



Whole Farm Agroforestry Thinking on a Limited Budget

From Drought to Water Retention

Biofarma Dubový háj

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Slovakia · Hrušov, Veľký Krtíš district

FARM AREA

Total: 8 ha

Regenerative: 8 ha

PRODUCTION

Fruit and vegetables · goats

and rabbits · meat and milk

FARMING APPROACH

Organic · regenerative

FEATURED PRACTICE

Integrated agroforestry,
grazing and water retention

REGENERATIVE AND ORGANIC SINCE

2016

**A small farm designed as one connected system for soil,
water, trees, livestock and learning.**

CASE STUDY · SK01



*"Practice makes perfect;
whole-farm thinking makes
regeneration work."*



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Meet the farmer and the farm

Farm factsheet

Information	Farm details
Farm name	Biofarma Dubový háj / Organic Farm Oak Grove
Type of production	Organic mixed farm: vegetables, fruit, arable/grassland, agroforestry, livestock and education
Country	Slovakia
Region / location	Hrušov, Veľký Krtíš district · 48.160381, 19.097249
Altitude / climate	Approx. 400 m a.s.l. · dry southern Slovak context
Average annual rainfall	500 mm/year
Soil type / texture	Heavy clay loam; permeable volcanic tuff; groundwater inaccessible.
Total farm area	8 ha
Area under regenerative practices	8 ha including 1.2 ha of partly grazed woodland
Featured practice area	8 ha
Farming approach	Organic · regenerative
Regenerative practices from	2016
Crops / livestock / products	Fruit and vegetables, goats, rabbits; meat and milk
Other relevant data	Educational and demonstration role; mainly direct marketing to friends and family
Social media links	Facebook: Biofarma Dubový háj
Farmer or farm contact	Ľuboš Molitoris, farmer



Ľuboš Molitoris · Biofarma Dubový háj

Farmer profile

Since 2016, Ľuboš Molitoris has been developing Biofarma Dubový háj as an organic family farm focused on regenerative grazing and agroforestry.

A member of the Slovak Agroforestry Association, he also advises others on establishing food forests.

Case focus

Mulched no-till beds, agroforestry, rotational grazing and water-harvesting earthworks operate as one system for soil, water, biodiversity and resilience.

The farm and local context

The 8 ha farm in Hrušov has heavy clay loam soils over volcanic tuff and no accessible groundwater. Some areas were intensively cultivated in the past, while others remained unused.

Water retention and permanent soil cover are therefore central to the farm's approach to crops, trees and livestock, and form an important part of its educational activities.

Regenerative transition timeline



How the farm changed and what comes next

Current integrated system

By February 2026, the farm inventory recorded 505 well established woody plants, including 389 trees since 2020 in addition to 1,2 ha grazed forest.

Low-irrigation vegetables, agroforestry, rotational grazing and water-retention measures now operate as one integrated system.

Vegetables with little or no additional irrigation - Heavy mulch, water-retention measures and good soil structure support vegetable production during dry periods with minimal or no additional irrigation.

Designed a 0.3 ha **food forest with water-retention measures** across 2 ha in Sekier-Záježová with 231 fruit trees and shrubs, including 149 trees; 820 supporting woodland trees and shrubs. In 2025 supported its realization and establishment.

Increase to **9 permanent and 3 temporary grazing sectors** up from only 5 in 2020.

Agroforestry expansion continued

New tree and shrub planting continued gradually throughout the 2020–2025 period with 95 % establishment rate with minimal to no irrigation despite draught conditions.

Received Farma Živá award for nature-friendly farming under BROZ's Krajina živá programme.

Organic certification for animal production in **2021** followed organic certification for plant production obtained a year earlier in **2020**.

FUTURE

Agritourism and education

Visitor accommodation is being developed to support farm stays, practical learning and time in nature..

Water-retention measures expanded under drought and price pressure

Additional swales, ponds and keyline elements were added. Drought, low prices and labour pressure increased.

Hosted the first field trip of the **Slovak Agroforestry Living Lab** and corporate **team building activities**.

Farm walking tours picked up.

Designed **Hrušov Food Forest** being established in 2026: 0.1 ha food forest, 100 m double-row tree avenue, and water-retention measures across 1.2 ha. 112 fruit trees, 85 fruit shrubs, and approximately 400 supporting woodland trees and shrubs.

2026

2025

2024

2023

2022

PAST

Continued farm diversification

More trees and landscape elements were added within the ongoing 2020–2025 diversification phase.

Land was purchased and farm established gradually between 2016 and 2020 financed through outside income from managing a 1400 ha plantation with fast growing wood species.

First trees planted in 2019.

Tillage and synthetic inputs used by previous owner were replaced by mulching, grazing, and vegetables in **2016**.

Drought and unavailable groundwater shaped design decisions before earthworks started. His **doctoral research on alternative land use and biomass production in agriculture and forestry** (2010–2014) helped shape his approach to farming.

Established in 2016 on eight hectares of previously intensively farmed or underused land. Biofarma Dubový háj has followed regenerative organic principles from the start, with benefits emerging gradually over the years.

From challenge to regenerative practice



Starting challenge

Previous disturbance weakened soil structure and water retention. Drought, no groundwater and limited farm resources drove the need for change.

Why the farm changed

From 2016, the aim was a resilient small farm based on rainfall capture, living soil and ecological processes rather than tillage and purchased chemicals.

Featured regenerative practice or system

High-diversity vegetables in mulched no-till beds work with agroforestry, managed rotational grazing and water-harvesting earthworks.

Supporting components

Heavy mulch and cover • no tillage or synthetic inputs • agroforestry • rotational grazing • swales, ponds and keyline earthworks

First steps and sequence

The farmer observed the site for about three years before major development. On the sloping land, water retention was designed first, and growing areas were positioned afterwards..

Tools, labour and timing

Manual labour, mulch, fencing, trees, tools, grazing infrastructure and contracted earthmoving. Young trees need establishment watering.

Support and learning

Mainly private funding, partly crowdfunding, strong voluntary support from family members and later volunteer involvement.

Implementation difficulties and responses

Labour, finance, administration and permits slowed work. Gradual implementation, low-input solutions and volunteer help reduced pressure.

Practice transformation



Previous approach	Regenerative practice or system
Intensively managed or unused land with weak structure	One connected system for production, soil restoration, water, trees, livestock and learning
Previously tilled land managed with conventional external inputs	No tillage in vegetable beds; no pesticides or artificial fertilisers; mulch, manure, plant diversity and soil life
Rainfall ran off and no groundwater source was available	Swales, ponds and keyline elements slow, spread and infiltrate rainwater
Open or disturbed soil was prone to drying and temperature stress	Heavy straw mulch and permanent cover reduce evaporation and protect the soil surface
Livestock and income diversification were not integrated	Rotational grazing supports nutrient cycling; direct sales, education and planned agritourism broaden the farm role



Water-harvesting earthworks · December 2019



Sheep grazing in the woodland pasture · 2018 · earlier phase of the farm

Results with economic implications



Reported results

≈-70%

Annual water costs

Vegetables grown without irrigation.
Irrigation only as initial investment to establish newly planted trees.
Source: farmer-reported water bills

2×

Increase in pasture biodiversity

Conservative farmer estimate observing wild pollinators, butterflies and pasture plant species.

≈200%

Of typical watermelon weight

Jubilee Bush · largest fruit: 11 kg, 2024
Reference weight: ≈5.5 kg
Source: farmer report and variety info
See additional case insights on p. 7.

Evidence and observed change



Indicator / evidence	Before	After / change	Source and status
Soil moisture and structure	Weaker structure and moisture retention	Healthier, covered and moister soil, especially in mulched beds and near water measures	Farmer observation / photos; from c. 2024
Water use in vegetables	No groundwater; drought limited production	Minimal/no additional irrigation from c. 2024; young trees are watered separately during establishment.	Farmer observation / records
Landscape resilience	Low diversity and drought sensitivity	Polycultures, trees, grazing, ponds and swales; healthier animals and lower input dependence reported	Farmer observation / photos

Investment, costs and viability



Economic aspect	Before / previous	After / change	Source / status
Input and operating costs (fertilisers, pesticides, herbicides, fuel, water)	No pesticides, herbicides or artificial fertilisers; young trees need water.	Very low chemical-input costs. Public-water underpayments: c. €1,000 (2022) and €300 (2025); trees watered c. 4–5 years.	Farmer records / estimate
Labour or machinery needs	High labour for mulch, planting, fencing, livestock and earthworks.	Labour remains high; volunteers reduce pressure.	Farmer observation
Irrigation requirement in vegetable production	Drought and no groundwater constrained production.	From c. 2024, mulched vegetables needed minimal/no additional irrigation.	Farmer observation / records
Product quality or market value	No comparable baseline documented.	Product quality creates added value, but this is only partly recognised and reflected in what customers are willing to pay.	Farmer assessment
Investment needed for the practice	Mainly private funding.	Trees, fencing, tools, mulch, grazing infrastructure and earthworks.	Farmer estimate
New market opportunity or direct sales	Mainly farm production and direct sales.	Visitor accommodation is being developed; farm visits and food-forest advice help to diversify income.	Farmer plan
Farmer assessment of economic viability	Low prices and high labour intensity.	Viability is achieved by low inputs, direct sales, volunteers, education and income diversification.	Farmer assessment

Lessons and adoption



Who can apply this?

Small and medium **farms facing drought, weak soil structure or high input exposure** can adopt individual elements or combine them gradually.

Conditions and adaptations

Adapt to soil, slope, rainfall, water access, labour, finance and machinery. Begin with observation and manageable trials.

Remaining limitations

Drought, no groundwater, labour, permits and low prices remain constraints. Young-tree establishment can raise water costs.

Limitations and what worked

Ongoing trade-offs and limitations

- Drought and labor shortages increase risks.
- Capacity to develop sales of value-added products is restricted.
- Permits and limited funding constrain the pace of farm development.
- Mulching, fencing and livestock care require realistic labor planning.
- Young trees require care and watering first 3-4 years to establish if draught extremes occur.



August 2016 · previous cereal field



Practical adoption

Observe first. Start with soil cover and reduced disturbance, then connect water, trees, production and grazing at a manageable scale.

- 1 Observe water flow, sun, wind, vegetation and access before major investment.
- 2 Protect the soil surface first with mulch, cover and reduced disturbance.
- 3 Design water retention together with production, trees and grazing.
- 4 Expand gradually and match the system to labour, finance and machinery.

Next phase

Accommodation is being developed for visitors and volunteers who want to experience farm life, enjoy the surrounding landscape or recharge in nature.

Observed benefits and what worked

- Since around 2024, the farmer has observed visibly **moister soil, healthier animals** and **greater biodiversity** across the farm.
- Vegetables grow with little or no additional irrigation supported by mulch and water retention measures, farm increased **resilience** under draught conditions.
- Own livestock manure supplies nutrients, farm is **sustainable** with few external inputs.
- Using no synthetic pesticides and no mineral fertilizers keep **input costs low**.



August 2023 · same farm area

2016 and 2023 views show the transition from cereal production to a more diverse, structured farm landscape • Farm photographs

Additional case insight

Reading the landscape helps design a farm that works with its soil, water, terrain and people.

From farm design to shared practice

Before larger investments, the farmer observed water flow, sun exposure, soil conditions, wind, vegetation and access.

These observations guided the placement of beds, trees, rotational grazing sectors and earthworks and helped him learn while avoiding costly mistakes.



Aerial view · August 2018 · Ľuboš Molitoris

Helping others establish food forests

Drawing on his experience managing a 1,400 ha tree plantation and developing his own farm, Ľuboš now **designs and helps establish food forests**. His projects include Sekier–Záježová and Hrušov. By attracting visitors to his picturesque farm he contributes to regional development through farming.



Aerial view · March 2024 · Ľuboš Molitoris

From tennis-ball size to 11 kg

In 2017–2019, Ľuboš's Jubilee Bush watermelons grew only to the size of tennis balls. By 2021, his fifth growing season, the fruits were noticeably larger. In 2024, his eighth season, the largest weighed **11 kg—about twice the typical weight for this variety (≈200%)**. Compared with the early fruits, estimated at around 150 g, this represents an **increase of approximately 7,200% in individual fruit weight**.

With no accessible groundwater, Ľuboš focused on capturing rainfall and improving the soil's ability to hold water. Swales slow runoff and let water soak in, while heavy mulch protects the soil from drying out. Manure from his own livestock supplies nutrients. Together, these practices support vegetable production without irrigation.



Ľuboš with a watermelon.



Watermelon harvest · 11 kg fruit reported in 2024.

The farm in pictures



Learning on the farm: visitors beside a water-retention channel.



The wider landscape around Biofarma Dubový háj.



Visit Biofarma Dubový háj to explore regenerative agroforestry in practice. Contact Ľuboš about farm visits, volunteering, food-forest advice and plans for visitor accommodation: molitorislubos@gmail.com

The farm in pictures



Mulched vegetable beds alongside the farm's swales to retain water.



Goats grazing beneath mature trees: livestock and tree cover share the landscape.



Zucchini · 2026. The farmer reports a month without rain or watering, with temperatures reaching 40 °C.



Soil beneath heavy mulch · 2026. Moisture remains visible under the reported dry conditions.



Work on a thatched roof: another part of the effort behind the farm.



Farm buildings and shared outdoor space during a visit.



Credits



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To support practical learning, REGE-FARMS case studies use an **adapted PICO model—Problem, Innovation, Comparison and Opportunity**—to connect each farm's challenges and practices with observed changes and lessons for other farmers.

REGE-FARMS helps farmers across Europe transition to regenerative agriculture through practical knowledge and tools, digital training, case studies and hands-on field days. It supports soil health, biodiversity and carbon sequestration, strengthening climate resilience and the long-term sustainability of farming systems.

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Explore more resources at rege-farms.eu: [Case studies](#) • [Infographics](#) • [Field day guide](#)

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Živá záhrada

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