Agroforestry as Natural Capital Investment — Returns, Carbon Credits, and Ecosystem Services

By Dirk Roethig | CEO, VERDANTIS Impact Capital | March 20, 2026

Global agriculture faces a paradoxical challenge: it is simultaneously one of the largest drivers and one of the most important potential solutions to climate change. Agroforestry — the integration of woody perennials into agricultural and forestry systems — is increasingly seen as the key to resolving this contradiction. Dirk Roethig analyzes why agroforestry is convincing not only ecologically but also increasingly interesting as an investment asset.

A Market in Transition: 2.5 Billion Dollars and Growing

The agroforestry-based carbon credit market reached USD 2.5 billion in 2025, growing at 28% CAGR (FutureDataStats, 2025). Analysts project USD 12 billion by 2032 — a fivefold increase within seven years.

These figures reflect a structural shift in how biological systems are valued: ecosystem services that were long treated as free public goods are increasingly being priced, traded, and made accessible to investors. Dirk Roethig observes this development firsthand: "We are witnessing the transition from a niche to an asset class. Agroforestry projects offer a combination of biological carbon sinks, long-term land returns, and social legitimacy that no other investment asset can match."

CarbonCredits.com (2025) reports record growth in the forest finance segment: investments in forest-based carbon projects have doubled within a year. Institutional investors — pension funds, insurance companies, sovereign wealth funds — are discovering natural capital

as a standalone asset class with low correlation to traditional financial market risks.

What Agroforestry Delivers: Ecosystem Services Beyond CO2

Ecosystem services span four categories (Hansjürgens et al., TEEB-DE, 2016): provisioning services (food, fiber, timber, water), regulating services (climate regulation, water regulation, pollination, pest control), cultural services (recreation, aesthetics, education), and supporting services (soil formation, nutrient cycles, primary production). Agroforestry systems deliver services in all four categories simultaneously — a property that conventional agriculture rarely achieves.

Paulownia: The High-Performance Tree of Agroforestry

Magar et al. (2018) determined the total carbon sequestration potential of *Paulownia tomentosa* at 9.04 tonnes of carbon per hectare per year — equivalent to approximately 33 tonnes CO2/ha/year. Frontiers in Environmental Science (2024) confirms this finding, classifying Paulownia as one of the most promising tree species for CO2 mitigation, particularly in combination systems with agricultural production.

The Invasiveness Question: Facts Over Myths

In European projects, exclusively sterile hybrids are used — not wild forms. Sterile Paulownia hybrids have a **0% germination rate in field trials** (paulownia-baumschule.de). They are not invasive — invasiveness concerns relate solely to seed-capable wild forms. Paulownia hybrids are frost-hardy to -20 to -25°C and provide excellent pollinator habitat (up to 30,000 flowers per tree).

ROI Research: What Science Says

MDPI Forests (2026) provides one of the most comprehensive economic analyses of agroforestry as a climate-smart economic strategy. Results are clear: agroforestry systems generate significantly higher total returns per land unit than conventional monocultures when all revenue streams are included — timber, agricultural products, carbon credits, and ecosystem services.

VERDANTIS: The Platform for Paulownia-Based Carbon Credits

VERDANTIS Impact Capital positions itself as the leading European platform for Paulownia-based agroforestry carbon credits. The company connects three elements: (1) development and management of agroforestry areas with sterile Paulownia hybrids in Europe; (2) certification of carbon credits under recognized standards (Gold Standard, Verra VCS); and (3) structuring these credits as tradeable financial instruments for institutional portfolios.

References

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