



FIG Working Week 2024

19-24 May

Accra, Ghana

Your World, Our World:
Resilient Environment
and Sustainable
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for All

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19-24 May 2024 in Accra, Ghana

Current planning practices for implementing Nature-based Solutions in rural development projects in Poland and Ukraine

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Introduction

Mid-field trees are one of the **critical elements** of Nature-based Solutions (NbSs) in rural areas

NbSs are essential to rural landscapes, determining their resilience to climate change (especially drought)

The aim: to show the significance of spatial planning and land management instruments (e.g., land consolidation) for enabling the development of a network of field trees as an element of NbSs in rural areas. Reference was made to the current planning practices applied, with regard to field trees and field shrubs in Poland and Ukraine

What is the possible **role of surveyors** in this respect?

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Mid field trees – forms, functions, and current needs



Mid-field trees provide a range of **ecosystem services**:

- **provisioning services:** providing food, raw materials and medicines
- **regulating and supporting services:** effects on microclimate, water retention, carbon sequestration, effects on biodiversity growth
- **cultural services:** impact on human health and mental well-being, trees are an important component of the landscape heritage

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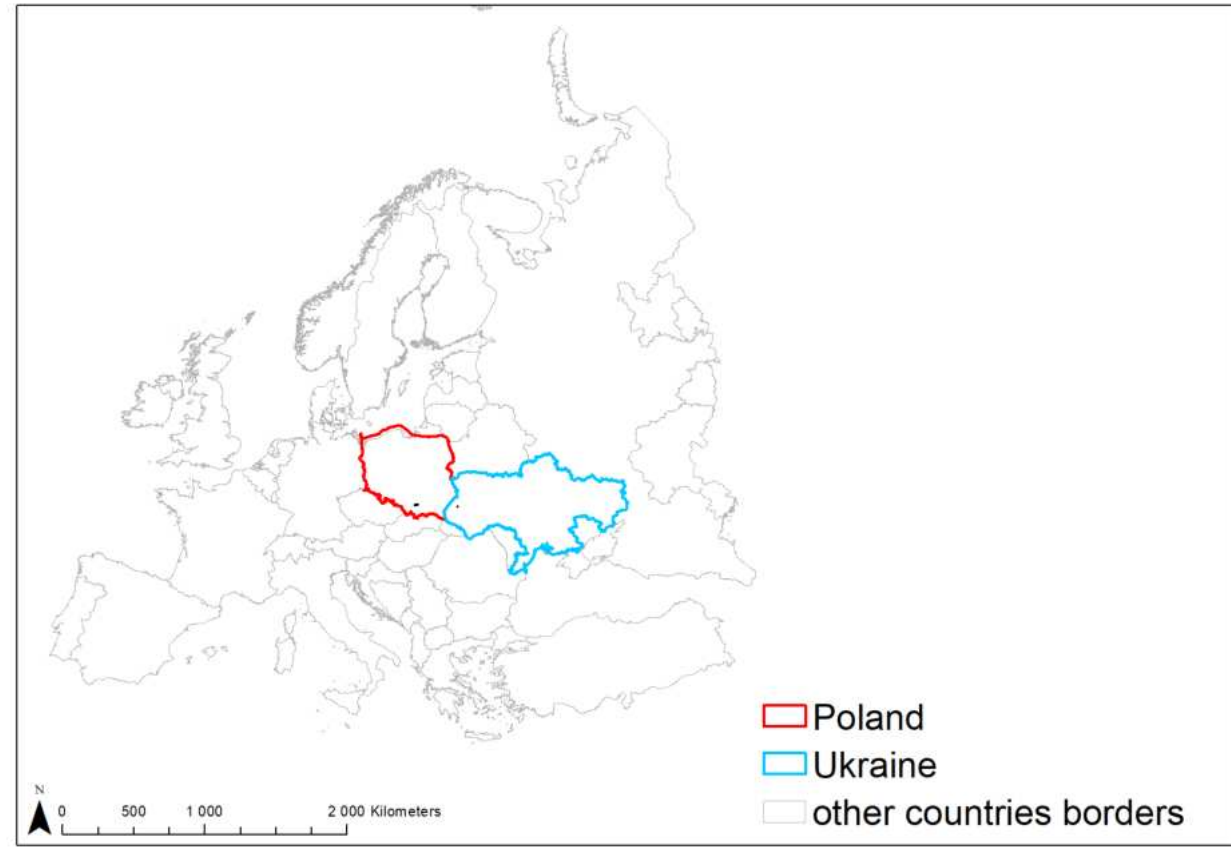
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Rural areas in Poland and Ukraine



Poland

country's area – 31,4 million ha
agricultural lands – 60 % of the territory of the country
half of it constitutes unique habitats

Ukraine

country's area – 60,3 million ha
agricultural lands – 70% of the total country's area
8% of the world's reserves of black earth (the most fertile soil in the world)

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The rich tradition of protective afforestation in Ukraine



Fig. System of the shelterbelts at the farm "Udarnyk" Lutugin district Lugansk region (Source: <https://euraf.isa.utl.pt/countries/ukraine>)

A unique heritage of traditional windbreak systems with a high environmental, economic, and cultural potential. Spatial differentiation of the occurrence of the protective planting

The total area of windbreaks is about 446,7 thousand ha (1,5% of arable land). They protect 13 million hectares of arable land

The poor condition of existing shelterbelts because of the lack of conservation and maintenance

For reliable protection of the agricultural landscape the area of protective tree-planting should increase 2-3 times



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Diversified spatial structure of rural areas in Poland





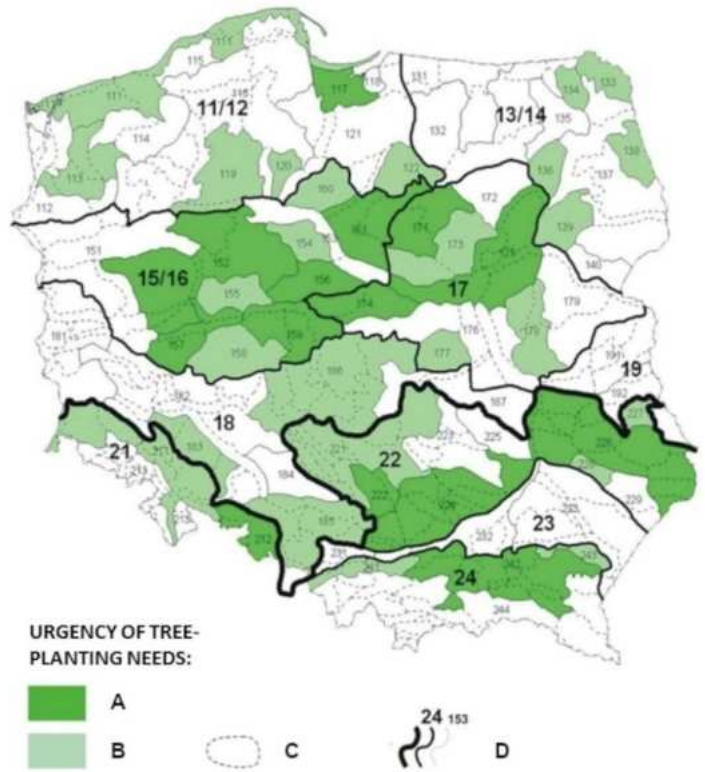
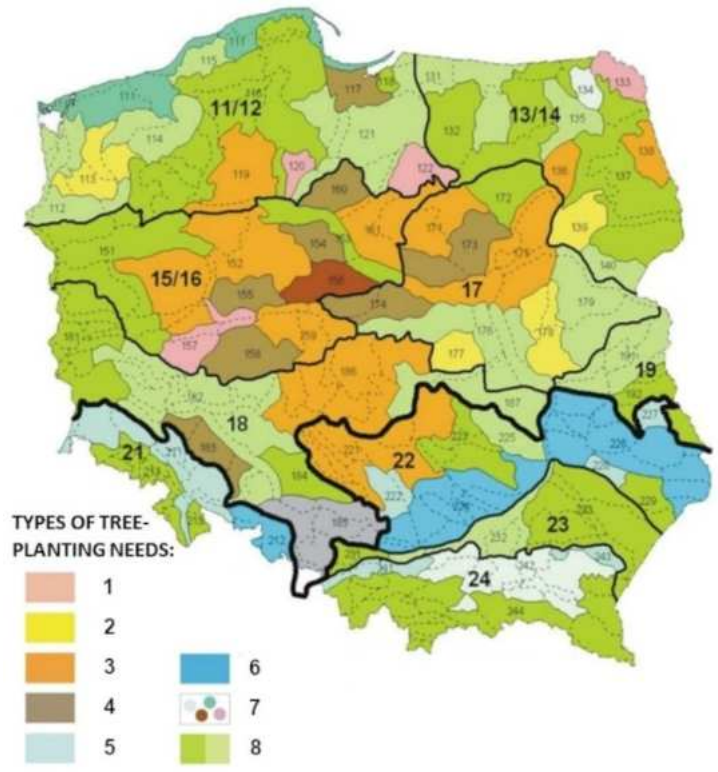
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Regionalisation of afforestation needs in Poland



1. Improvement of hydrological conditions
2. Reduction of wind erosion
3. Improvement of hydrological conditions and reduction of wind erosion
4. Improvement of hydrological and biocenosis conditions
5. Water erosion prevention
6. Water and wind erosion prevention
7. Other needs
8. Low afforestation needs due to increased resilience and low environmental risk

- A. Very urgent tree-planting needs
- B. Urgent tree-planting needs
- C. Physical and geographical regions
- D. Boundaries and numbers of lands, and arboreal districts

Source: Zajączkowski, 2005



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New opportunities for the introduction of NbSs in Poland

Strategic Plan for the Common Agricultural Policy 2023-2027, which, under intervention I.10.8 "Land consolidation with post-consolidation development", provides project selection criteria concerning, in particular:

1. Investments contributing to water retention on agricultural land increase, such as small-scale water retention, including creating or restoring mid-field ponds, wetlands, or small water reservoirs.
2. Investments containing nature conservation and environmental protection measures, such as preserving vegetated slopes, **preserving or delimiting shrubbery or mid-field shelterbelts**, and delimiting buffer zones or field-forest borders.

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The new approach to LC and NbSs in Ukraine in need

1. Since 1991, land reform has been going on in Ukraine. The lands of **almost 12,000** socialist collective farms were reformed, and **6.77 million** peasants acquired land rights. It resulted in the problem of land fragmentation - **more than six million owners of plots of 1-4 ha** have emerged.

2. There is a current need to introduce a modern and effective LC mechanism in Ukraine. New legal solutions should ensure the adaptation of the land use system to climate change, including the replenishment of shelterbelts as NbS elements.

3. In 2020 the **'Principles of Maintenance and Preservation of Shelterbelts on Rural Land'** were approved. It is planned to digitize those spatial structures in order to monitor their condition. Active work on the registration of protective afforestation in the State Land Cadastre is underway.

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Conclusions - Poland

The process of land consolidation became an essential tool for the introduction of NbSs in Poland

"Land consolidation with post-consolidation development" intervention implemented within the Strategic Plan for the Common Agricultural Policy 2023-2027 framework seems to be the new opportunity in this respect

Strategic planning of mid-field afforestation, as an element of the NbSs, should include the development of a mid-field trees study as a component of the Municipality's Rural Development Plan

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Conclusions - Ukraine

New possibilities for shelterbelt network replenishment occurred in 2020 when the new legal solutions were approved. The digitalization and registration of protective afforestation in Land Cadastre have started

The introduction of a modern and effective LC mechanism in Ukraine should ensure the adaptation of the land use system to climate change - the opportunity to undertake the replenishment of shelterbelts as NbSs elements

The surveyors' role in this process could be crucial





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SUSTAINABLE DEVELOPMENT GOALS

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Commission 8

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