**