Forest enterprise: Unique forest d.o.o.

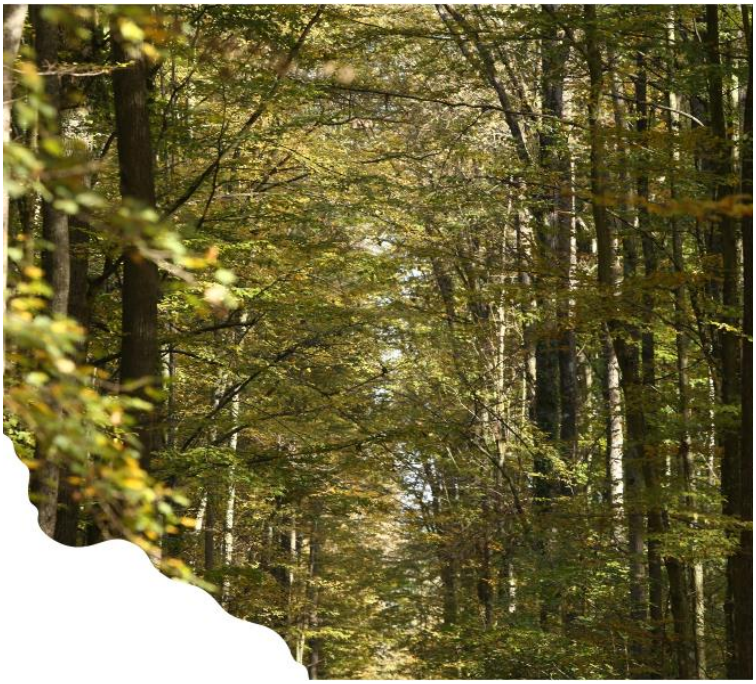

Figure 1 Forest enterprise: Unique forest d.o.o.

Short statement characterizing the SDA

"The company emphasizes sustainability, ensuring forest resources are preserved for future generations; combating climate change through projects that support ecological balance and reduce carbon footprints; responsibly managing forests, preserving diverse plant and animal species."

General description

Unique Forest – Where Passion for Nature Meets Forestry Expertise. Our story began in 2018 when we decided to combine our love for forests with a commitment to environmental preservation. Since then, we have dedicated ourselves to growing our company, exploring innovative approaches to forestry, and building client relationships based on trust and quality. Our mission is straightforward: we aim to contribute to sustainable forest management, preserving biodiversity while delivering top-tier services to our clients. At the core of our work lies a deep respect for nature, with every project serving as an opportunity to promote environmental conservation and sustainability. Our team consists of experts with extensive experience in forestry. Each member brings unique expertise, responsibility, and enthusiasm, creating a synergy that makes our work more efficient, higher quality, and well-balanced. Our knowledge spans ecosystem preservation to forest resource management, enabling us to provide a comprehensive approach to every project. Most of our employees were discovered right in the forest! We identified them as potential candidates while they were engaged in forest maintenance, surveying, or measurement tasks through student contracts, or working as laborers, technicians, hunters, or timber technologists in logging operations. We are proud to hold the FSC certificate, which we received on July 26, 2021, through continuous and high-quality work, experience, and business standardization. The FSC (Forest Stewardship Council) certificate in forestry represents an international standard for sustainable forest management. FSC is an independent

organization that sets standards for sustainable forest resource management worldwide. The certificate is awarded based on several conditions, including forest conservation, social responsibility, and transparency.

Climate change poses multiple threats to Unique Forest's operations. Extreme weather events, including wildfires, storms, and prolonged droughts, increase tree mortality and reduce forest resilience, particularly in tropical and temperate regions. Shifting climatic conditions make certain tree species less viable, complicating reforestation efforts. Pests, such as the emerald ash borer, thrive in warmer climates, exacerbating damage. Operationally, reactive management practices struggle to keep pace with rapid changes, while fragmented policies balancing biodiversity and productivity create trade-offs. Limited climate finance—only ~2.5% targets forests—restricts investment in proactive measures. Uncertainty in future conditions and rising costs for monitoring and adaptation further strain resources, risking maladaptation if strategies like species selection are poorly implemented. Despite challenges, Unique Forest can leverage opportunities to enhance resilience. Sustainable Forest Management (SFM), aligned with standards like the Sustainable Forestry Initiative (SFI) - Climate Smart Forestry Objective, promotes diverse, healthy forests less vulnerable to disturbances. Diversifying tree species and ages improves ecosystem stability and soil health. Restoration initiatives, such as the Bonn Challenge, offer potential to sequester 1.7 gigatonnes of CO_2 annually, positioning Unique Forest as a mitigation leader. Technological tools like remote sensing and machine learning enable real-time monitoring of forest health and fire risks. Engaging local communities and Indigenous Peoples integrates valuable knowledge, reducing maladaptation. Economically, diversifying into non-wood forest products, ecotourism, or SFI-certified sustainable wood products taps into growing markets. Urban forestry and circular economy initiatives, like forest-based bioenergy, further align with sustainability trends. By 2030, climate impacts will intensify, with increased risks of wildfires and ecosystem shifts. However, proactive adaptation through SFM, restoration, and technology can secure Unique Forest's future. Aligning with global initiatives and standards enhances market access and credibility. Collaboration with communities and policymakers will unlock funding and navigate policy challenges. Balancing environmental and economic goals will ensure long-term resilience.

Unique Forest stands at a crossroads where climate change demands urgent action. By adopting science-based management, leveraging technology, and fostering partnerships, the company can mitigate risks and lead in sustainable forestry. Investing in resilience now will safeguard ecosystems, support global climate goals, and ensure Unique Forest thrives in a changing world.

Figure 2 Young oak stand, after substitution of common hornbeam coppice (over 90.000 young oak per/ha)

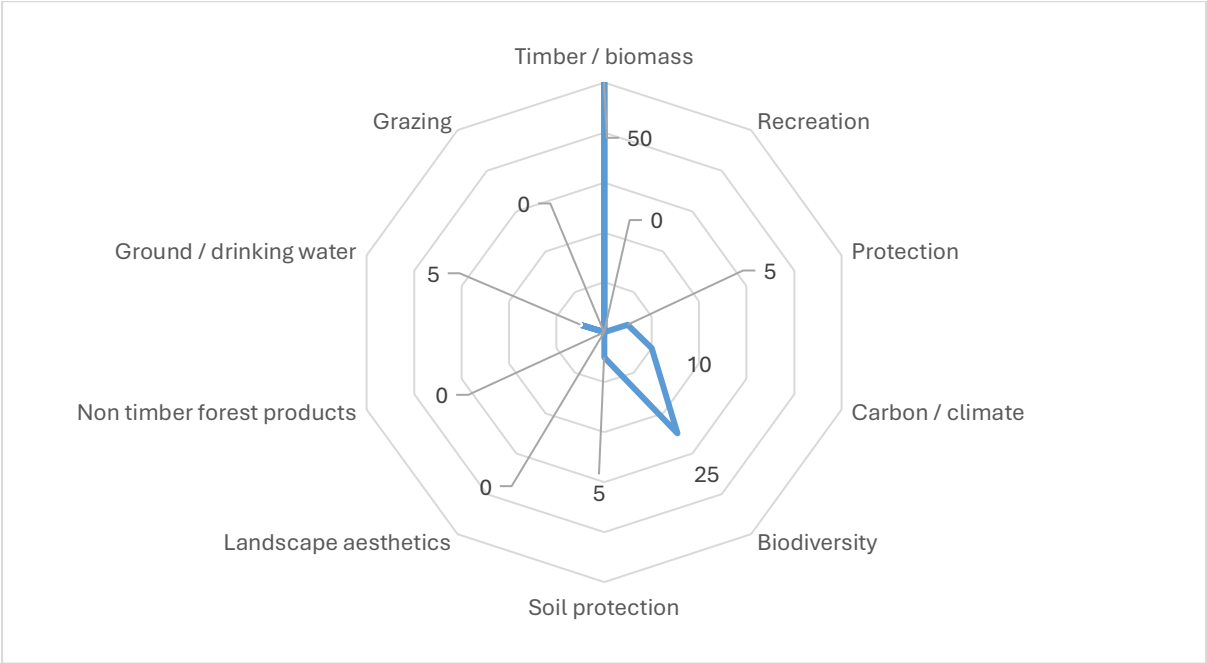

Figure 3 Importance by ecosystem service. Radar diagram presents the relative investment in resources (manpower/finances) in different goods and services in % (enterprise estimate).

Ecosystem services	***Coverage/importance in % (100 in total)***
Timber / biomass	50
Recreation	0
Protection	5
Carbon / climate	10
Biodiversity	25
Soil protection	5
Landscape aesthetics	0
Non timber forest products	0
Ground / drinking water	5
Grazing	0
Total	***100***

Key data/ summary information

Forest Community	*Mixed oak–beech–hornbeam forest in both lowlands and hilly areas, black locust forest (high forest and coppice), ash forest, black pine and Norway spruce cultures (very little),*
Main tree species and their share of the total forest area (in %)	Pedunculate oak (*Quercus robur*) – 25 %, sessile oak (*Quercus petraea*) – 33 %, common beach (*Fagus sylvatica*) – 21 %, common ash (*Fraxinus angustifolia*) – 2,73 %, common hornbeam (*Carpinus betulus*) – 10 %,
Total forest area (ha)	6200
Main management objectives	Timber production; forest recreation; nature conservation, gaming management
Main management types	Close – to – nature foresty, even-aged (rotation), natural regeneration, shelterwood management Low to no management actions in forests designated for nature conservation
Management challenges (disturbances and other challenges)	Windstorm damage, climate change, and low acorn production
Total volume (m^3; m^3/ha)	2080590 m^3, 335 m^3/ha
Annual growth (m^3/year; m^3/ha*year)	48879 m^3, 7,88 m^3/ha
Annual harvest (m^3/year; m^3/ha*year)	54321 m^3, 8,76 m^3/ha
Ownership	Private forest
Altitude (max, min and average), m.a.s.l.	95 - 610
Climate	Precipitation (annual average; 770 mm); Temperature (annual average, 11,2 °C)
Geology and soil	Hydromorphic soils: Typically have a pH range of 4.5 to 6.5, often acidic due to organic matter accumulation and waterlogging, which can limit nutrient availability; heavy, clay-rich texture due to prolonged water saturation, leading to compact, poorly aerated structures with high water retention. Automorphic soils: pH varies widely (5.0 to 7.5), depending on parent material and climate, generally less acidic and more neutral, supporting diverse plant growth; lighter, loamy to sandy textures, promoting good drainage and aeration, suitable for diverse vegetation and root development.
Protected forest area (total ha)	341,20 ha of nature conservation area (25,00 for species diversity, 0,50 ha for community needs and 315,70 ha for ecosystem services)
Forest with protective functions (ha)	--

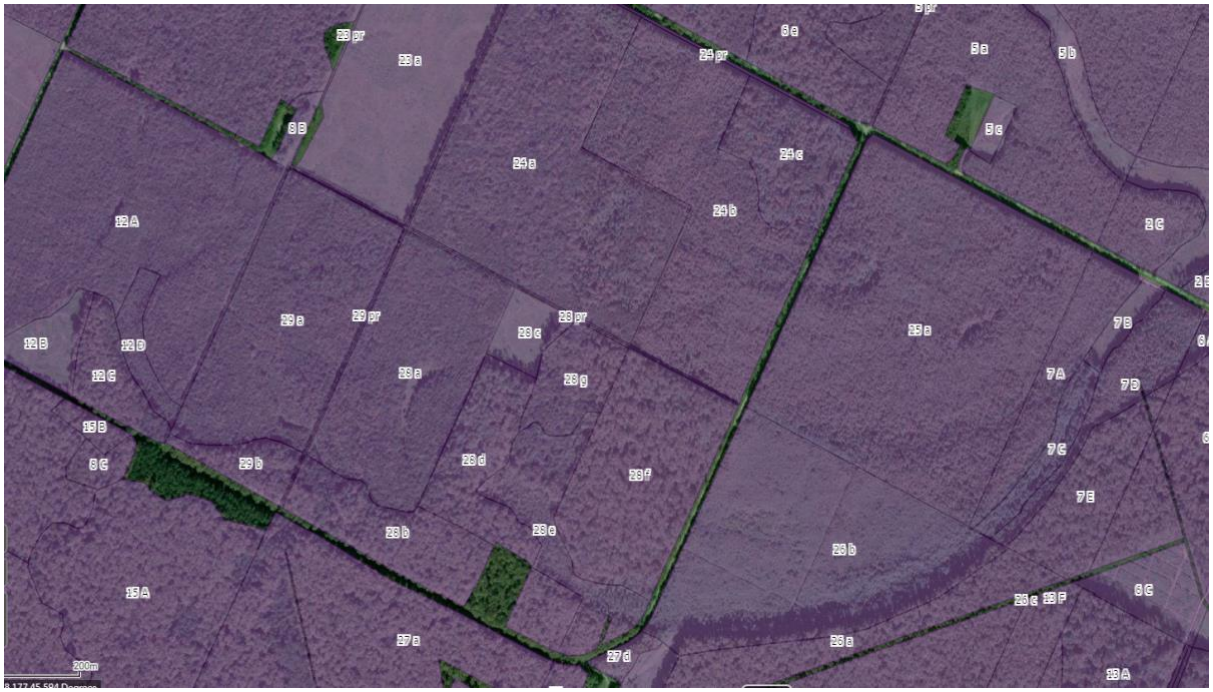

Figure 4 Forest management compartments/subcompartments