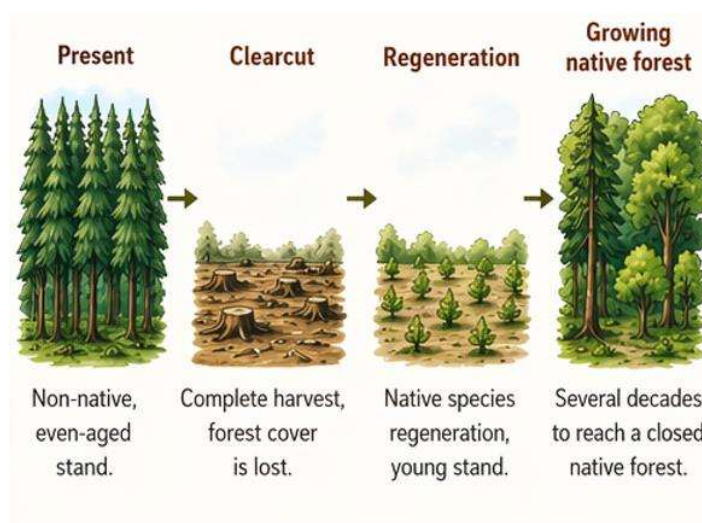


# Resilient Forest Management - feasible and profitable

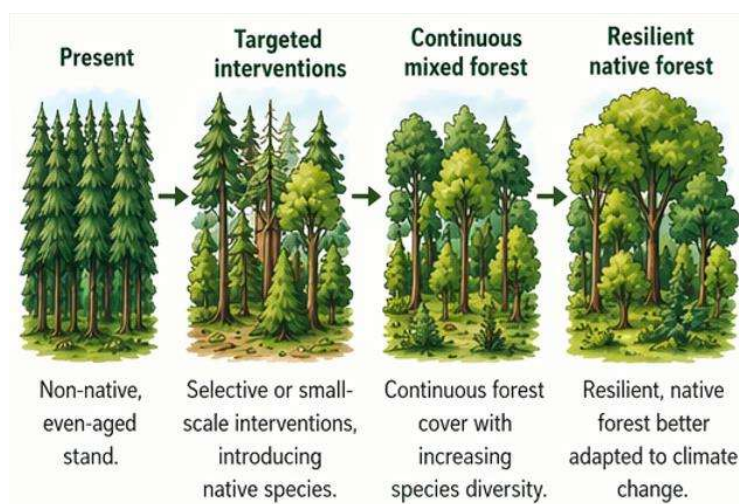
Based on the example of the municipal forests of Tök - ecological, carbon and economic outcomes

## Three analysed scenarios:

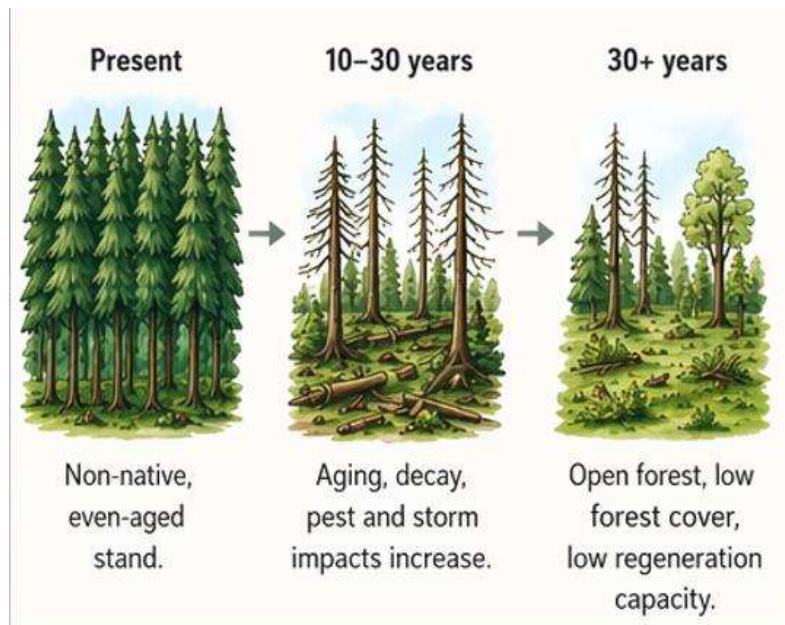
**Business As Usual (BAU):** models the steps of conventional clear-cut forestry, including the conversion from non-native to native tree species



**Management for Resilience (MfR):** models the conversion from non-native to native tree species, while maintaining continuous forest cover, in order to better adapt to climate change and meet local community expectations



**No Effective Management (NEM):** absence of effective forest management - no harvesting either - leading sooner or later to forest dieback (with increased wildfire risk), followed by a switch to BAU management

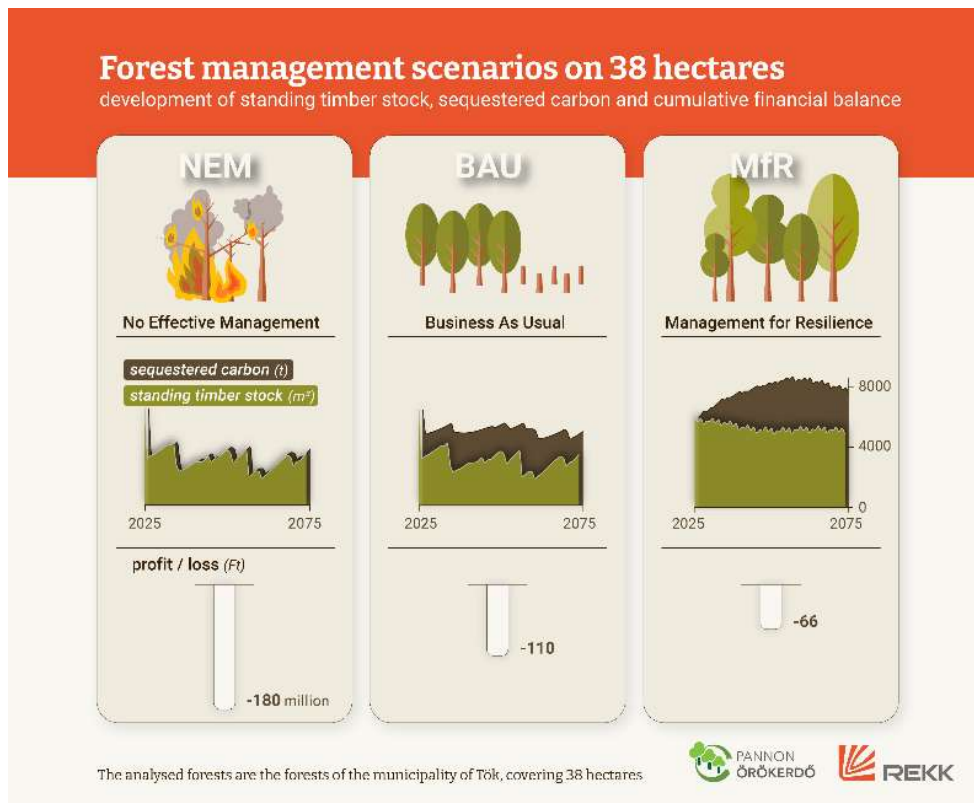


## What is the problem?

- Climate change → increasing risks (drought, wildfires, invasive species)
- ~300,000 hectares of similar forests in Hungary
- Real decision context:
  - not BAU vs. MfR, but management vs. non-management

## Key findings

MfR is the most favourable forest management scenario in all respects



The unit cost of CO<sub>2</sub> sequestration is negative, while in the EU Emissions Trading System market the value of emission reductions has been priced at 60–100 €/tCO<sub>2</sub> in recent years.



From a national economy perspective, converting unmanaged forests represents significant potential and a “no-regret” solution, yet it does not happen on its own. Beyond carbon sequestration, a range of additional social benefits also arise:

## CONTINENTAL FORESTS

A wealth of ecosystem services for people and nature

- **CLIMATE REGULATION**  
Forests absorb and store carbon dioxide and help mitigate climate change.
- **WATER REGULATION**  
They purify and retain water, reducing floods and supporting dry period flows.
- **SOIL PROTECTION**  
They protect soil from erosion, improve soil structure and maintain its fertility.
- **BIODIVERSITY CONSERVATION**  
They provide habitat for a wide range of species and support ecological processes and resilience.
- **POLLINATION**  
They support pollinators and contribute to the reproduction of wild plants and food production.
- **AIR QUALITY REGULATION**  
They filter air pollutants and produce oxygen.
- **PROTECTION FROM NATURAL HAZARDS**  
They reduce the impacts of landslides, storms, and erosion, protecting people, infrastructure and land.
- **TIMBER AND NON-TIMBER PRODUCTS**  
They provide renewable resources such as timber, firewood, mushrooms, fruits, resins and medicinal plants.
- **RECREATION AND HEALTH**  
They offer opportunities for outdoor recreation, relaxation and physical and mental well-being.
- **CULTURAL VALUES**  
They preserve cultural heritage, strengthen identity and inspire spiritual and aesthetic values.

 **HEALTHY FORESTS – A FOUNDATION FOR OUR FUTURE**  
Sustainable management of forests is essential for the well-being of society, a thriving economy and a livable planet. 



Promoting carbon-positive, sustainable, and resilient forest management requires new policy instruments that convert part of the social benefits into revenues for forest managers:

## POLICY TOOLS THAT SUPPORT RESILIENT FOREST MANAGEMENT

Enabling better decisions today for healthier forests and a stronger future

Communities benefit when forest managers are enabled by the right incentives, compensation and risk management tools.

**1**



**RESULT-BASED PAYMENTS**

Payments are linked to the achievement of verified results – such as carbon sequestration, emissions reductions or increased resilience.

**Example:**  
Payment for the amount of CO<sub>2</sub> sequestered or for resilience-building silvicultural practices.

**2**



**COMPENSATION FOR ECOSYSTEM SERVICES**

The societal benefits provided by forests – such as clean water, soil protection, biodiversity and recreation – are recognized and compensated.

**Example:**  
Compensation for watershed protection, erosion control or habitat conservation.

**3**



**RISK SHARING AND INSURANCE TOOLS**

These tools increase the certainty and resilience of active, adaptive management by reducing financial risks from wildfires, storms and forest decline.

**Example:**  
Co-financing premiums for fire insurance or establishing a risk sharing fund.

**4**



**STRONGER PRICING OF CARBON**

Stronger carbon pricing or market mechanisms enhance the role of forests in climate policy and increase the value of climate-friendly management.

**Example:**  
Development of voluntary carbon markets or integration of forests into climate policy instruments.

**KEY ENABLERS FOR SUCCESS**

-  **Predictable, long-term policy environment**  
Stable and consistent policies that support long-term forest management.
-  **Reliable monitoring and verification**  
High-quality data and transparency to ensure credibility and trust.
-  **Stable and long-term financing**  
Adequate and sustained funding to implement and scale solutions.



With the right enablers, resilient forest management can expand, delivering long-term benefits for people, nature and the economy.

Further details:

Project description on the REKK website:

<https://rekk.hu/analysis-details/389/forest-management-and-carbon-sequestration-comparative-analysis-of-the-forest-management-scenarios-of-the-tok-forest>

Article in the Journal Fatáj: A tóki erdők vizsgálata - <https://fataj.hu/2026/04/a-toki-erdok-vizsgalata/>

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