Economic potential of hedgerows: Hedgerows as profitable and sustainable farm assets

SOURCE: Camille Archambaud[1], Angéline De Almeida[1], Esther Le Toquin[1] (2025).Triple Performance. https://wiki.tripleperformance.fr/wiki/Potentiel_%C3%A9conomique_des_haies
[1]Ver de terre Production

Why does the maintenance of hedgerows represent an opportunity for economic valorization?

In the context of climate change, rising fossil fuel prices, and the modernization of agricultural equipment, wood emerges as a highly attractive energy resource due to its renewable nature, lower cost compared to alternative energy sources, and relative price stability over time.

FIGURE 1. Hedgerow wood harvest for energy production. Ferme de Ligny © Ver de terre production

Hedgerows play a fundamental role in bocage landscapes and require regular, controlled management to ensure their functionality and long-term viability. Proper maintenance allows for either limiting their growth or increasing their density, depending on their intended role, in order to maximize their effectiveness. As such, the valorization of hedgerows presents a valuable opportunity for farmers concerned with profitability, landscape preservation, and long-term sustainability. These linear landscape features can support both self-consumption and the diversification of agricultural production and income streams. The technical costs associated with hedgerow maintenance is estimated from 10 to 30 €/100 linear meters per year.

How can hedgerows be valorized?

A variety of valorization pathways are currently available for hedgerows, including the production of timber from high-value species, heat generation through wood energy (such as firewood, wood chips, and pellets), the use of wood chips as animal bedding, and the application of wood as organic mulch. In addition, certain types of hedgerow biomass can be used as supplementary forage for livestock or to support fruit production.

Beyond their direct economic value, hedgerows provide numerous indirect benefits. They support biodiversity, offer wind protection, enhance water management, and serve as carbon sinks. These ecosystem services contribute to improved agricultural yields by creating more favorable conditions for crops and livestock. In grazing systems, hedgerows also provide shelter from harsh weather and shade during summer months, thereby enhancing animal welfare and productivity.

- The maintenance and management practices of hedgerows determine both their productivity and their specific function, depending on the intended objectives.
- The hedgerow wood produced on the farm can be sold to local biomass energy markets, such as heating systems for local municipalities or businesses, or used for self-consumption on the farm.
- Hedgerows can provide various valuable resources—such as timber, firewood, wood chips for fuel or animal bedding, and even forage or fruit—supporting both economic diversification and ecological resilience.

Timber

High-stem trees offer economic opportunities through the production of timber or craftsmanship. A formative pruning is often necessary to allow trees with high-quality wood to develop a straight trunk. Their exploitation spans long periods, typically between 50 to 120 years before harvesting. The price per cubic meter is specific to each tree and depends on the species, age, rarity, and its social and landscape utility.

Wood Energy

Hedgerows represent a significant source of fuel. Large-scale studies have shown that a well-maintained hedgerow can yield between 30 and 150 tons of green wood per kilometer. Firewood is the most basic form of wood energy utilization. While it serves as heating wood, it often has a low calorific value due to its persistent moisture content. A kilometer of hedgerow managed in coppice can provide between 100 and 200 steres every 15 to 20 years. However, its production does not allow for the valorization of all wood, such as the upper branches and residual materials. Wood chips are composed of small wood fragments a few centimeters in size. They are produced from forestry or hedgerow residues (branches, pruned wood, etc.). All wood is utilized—both the trunk and branches—resulting in no waste. The wood chips can be valued as fuel, mulch, animal bedding, or for use in paths

Wood chips for animal bedding

The use of wood chips for animal bedding is a particularly interesting alternative to straw, either as a replacement or a supplement. Four cubic meters of dry shredded wood can replace approximately one ton of straw. The ad-vantages include high absorbency, slip-resistant effectiveness, and improved sanitary conditions.

The use of ramial chipped wood as mulch for plants is carried out using young, shredded woody twigs from the current year or a maximum of 2 to 3 years. The primary tree species used are hardwoods, which are preferred over conifers (a maximum proportion of 20% is recommended) or tannin-rich species (such as acacia, oak, and beech). Shredded branchwood increases organic matter and helps preserve soil moisture.

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FIGURE 2. Timber Planks for furniture crafting at EARL Des Vieilles Rues (a), Storage of wood chips from hedgerow pruning for use in an individual boiler for self-consumption at EARL La Ferme Ligny (b), Wood chip spreading for cattle bedding: a multi-layer approach with straw at Hoeffel Farm (c), Intra-field multi-strata hedgerows with fruit trees and shrubs for self-consumption (d). © Ver de Terre Production

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