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Pilot Forest Monitoring Platform - Moldova

Cédric Lardeux | ONF International

Regional Workshop on Wood Tracking Systems (WTS) and EU Deforestation Regulation (EUDR) Compliance:
Strengthening Forest Governance in Eastern Partnership countries

Yerevan, Armenia, 22-25 October 2025

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Demo



STOCK PLACE

View the stock place on the interactive map.

Forest products stock place

Welcome to the MoldSilva Forest Products Platform

This pilot project serves as a demonstration version of our web platform, designed to manage and monitor Moldova's forest resources using virtual data. Here you'll find:

- Real-time data on wood stock volumes across the country
- Information on wood products, including fuelwood, timber, transformed timber products and Non-Timber Forest Products
- A directory of forest enterprises subordinated to MoldSilva involved in the wood trade
- Interactive maps showing plot locations and stock distributions
- Regulations related to harvesting and trade in forest products

Whether you're a buyer, or simply an interested stakeholder, this platform provides a valuable insight into the harvesting and commercialisation of Moldova's forest resources. It provides up-to-date information on sectorial developments and Moldova's push towards ensuring sustainable forest management and legal trade of its forest resources.

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Structure of the presentation

1. Introduction and context
2. Strategic value proposition
3. Platform demonstration
4. Implementation and next steps

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Context: Moldova's specific project objectives

- **Two Complementary Deliverables**
 - Sustainable Forest Management and legal timber trade
 - Forest Products Web Platform ← Today's focus
- **Our approach**
 - Review the existing Moldovan forestry harvesting system
 - Identifying of critical gaps in stock monitoring and data flow
 - Developing of a Pilot Platform demonstrating immediate benefits:
 - Real-time Stock Place functionality
 - Foundation for future integrated traceability system
- **Strategic Approach**
 - Build incrementally toward full traceability within a realistic timeframe
 - Starting with what works today, evolving toward comprehensive WTS tomorrow.
 - Benefits of such an approach ?

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Context: Moldova's Forestry Sector

- State-managed forests (Moldsilva) represent 85,5 % of forest area
- Account for 92% of all trade in forest products
- Average annual roundwood harvest: ~617,000 m³
- 90-92% sold as wood fuel, only 8-10% as industrial roundwood
- Limited digital infrastructure across Moldsilva subordinated forest enterprises
-  **Current situation: decentralized Excel-based stock management**

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Key Findings from Field Mission (Sept 2024) Stakeholder Consultation

- **Current system:**
Decentralized Excel sheets
- **Limited GIS adoption**
(only a few of the 24 Moldsilva subordinated forest enterprises use GIS)
- **Strong interest from stakeholders**
(Ministry, Moldsilva, 4 SFEs visited)
- **Critical need:**
Centralized stock monitoring
- **Opportunity:**
Connect with supplier GIS systems



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Why a Web-Based Platform? Strategic Benefits

-  Traceability from harvest location to point of sale
-  Real-Time Stock Management: Immediate visibility across all enterprises
-  Optimized Resource Allocation: Better planning based on geography and demand
-  Compliance Support: Alignment with Forest Management Plans
-  Market Transparency: Improved procurement processes
-  International Trade: Foundation for EUDR compliance

**Explanation of the platform, it's a pilot !
= Brainstorm and give ideas**

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Benefit 1 - Mastering the Chain (From felling to point of sale)

Real-time flow monitoring

- **Track products** from harvest location to point of sale
- Instant **stock updates** after each transaction
- **Reduced errors** and improved accuracy



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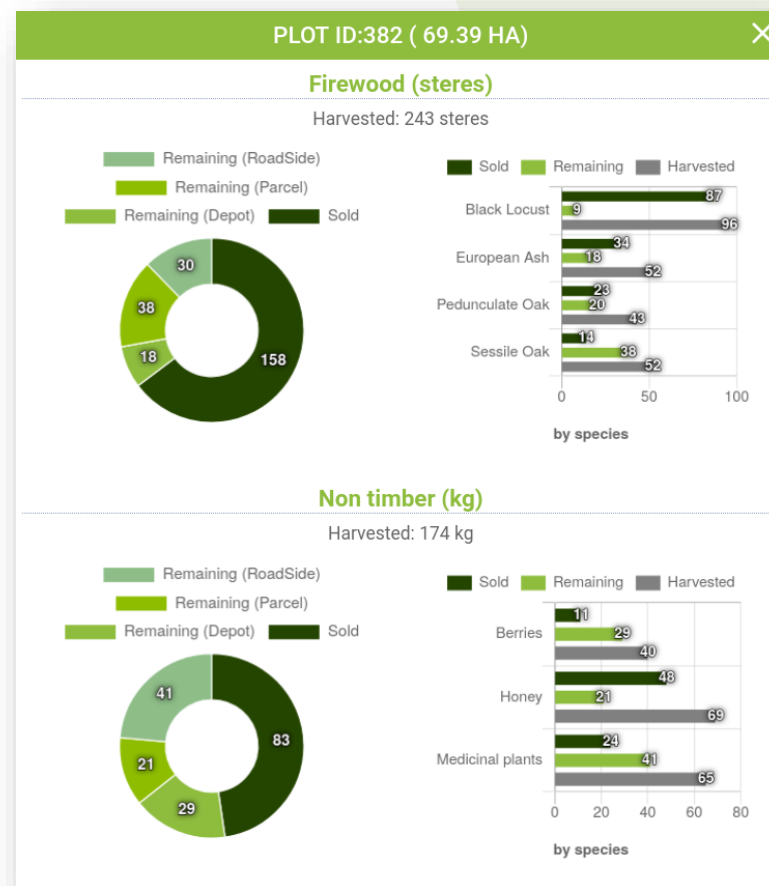
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Benefit 2 - Compliance & Stock Management

Key Capabilities

- Real-time stock tracking by species, volume, location
- Verification against Forest Management Plan quotas
- Automated compliance monitoring
- Risk reduction for over-exploitation



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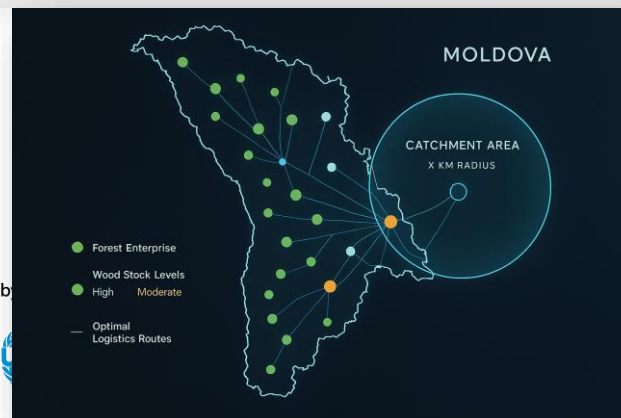
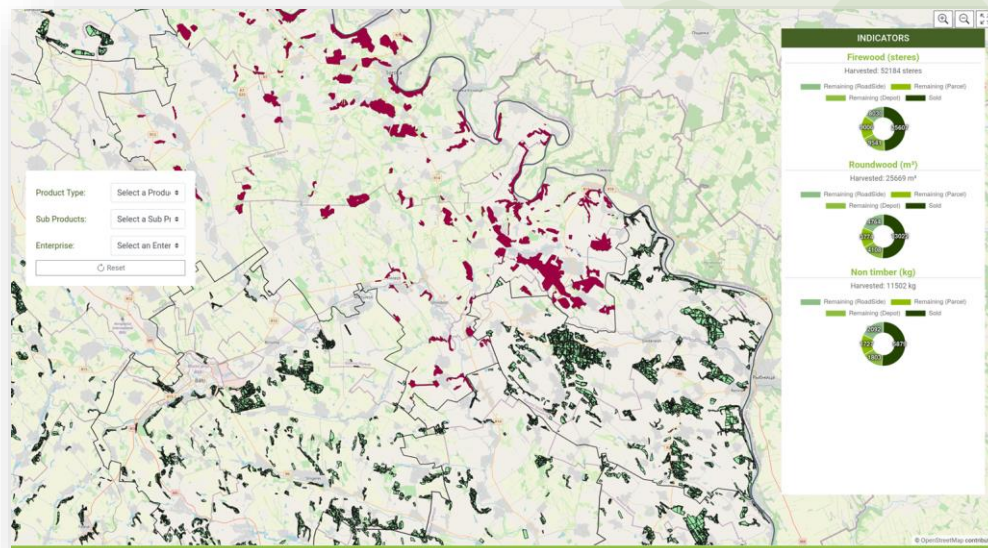
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Benefit 3 - Logistics Optimization (Long-term Vision)

National-level coordination

- Connect all 24 Moldsilva SFE
- Optimize stocks based on demand and geography
- Future "wood catchment" tool (find available timber within X km radius)
- Intelligent resource allocation



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Benefit 4 - Wood Valorization Through Data

Enhanced product value

- Integration with field GIS data (quality, size assessments)
- Better understanding of resource characteristics
- Improved market positioning
- Data-driven pricing strategies



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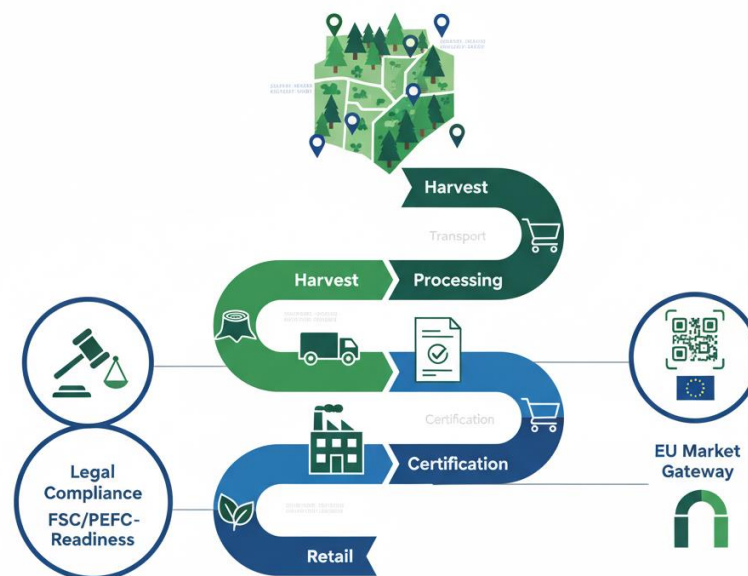
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Future Benefit 5 - The Passport to Europe (Long-term Vision)

EUDR Compliance Foundation, if adding tracking system

- Complete traceability from harvest to sale
- Geolocation of harvest areas
- Documentation of legal compliance
- Readiness for certification (FSC, PEFC)
- Market access to EU (essential requirement)

EUDR Compliance – complete traceability from harvest to sale



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Lets go to the Pilot platform =

- Demonstrator
- Virtual data

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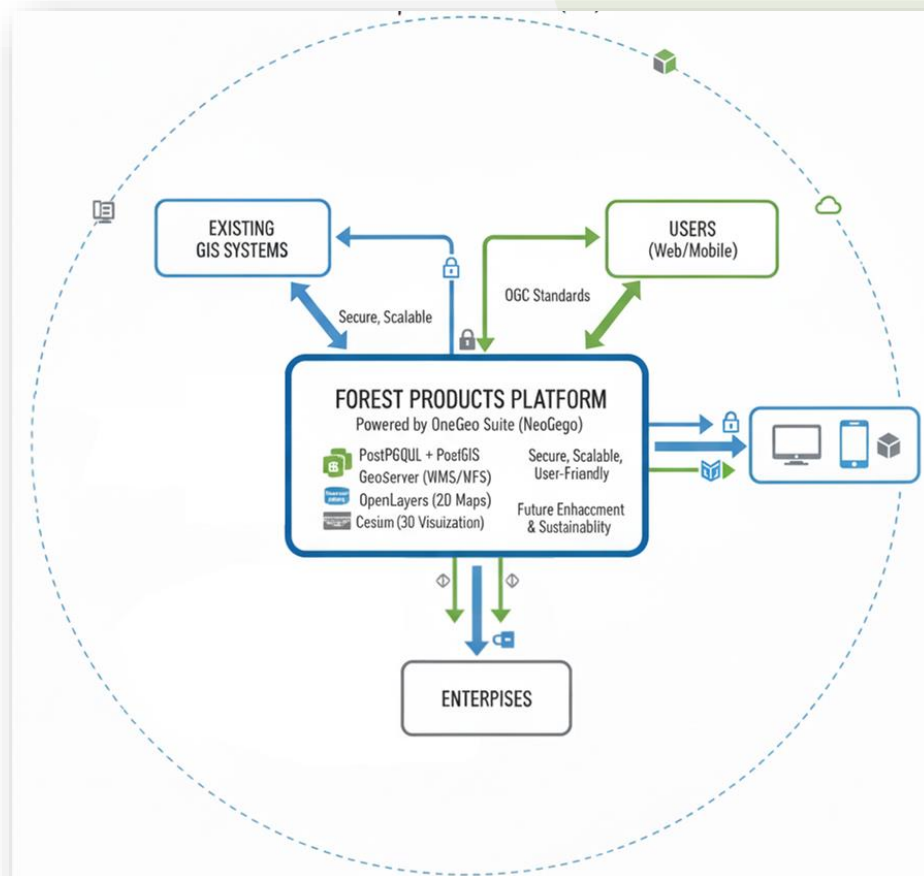


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Platform Architecture & Technology

- Built on OneGeo Suite (open-source geospatial framework)
- PostgreSQL/PostGIS database for geospatial data
- GeoServer for map services (WMS/WFS)
- Interactive mapping with OpenLayers & Cesium 3D
- Role-based access control (RBAC)
- GDPR compliant with AES-256 encryption
- Cloud-based infrastructure for scalability



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Platform Interface: Home Page

- **Central hub for all platform features**

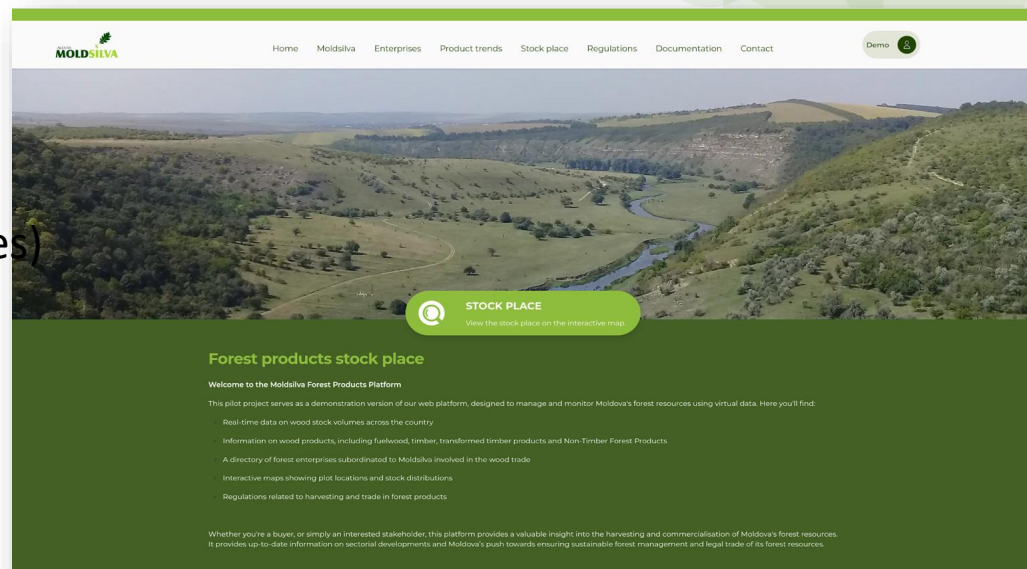
- **Quick access to:**

- Real-time stock data
- Product information (timber, fuelwood, NTFPs)
- Enterprise directory (24 entities)
- Interactive maps
- Regulatory framework
- Documentation center

- **Link to Moldsilva official website**

- **Demo URL**

- <https://moldsilva.poc.onegeosuite.fr/portail/>
- Login: dmoldsilva Pwd: Demo4Mold



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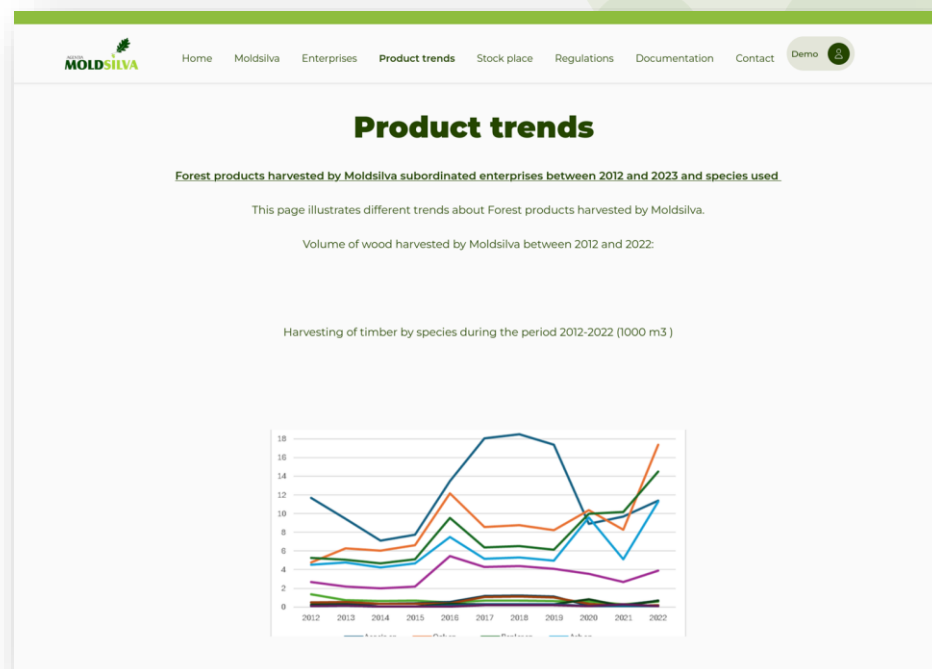


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Core Functionality #1: Strategic Dashboard

- Product Trends Dashboard (2012-2023 historical data)
- Annual harvest volumes by species
- Wood fuel vs. timber production patterns
- NTFP collection statistics
- Enterprise performance comparison
- **Future**
 - Forecasting market price tools based on FMPs and trends
 - Customizable reports for decision-makers



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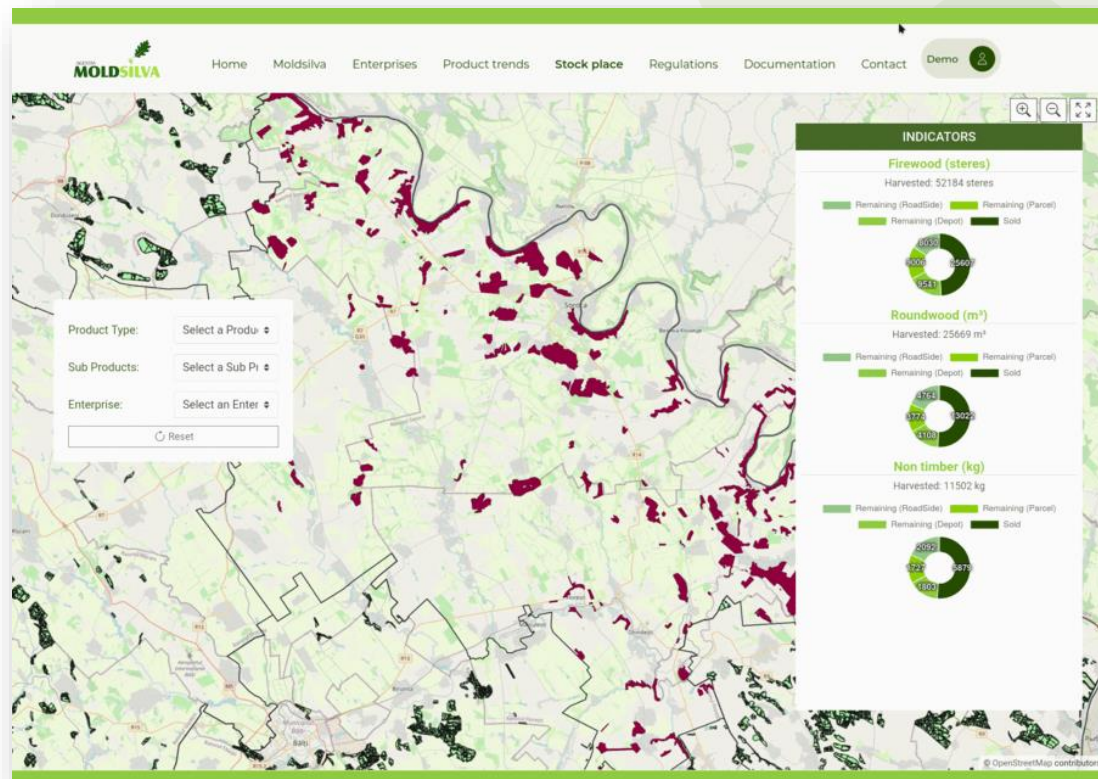


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Core Functionality #2: Interactive Stock Map

- Interactive **geospatial map** of Moldova
 - Visual representation of stock locations
 - **Advanced filtering system**
 - Click on plot → **detailed product information**
 - **Real-time** inventory tracking
 - Integration with **enterprise GIS systems**
- ❓ **Transforms stock management from Excel to digital GIS**



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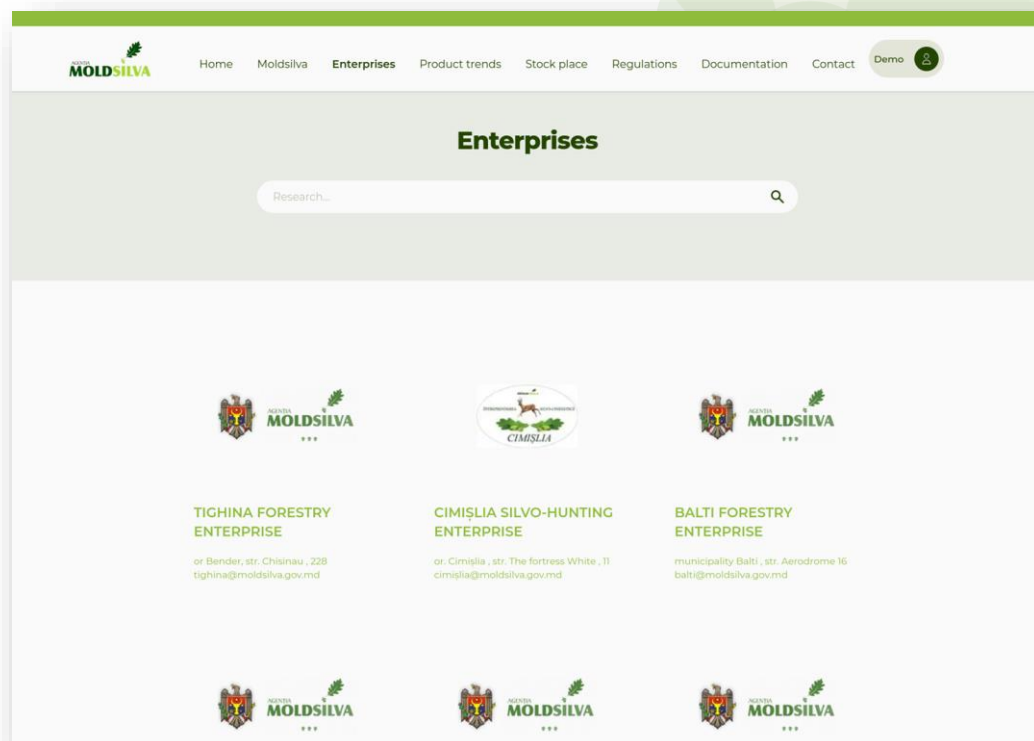


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Core Functionality #3: Enterprise Directory

- Comprehensive database of 24 Moldsilva entities
 - 16 Forest Management Enterprises
 - 4 Forest-Hunting Enterprises
 - 4 Nature Reserves
- Standardized profiles with contact information
- Current activities and operational capacity
- Search and filter functionality
- Enables cross-enterprise collaboration



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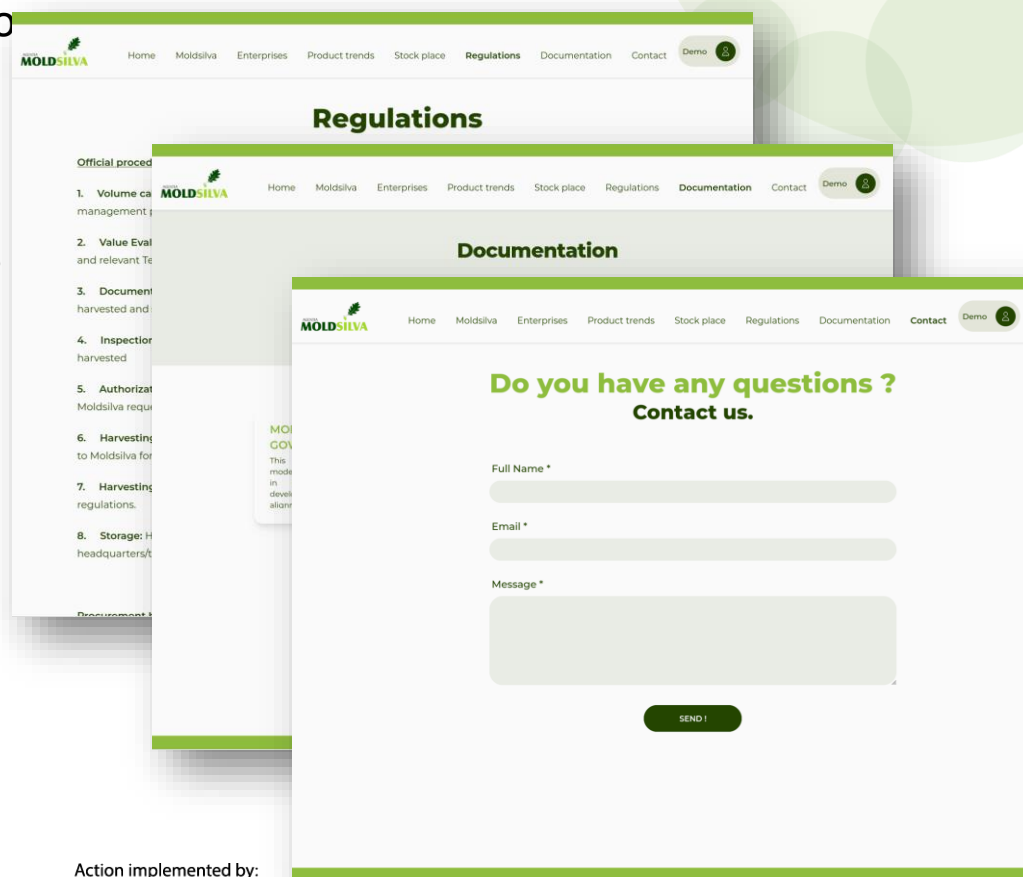


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Platform Interface: Supporting Features

-  Regulatory Framework Repository
→ Access to harvest and trade regulations
-  Documentation Center
→ Latest news and forestry trends
-  Contact System
→ Direct communication with platform administrators
-  Data Security & Compliance
→ GDPR compliant, encrypted storage

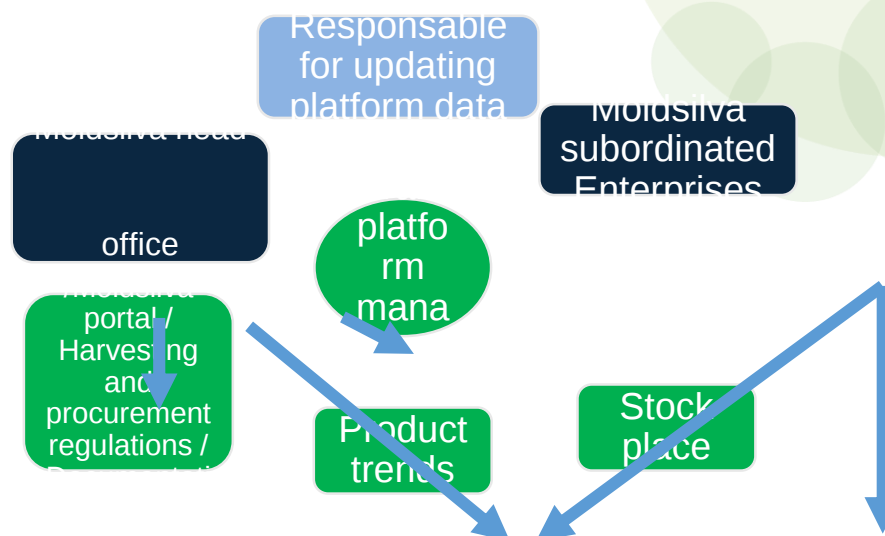


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Data Management & Responsibilities ideas

- **Moldsilva Central Office**
 - Overall platform coordination
 - Annual trends & statistics
 - Regulatory updates
- **Forest Enterprises**
 - Real-time stock updates
 - Transaction logging
 - Immediate updates after sales
-  Success depends on rigorous data entry by enterprises



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Implementation Requirements



HUMAN RESOURCES

- Project coordinator, IT specialists, GIS experts
- Trained users in each enterprise



FINANCIAL INVESTMENT

- Development, hosting, training, maintenance



DATA MANAGEMENT

- Clear protocols for entry, validation, updates
- Migration from Excel to centralized system



STAKEHOLDER ENGAGEMENT

- Ongoing consultation and training programs

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Implementation Requirements

-  **Human Resources**
 - Project coordinator, IT specialists, GIS experts
 - Trained users in each enterprise
-  **Financial Investment**
 - Development, hosting, training, maintenance
-  **Data Management**
 - Clear protocols for entry, validation, updates
 - Migration from Excel to centralized system
-  **Stakeholder Engagement**
 - Ongoing consultation and training programs

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Roadmap - From Pilot to Full Deployment

- **Phase 1**
Foundation & Validation
 - **Development with Real Data**
 - **Objectives:**
Refine data collection, Build platform V1 based on real enterprise data, Conduct intensive user testing and feedback.
- **Phase 2**
Full Deployment & Expansion
 - **Official Launch & Scalability**
 - **Objectives**
Train all personnel, Official operational launch, Potential extension to private/communal forests, Review and continuously improve the system.
- **Phase 3**
Market Integration (optional)
 - **Value-Added Systems**
 - **Objectives:** Deploy optional modules based on evaluated interest: Market Place & Advanced Traceability System.

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Conclusion & Call to Action

- **Key Takeaways**

- ✓ Pilot platform demonstrates feasibility and value
- ✓ Strong stakeholder interest confirmed
- ✓ Technical foundation established (OneGeo Suite)
- ✓ Clear pathway for expansion defined

- **Next Steps**

- Final Feedback
- Decide where to go

- **Call to Action**

Let's commit together to advance this initiative and modernize Moldova's forest sector.

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Thank you for your attention

