

# DIVERSE

## BIODIVERSITY-BIOENERGY TRADE-OFFS AND WIN-WINS IN MANAGED FOREST ECOSYSTEMS

### INTERMEDIATE MANAGED FOREST

Medium wood production

Less intense forest management supports a diverse mix of tree species and ages – which can support a wide variety of plant and animal species while still maintaining some bioenergy production.

**Main:** a mixed age tree stand with selective logging on the Koralpe mountain in Carinthia (AT).

**Inset:** a high diversity plant understory community in a mixed forest stand in western Styria (AT).



### INTENSIVE MANAGED FOREST

High wood production

Intensive forest management supports high bioenergy yields in the short-term, but can lead to declines in long-term forest biodiversity and ecological stability.

**Main:** a Norway Spruce monoculture with bark beetle damage near Winklern, Carinthia (AT).

**Inset:** a recently planted forest plantation in St. Steffan, Styria (AT). Low diversity in tree species and age structure significantly increases the risk of pest outbreaks, and makes it more difficult for more than a few kinds of animals and plants to coexist.

FOREST  
MANAGEMENT

### LOW-INTENSITY MANAGED FOREST

Low wood production

In much of central Europe, very low forest management intensity can lead to dense deciduous forest stands, with relatively low bioenergy production.

These forests can harbor many rare, threatened, and endemic species, though total plant diversity is often lower than with moderate management, as slow-growing, shade tolerate species come to out-compete other kinds of trees and shrubs.

**Main:** An unmanaged Red Beech forest in a natural preserve in Deutschlandsberg, Styria (AT).

**Inset:** Orchid (*Neottia nidus-avis*) in the unmanaged forest's understory.

### DIVERSITY TREE

CONTENT AND PICTURES BY  
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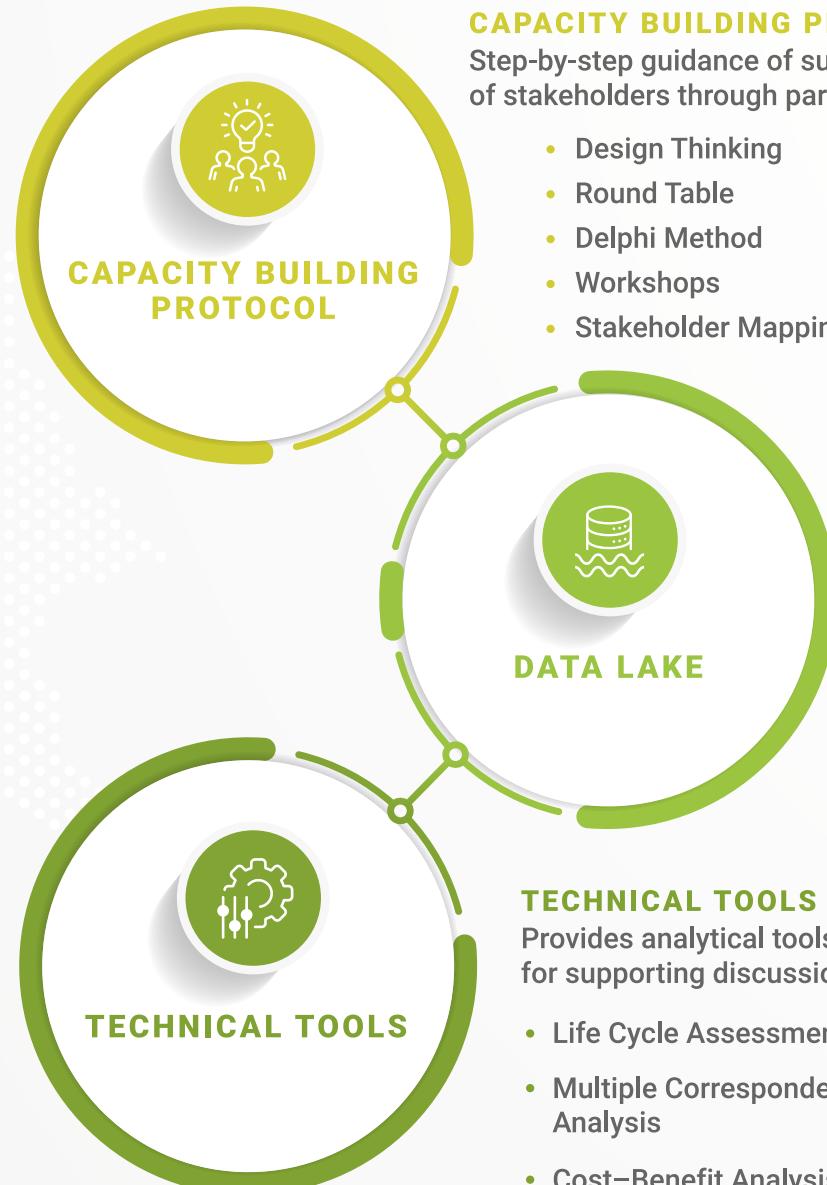
# DIVERSE OPEN DIALOGUE TOOLKIT



## PILOT REGIONS

Launching Focus Labs for bioenergy.

- 📍 Styria (AT)
- 📍 Auvergne-Rhône-Alpes (FR)
- 📍 Bavaria (DE)
- 📍 Ljubljana Marshes (SI)
- 📍 Lombardy (IT)
- 📍 Veneto (IT)
- 📍 Piedmont (IT)



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## CAPACITY BUILDING PROTOCOL

Step-by-step guidance of supporting the engagement of stakeholders through participative methodologies.

- Design Thinking
- Round Table
- Delphi Method
- Workshops
- Stakeholder Mapping



## DATA LAKE

Comprehensive platform for collecting and analysing bioenergy from residual biomass and biodiversity data in 7 pilot regions.



## TECHNICAL TOOLS

Provides analytical tools that can be used for supporting discussions and informed decision-making.

- Life Cycle Assessment
- Multiple Correspondence Analysis
- Cost-Benefit Analysis



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## COMMITMENT PROTOCOL AND ASSOCIATED STAKEHOLDERS

