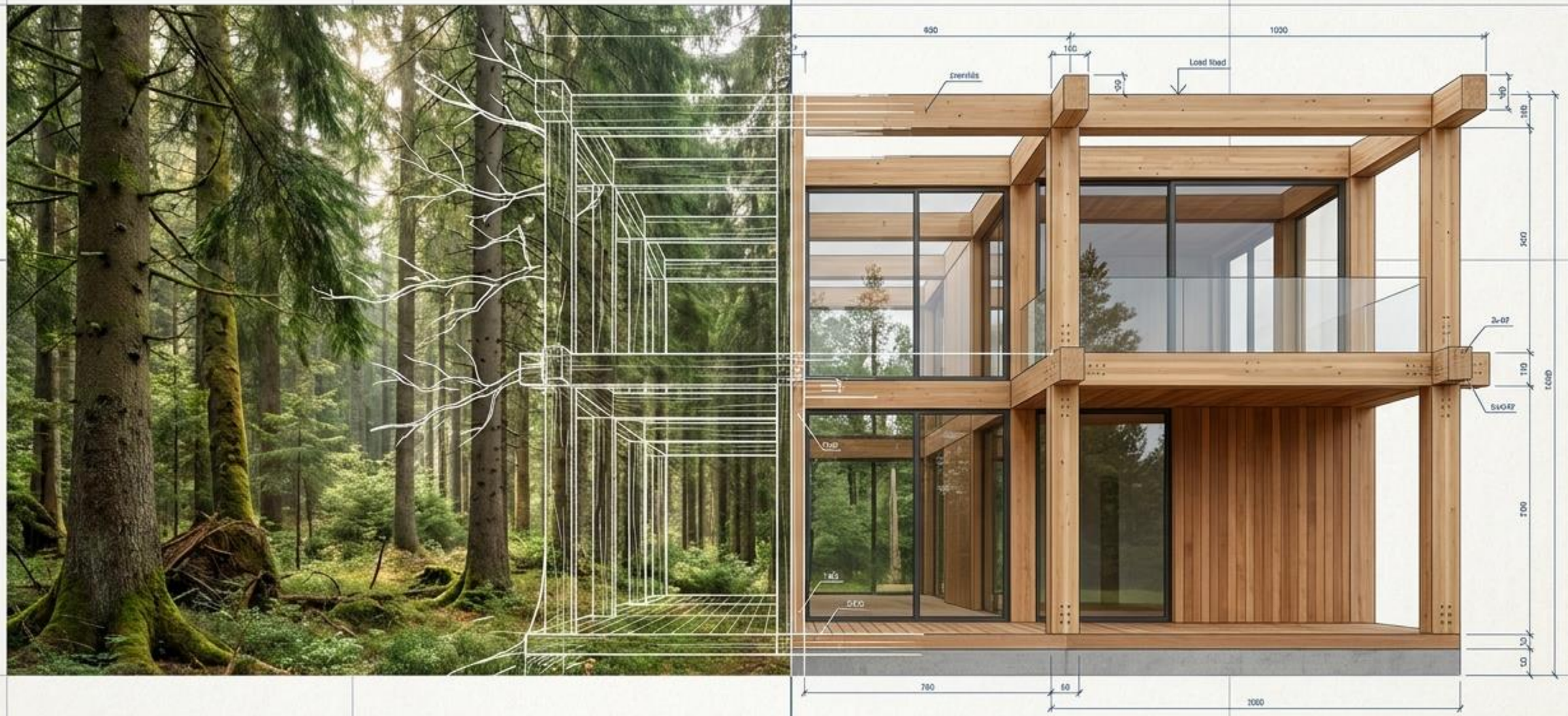
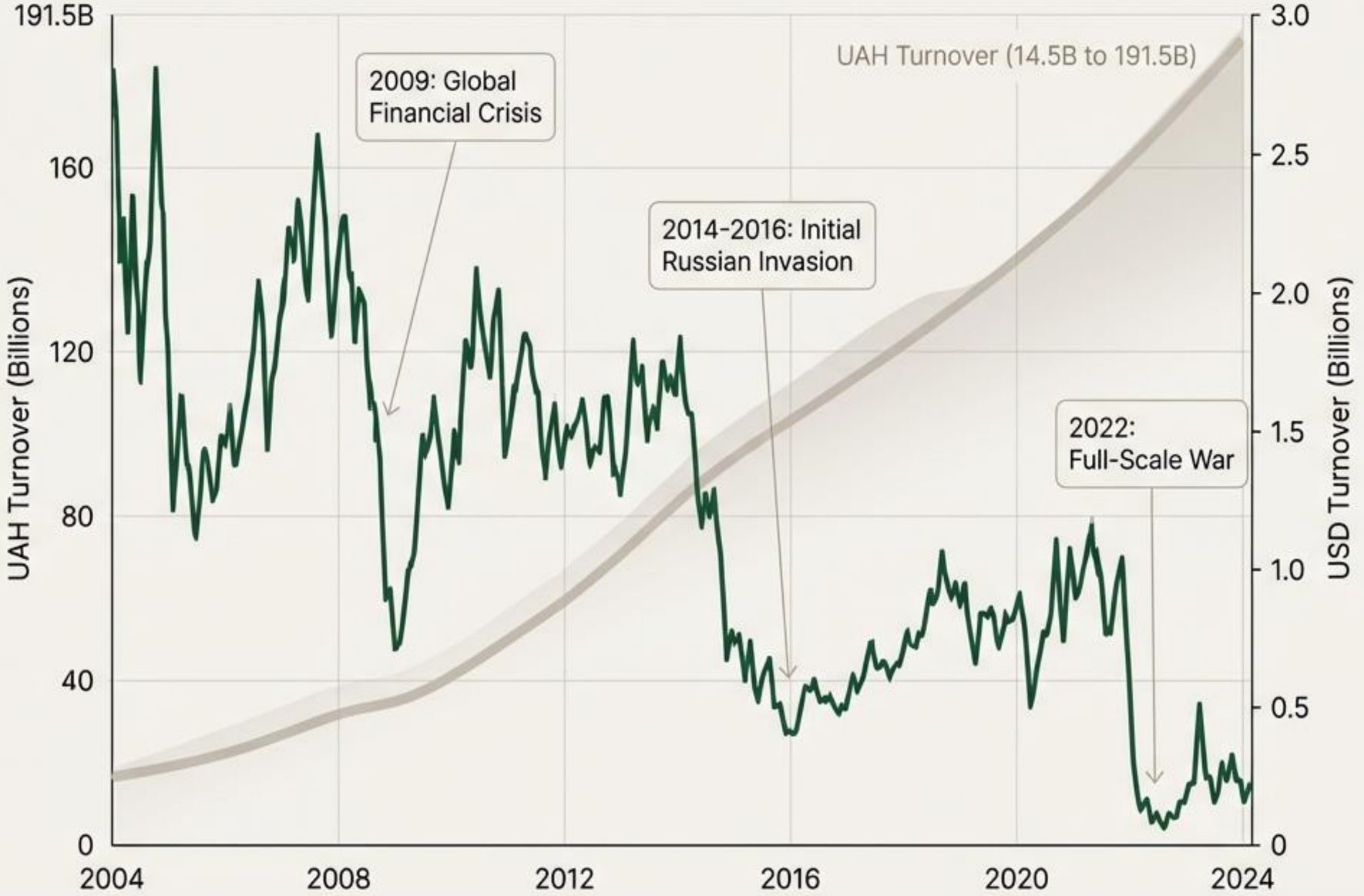
Millwood: A Path to Biodiversity Conservation

Strategic Roadmap & Environmental Footprint Diagnosis 2026–2036



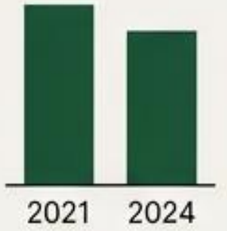
Currency Devaluation Masks a Sector in Crisis



Harvested Wood Drop

17.6M m³ (2021) →

14.9M m³ (2024)



Woodworking Turnover (2022)

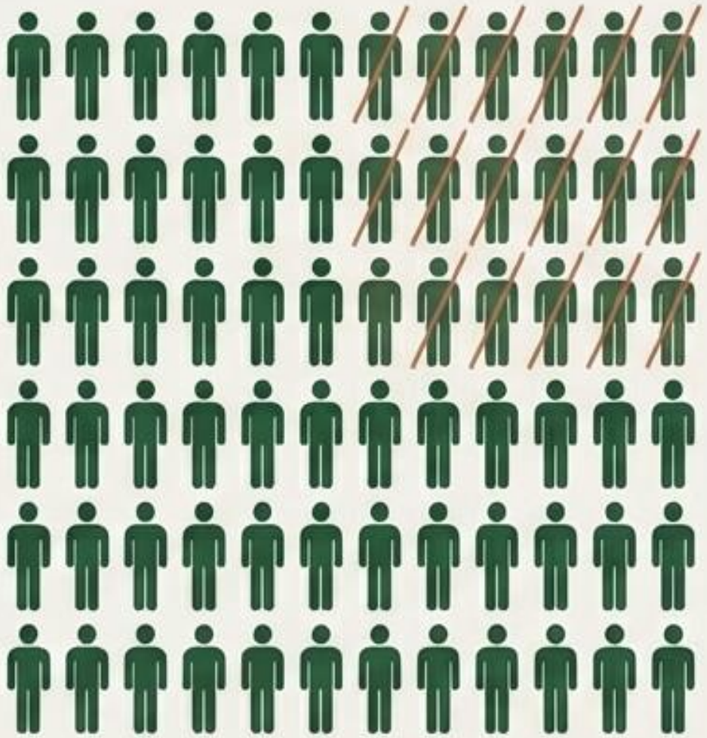
-17% ↓

Furniture Turnover (2022)

-34% ↓

The Human and Structural Toll of the Conflict

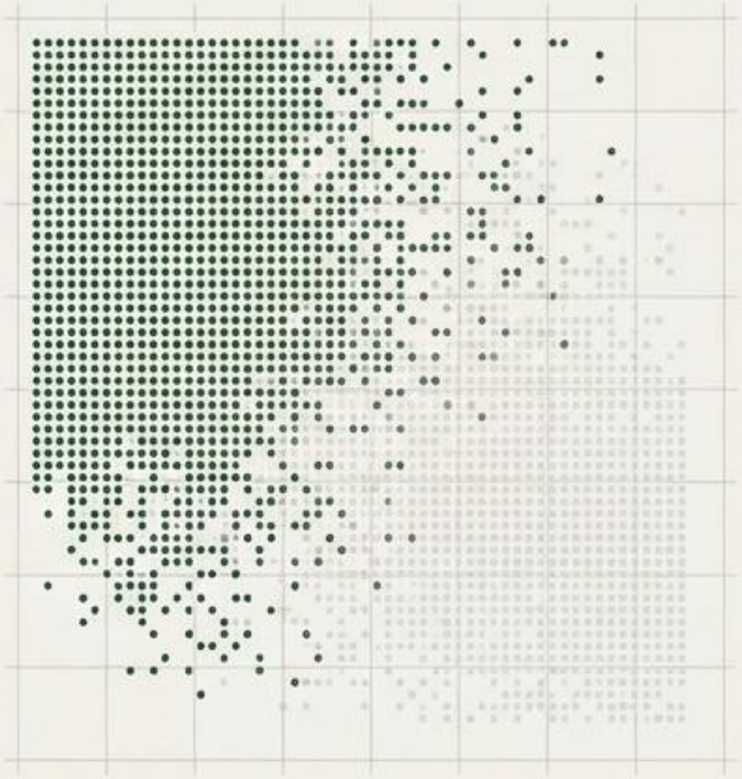
Labor Drain



50,100 total employees lost (2021-2023)

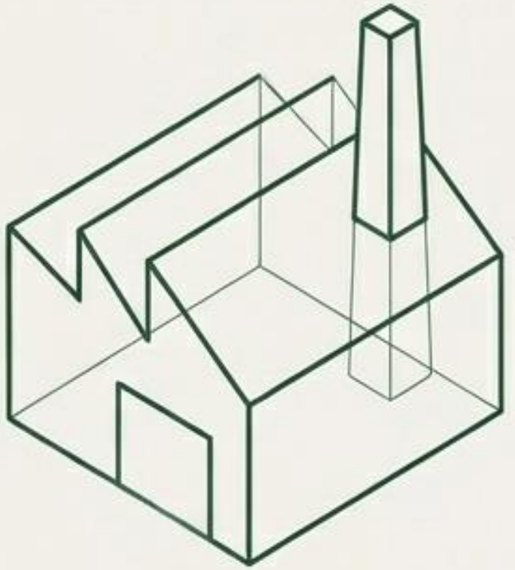
-14.4k from Furniture; -13.4k from Woodworking.

Enterprise Contraction



2,400 business entities shut down.

The “Average” Survivor



The 2023 Average Woodworking Enterprise

4
Employees

$128.3k
Annual Turnover

Engineering Sustainable Construction from Carpathian Resources

PANEL 1 - MAP



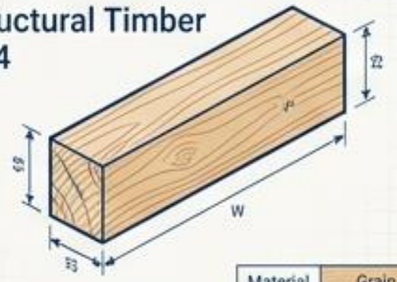
Founded in 2011

100% FSC-certified timber

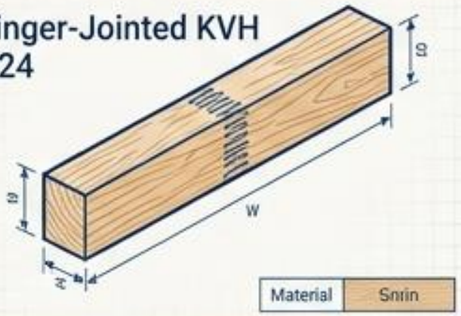
Primary resource: Carpathian spruce and fir

CORE OUTPUTS

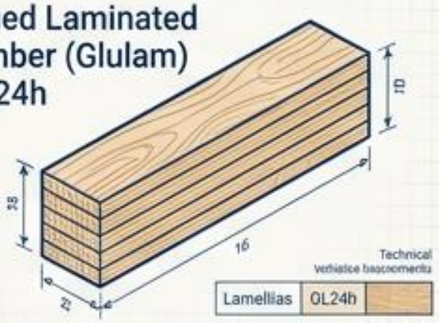
Structural Timber C24



Finger-Jointed KVH C24

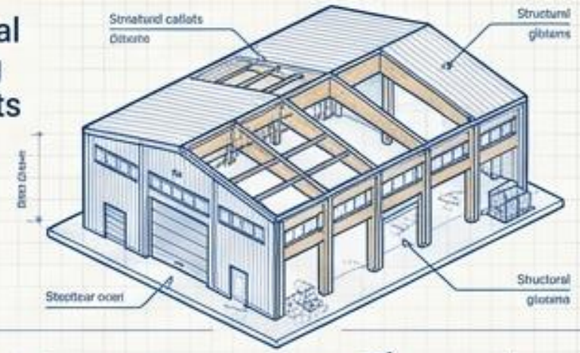


Glued Laminated Timber (Glulam) GL24h



BUILDING CONCEPTS

Industrial Building Concepts



Residential Building Concepts



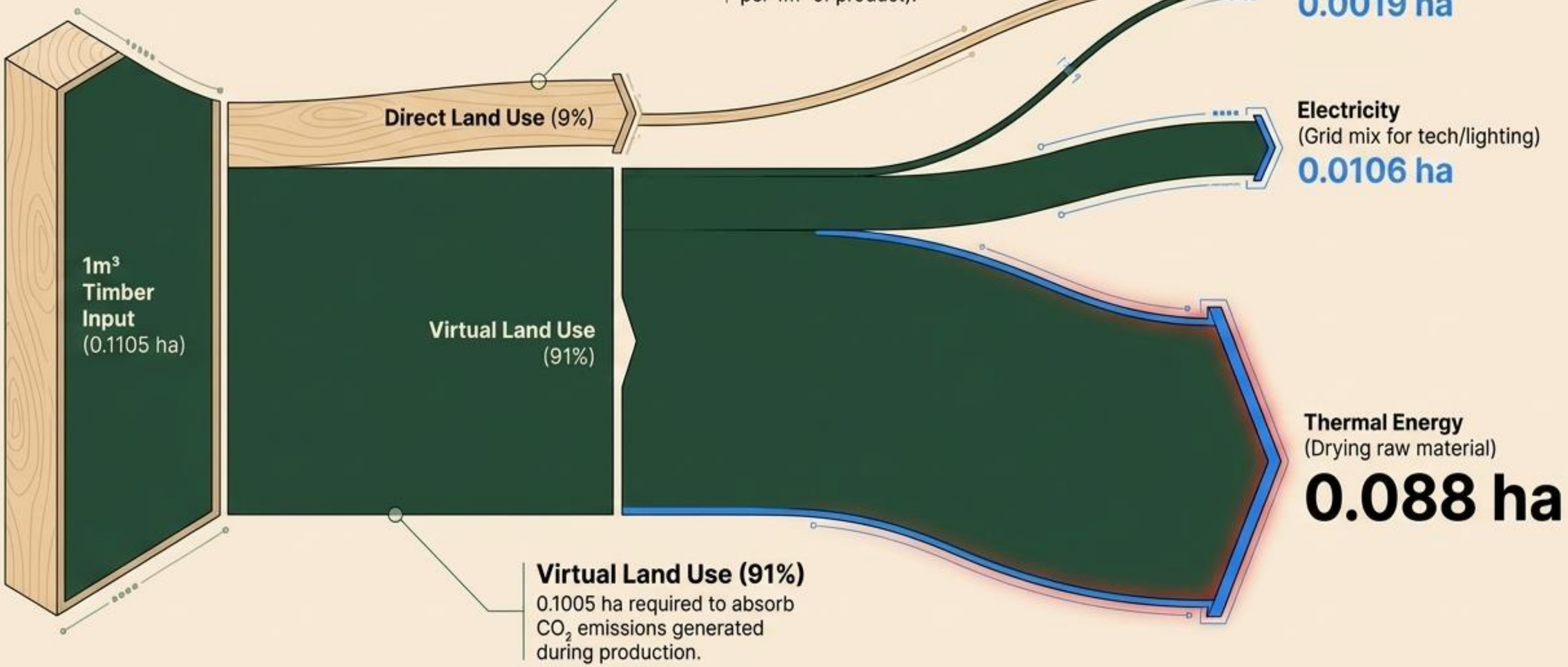
Social Building Concepts



Core Mission: Implementing reliable, ecological solutions for modern construction while driving circular bioeconomy approaches for post-war recovery

The True Cost of 1m³ of Structural Timber

Total Ecological Footprint: **0.1105** hectares (ha) required to offset the production of 1m³.

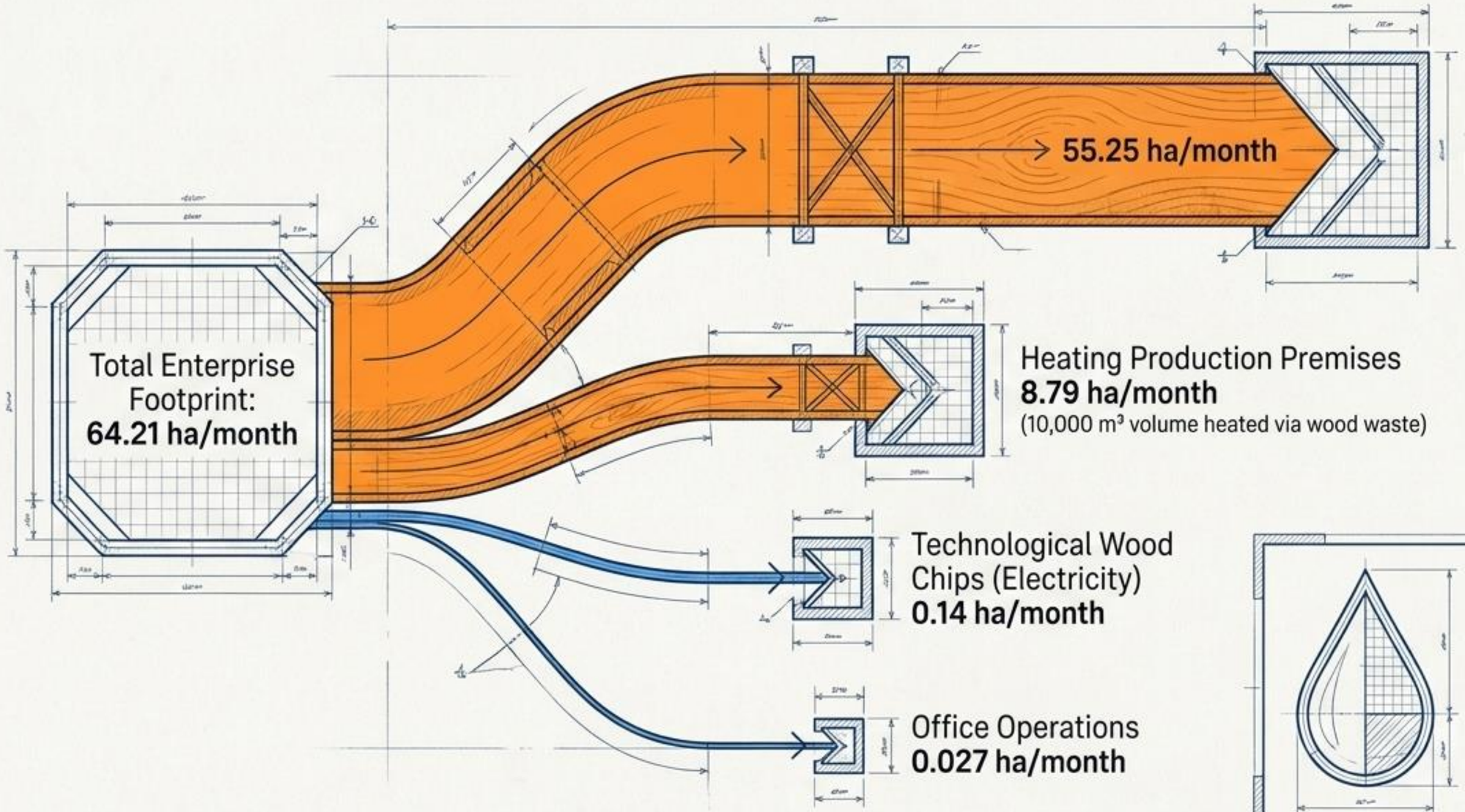


Direct Land Use (9%)
0.01 ha of physical forest required for raw material harvesting (assuming 2.45 m³ of roundwood per 1m³ of product).

Virtual Land Use (91%)
0.1005 ha required to absorb CO_2 emissions generated during production.

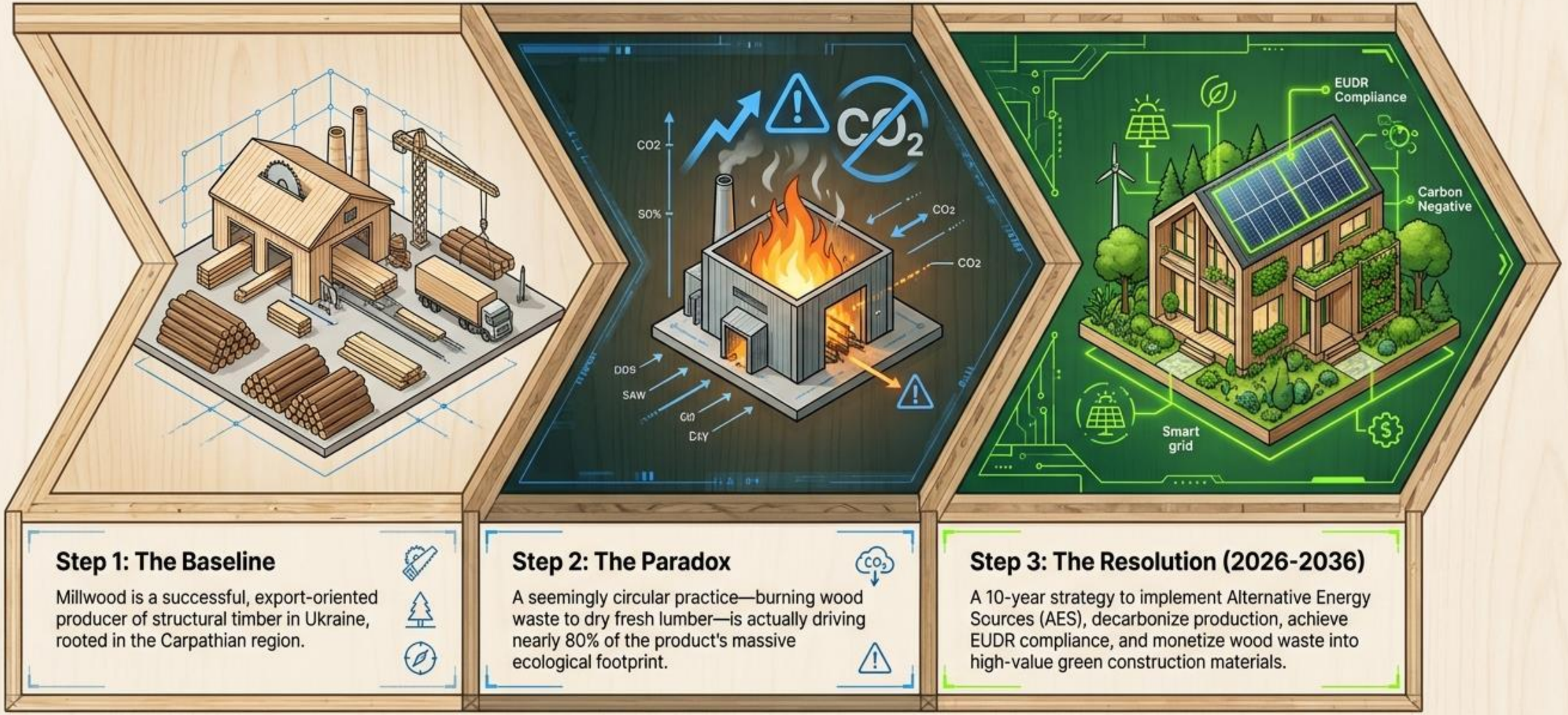
Enterprise-Wide Ecological Impact Diagnostics

Total Monthly Load (Heating Season): **64.21 ha**





The Green Paradox to Green Leadership



Step 1: The Baseline

Millwood is a successful, export-oriented producer of structural timber in Ukraine, rooted in the Carpathian region.

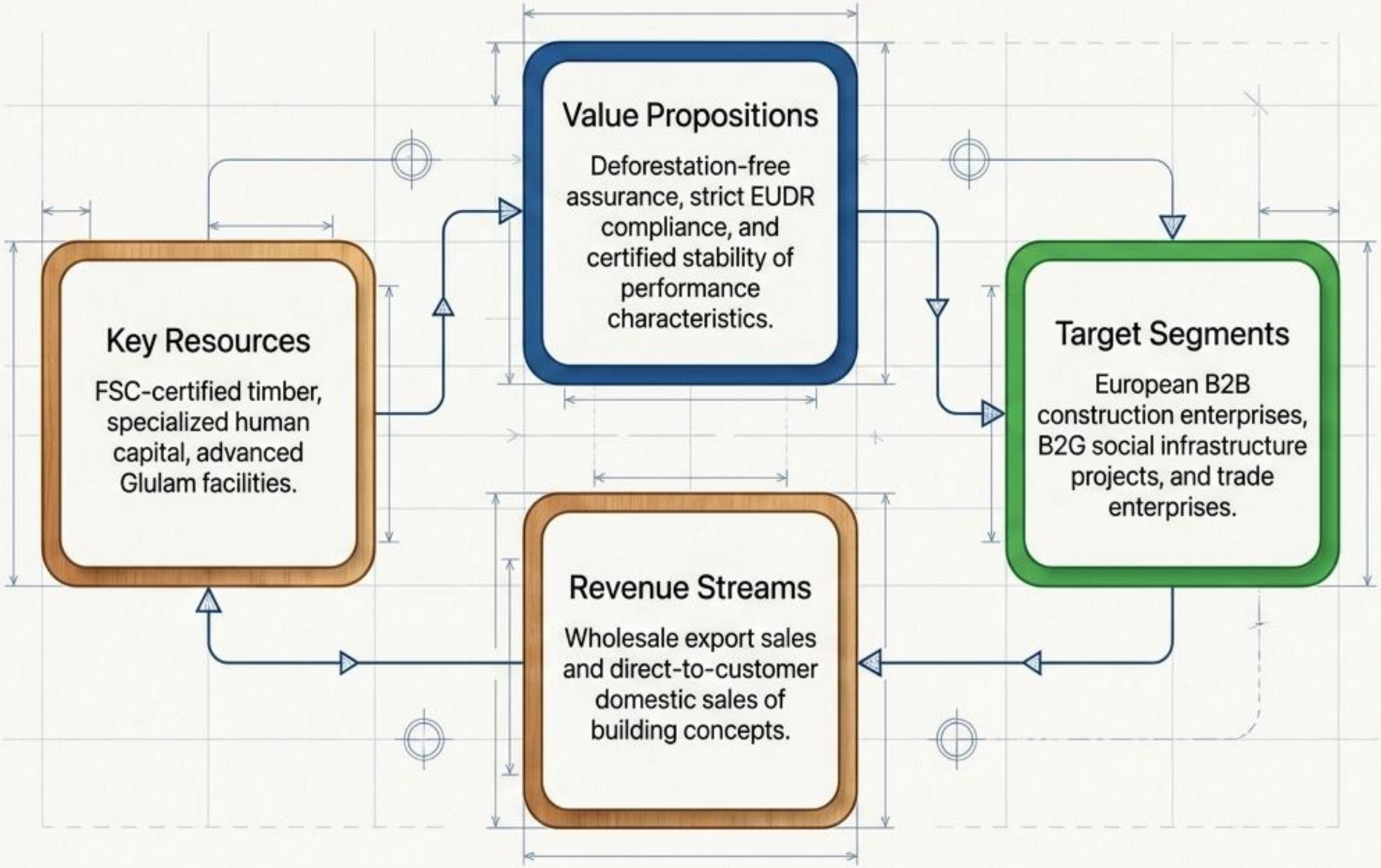
Step 2: The Paradox

A seemingly circular practice—burning wood waste to dry fresh lumber—is actually driving nearly 80% of the product's massive ecological footprint.

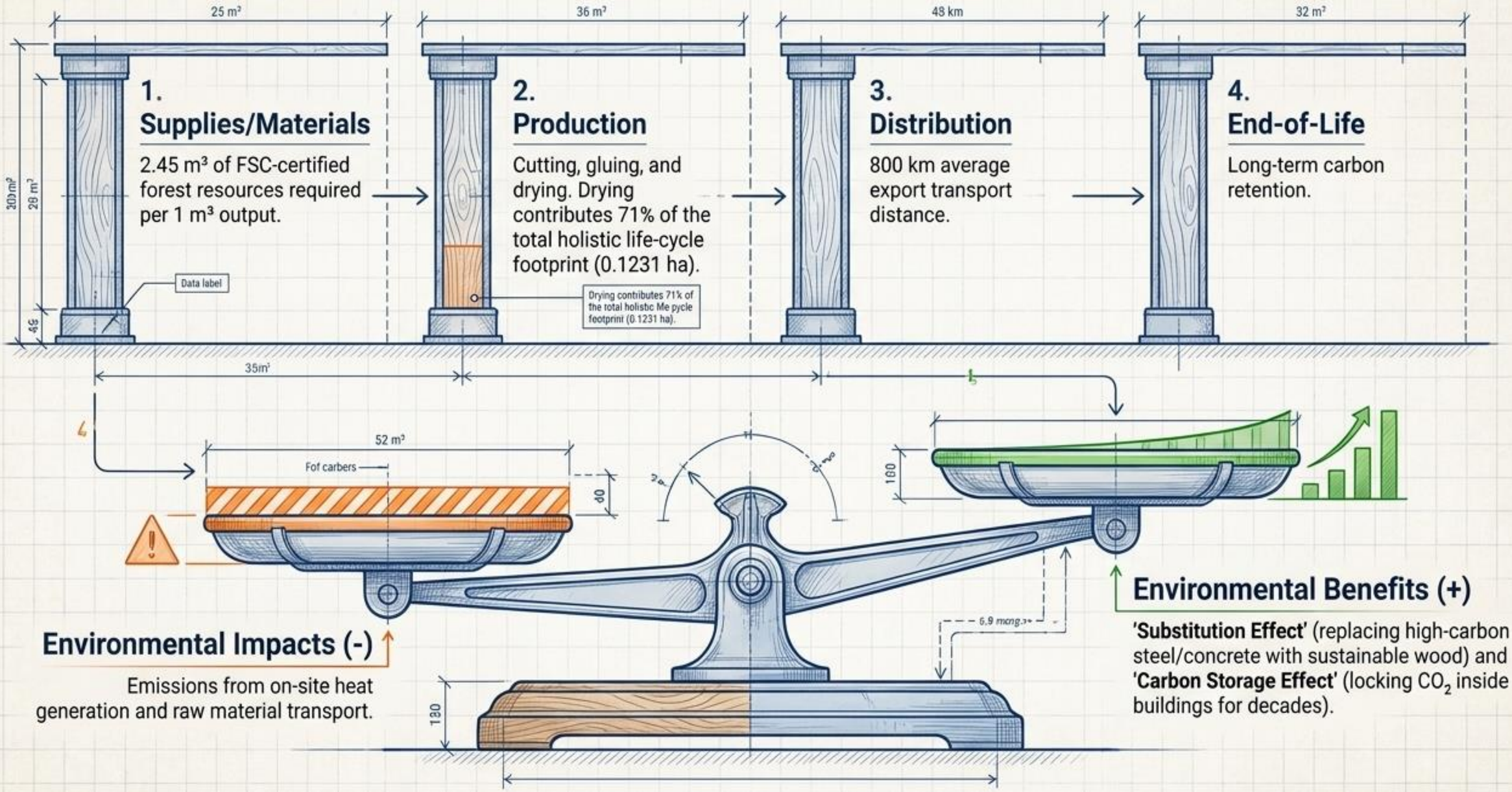
Step 3: The Resolution (2026-2036)

A 10-year strategy to implement Alternative Energy Sources (AES), decarbonize production, achieve EUDR compliance, and monetize wood waste into high-value green construction materials.

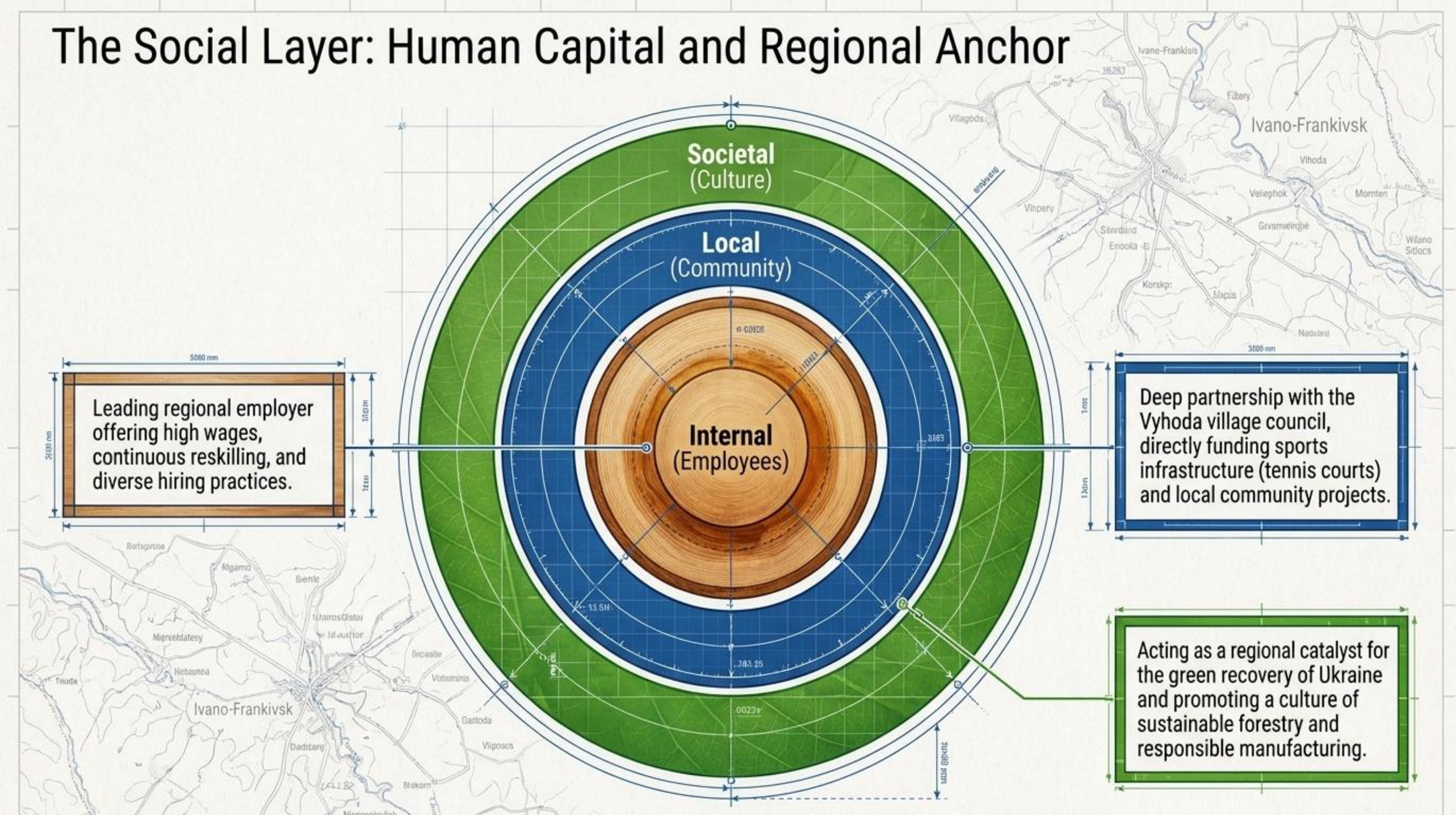
The Economic Layer: Export-Oriented Value Creation



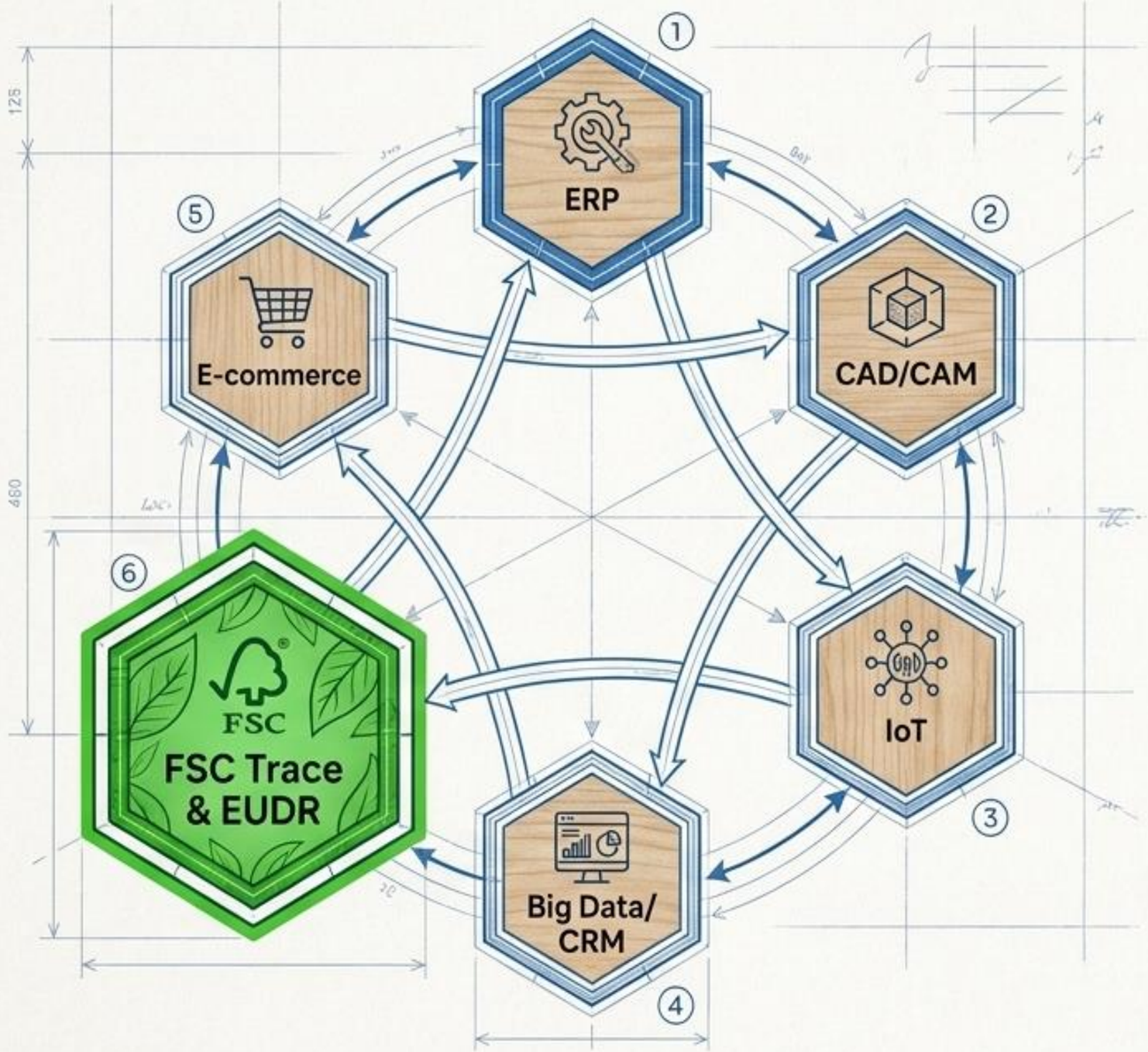
The Environmental Layer: Physical Resource Flows



The Social Layer: Human Capital and Regional Anchor



The Digitalization Ecosystem



Core Operations

ERP (centralized control) and CAD/CAM (automated modeling linked to CNC machinery).

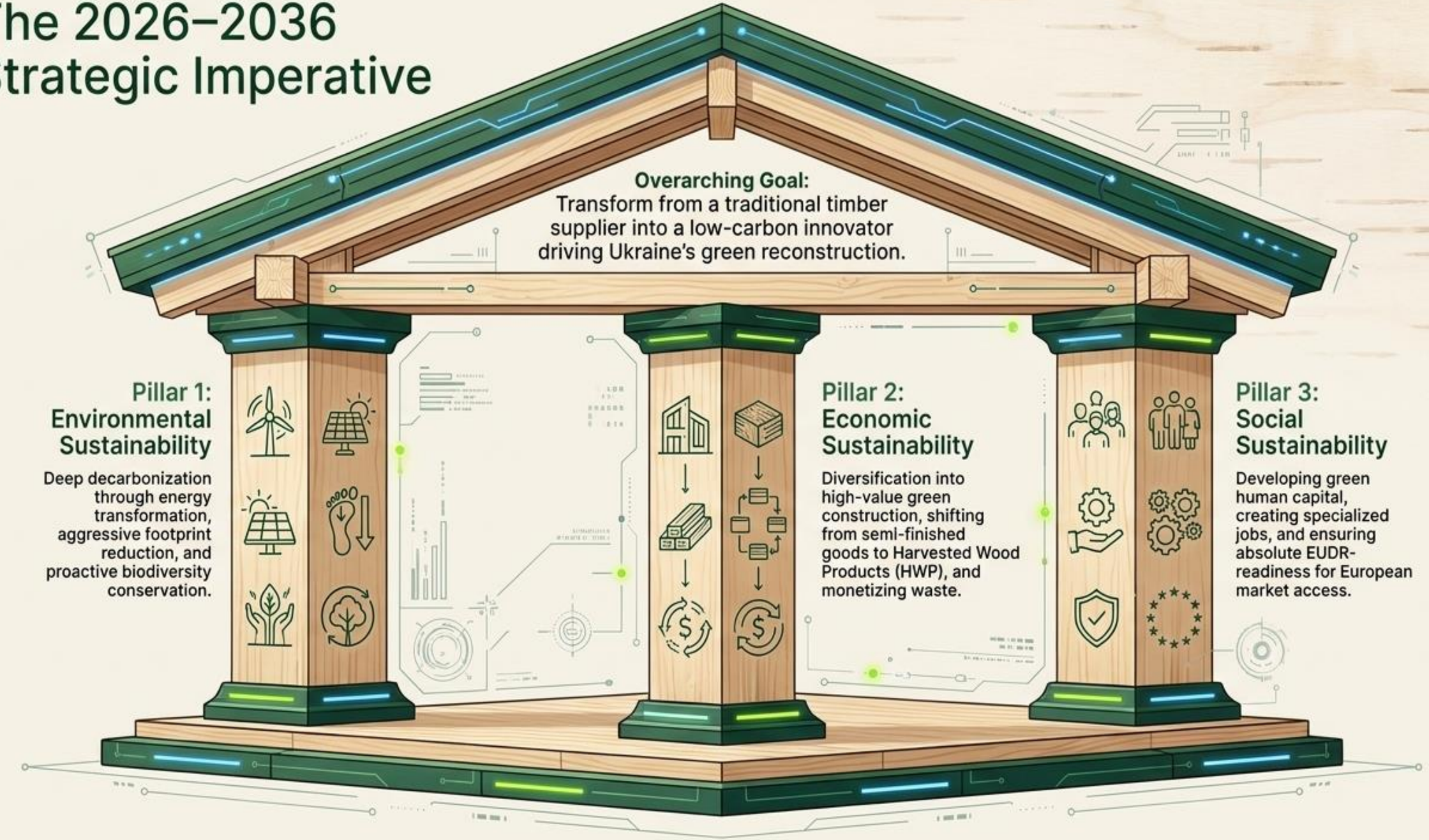
Customer Interface

Online configurators (3D visualization), CRM, and Big Data analytics for demand forecasting.

Compliance Infrastructure

FSC Trace integration and geolocation tracking via the Ukrainian electronic timber accounting system—an absolute prerequisite for flawless Due Diligence under the EU Deforestation Regulation (EUDR).

The 2026–2036 Strategic Imperative



Overarching Goal:
Transform from a traditional timber supplier into a low-carbon innovator driving Ukraine's green reconstruction.

Pillar 1: Environmental Sustainability

Deep decarbonization through energy transformation, aggressive footprint reduction, and proactive biodiversity conservation.

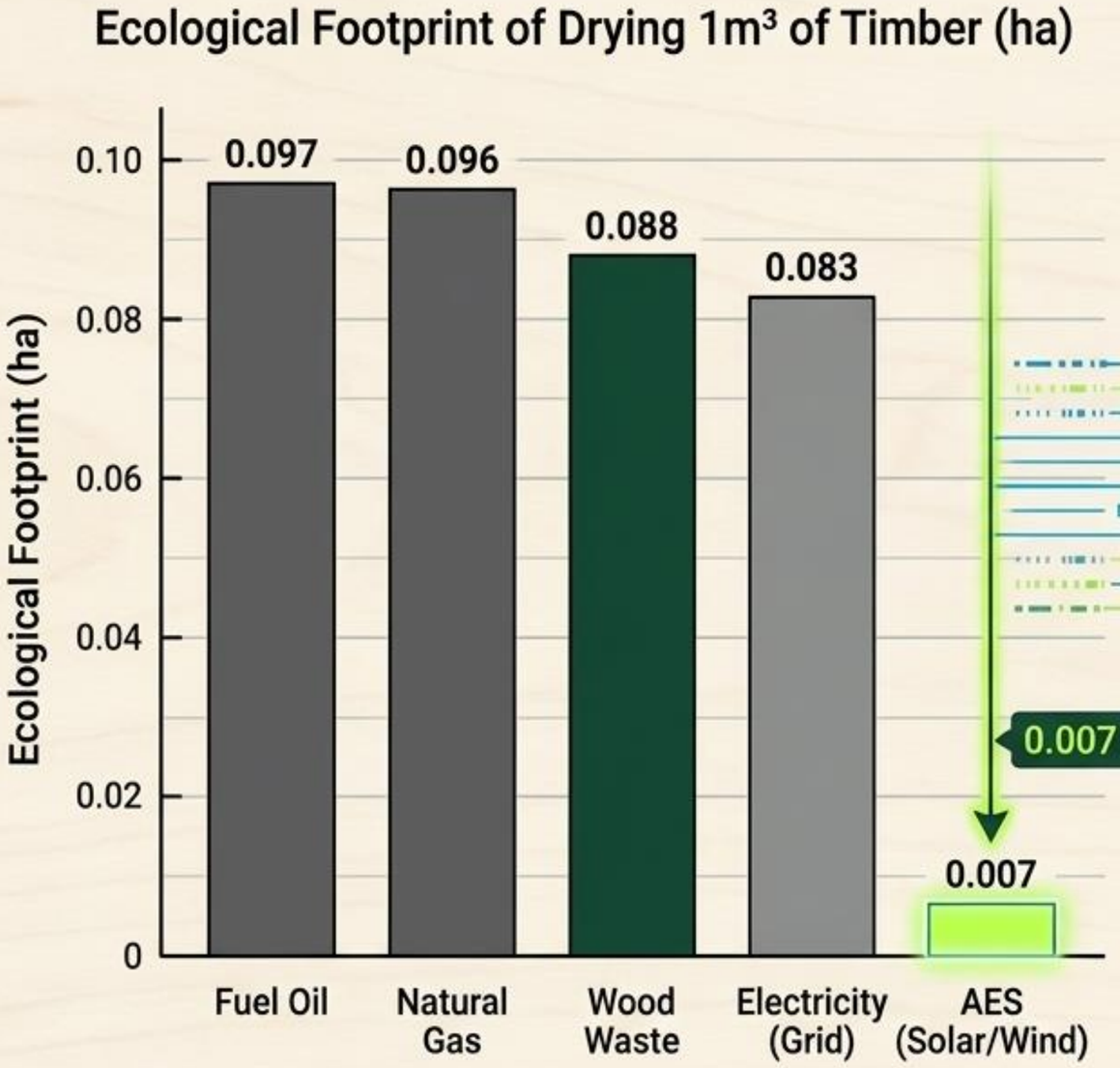
Pillar 2: Economic Sustainability

Diversification into high-value green construction, shifting from semi-finished goods to Harvested Wood Products (HWP), and monetizing waste.

Pillar 3: Social Sustainability

Developing green human capital, creating specialized jobs, and ensuring absolute EUDR-readiness for European market access.

Pillar 1: Eliminating the Carbon Paradox



The Action

Phased transition of drying facilities and space heating from wood waste combustion to Alternative Energy Sources (AES)—specifically solar and wind.

The Impact

- Footprint of drying plummets from 0.088 ha to 0.007 ha.
- Total product footprint drops by 73% (from 0.1105 ha to 0.03 ha).

Biodiversity Action Plan

- Enforce strict FSC/PEFC standards across all roundwood suppliers.
- Implement compensation programs: Active reforestation with climate-resilient native spruce.
- Protect riparian buffer zones to maintain local ecosystem health and water quality.

Pillar 2: Monetizing Waste & Diversifying



The Shift & The New Asset

By transitioning to AES, Millwood frees up **~2,180 m³ of wood waste annually** previously lost to the incinerator.

This material is redirected into the production of **high-value panel materials**, generating a new, low-footprint **revenue stream.**

Green Construction & Climate Finance

- Transitioning from semi-finished structural timber to **Harvested Wood Products (HWP).**
- Focusing on ready-made **modular** and timber-frame **housing** solutions for B2B/B2G markets.
- Utilizing **Natural Capital Accounting (NCA)** to quantify the carbon stored in HWP, creating a financial carbon asset to attract green investment.

Pillar 3: EUDR Readiness & Green Human Capital

EUDR Compliance (The Export Gateway)



Due Diligence System (DDS): Comprehensive risk assessment of deforestation and illegal logging.

GIS Geolocation Tracking: Integration with the Ukrainian electronic timber system to store precise coordinates of harvesting plots—a non-negotiable requirement for EU market access.

INTEGRATED WORKFLOW

Green Human Capital



Knowledge Engineering Digital Tools

Reskilling Programs: Training existing staff in AES tech maintenance, green engineering, and advanced digital tools.

Job Creation: Generating new, highly skilled "green collar" jobs in Vyhoda directly tied to the new timber-frame housing production line.

Measuring Success: KPIs for 2036

KPI Metric	Baseline (2025)	Interim (2030)	Target (2036)
Environmental Section			
Reduce total footprint per 1 m³	⬇ 0.1105 ha	⬇ < 0.07 ha	⬇ < 0.04 ha
AES thermal energy share	0%	> 50%	> 95%
Restored forest monitoring	0 ha/year	> 20 ha/year	> 50 ha/year
Economic Section			
Revenue from timber-frame houses	0%	⬆ > 15%	⬆ > 40%
EU exports growth	0%	⬆ > 100%	⬆ > 300%
Social Section			
Specialized ‘green’ jobs created	0	⬆ > 15	⬆ > 30
EUDR compliance	N/A	⬆ > 90%	100%

Closing Note: Millwood’s commitment to natural capital transforms environmental responsibility into a definitive competitive advantage for the green reconstruction of Ukraine.

Forest Sector at a Crossroads: Biodiversity Signals in Ukraine

The tension between immediate wartime survival and long-term EU environmental integration.

Invasion-driven collapse forces enterprises to prioritize immediate financial survival over ecological investments.

1
-50,000
Employees lost (2021–2023).

2
-2,400
Enterprises closed. Current average size: just 6 employees.

3
$160.8k
Average annual turnover per enterprise.

Resource Deficit & Deregulation

Severe harvesting declines have created huge timber resource deficits. To compensate, enterprises are softening or ignoring vital ecological requirements—specifically environmental impact impact assessments. **Direct threat to biodIversity.**



EUDR & European Integration

A dual signal for the sector. Strict EU regulations act as a powerful structural driver.

Short-Term Friction

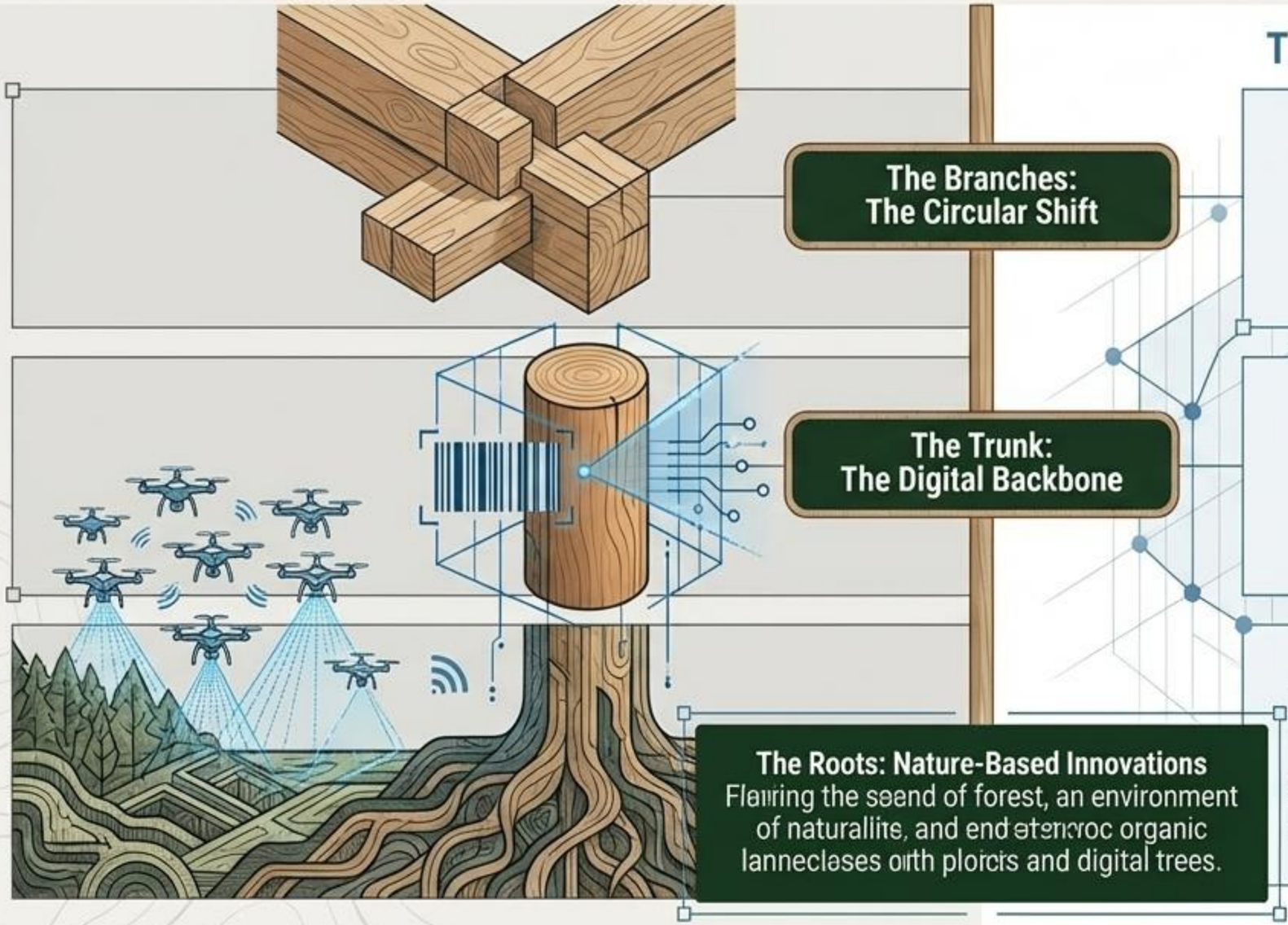
Severe compliance challenges for struggling micro-enterprises (traceability, due dlligence, strict sustainabliity rules).

Long-Term Driver

Forces a structural transition toward transparent, biodiversity-oriented forest management, ultimately unlocking EU market access.

Conservation efforts must bridge the gap between today's resource-starved survival tactics and tomorrow's strict EU compliance requirements.

Moving Beyond Business as Usual: Signals of Innovation



The Branches: The Circular Shift

CLT Production: Pioneers like Rezult House are shifting exports from raw logs to high-value, carbon-storing Cross-Laminated Timber.

FSC Compliance: Over 400 Ukrainian companies now certified to European sustainability standards.

E-Forest & ETA: Mandatory digital passports for logs, reducing illegal logging to just 0.2% of harvesting volume.

Deep Green Ukraine: AI and satellite imagery acting as digital guardians to spot illegal activity in real-time.

Close-to-Nature Silviculture: NGOs like FORZA championing the transition from clearcutting to selective logging and natural regeneration.

The Digital Forester: Deploying remote drone swarms (e.g., Dropla) to safely demine 0.5M hectares of forest without risking human lives.

The Strategic Horizon: Institutionalizing Biodiversity

Macro: Biodiversity Strategy 2035

Integration: Establishing the Emerald Network and adopting the European 30x30 target (protecting 30% of land and sea).

Restoration: Mandating dam removal, wetland recovery, and the demining/rehabilitation of war-affected ecosystems.

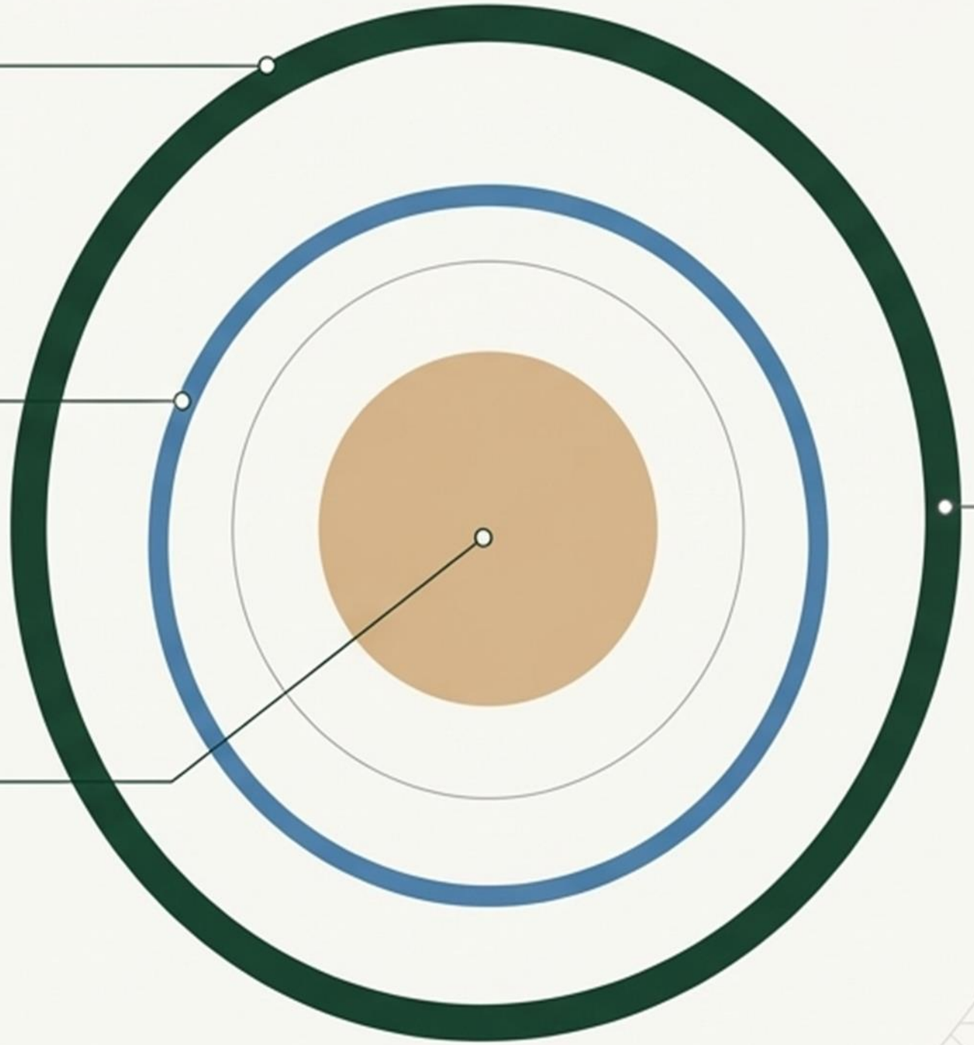
Meso: Regional Development Strategy 2027

Spatial Networks: Connecting fragmented forests and river valleys into unified ecological corridors for safe wildlife migration.

Cross-Cutting Rule: Legal doctrine dictating economic development cannot occur at the expense of nature depletion.

Micro: Regional Application (Lviv Case Study)

Actionable Tactics: Expanding the Nature Reserve Fund (NRF), financing Regional Landscape Parks, and controlling aggressive invasive flora like Sosnowsky's hogweed.



Regional customization is a legislative mandate: Industrial zones tackle emissions, southern regions protect estuaries, and de-occupied zones focus entirely on humanitarian ecosystem demining.

Responsibility as a Competitive Advantage

The Transformation

By decisively solving the carbon paradox of its drying process, Millwood transitions from a traditional timber supplier to a high-value, low-carbon innovator.

The Vision

Millwood is now positioned as a flagship of green construction, ready to lead the sustainable reconstruction of Ukraine with minimal ecological footprints and maximum added value.



“Turning natural capital into a lasting, sustainable legacy.”