Fundatia ADEPT Transilvania

Biodiversity Conservation and Rural Development
in South -East Transylvania, România



Ecological connectivity and agriculture – *opportunity or restriction?*

Fundatia ADEPT Transilvania, case study - Romania

SaveGREEN Final Conference

6 - 7 december 2022; Vienna

Răzvan Popa; ADEPT Foundation

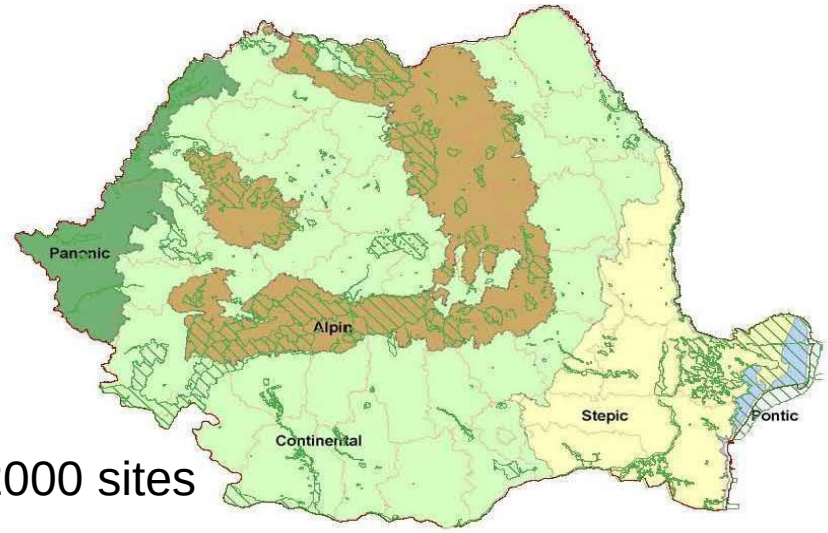
ADEPT's Vision

Târnava Mare is a landscape of inspiration, known for its beauty, high biodiversity and cultural values, maintained by a thriving local economy which is based on sustainable use of natural resources and local enterprises, which offer high quality experiences for locals and visitors alike.

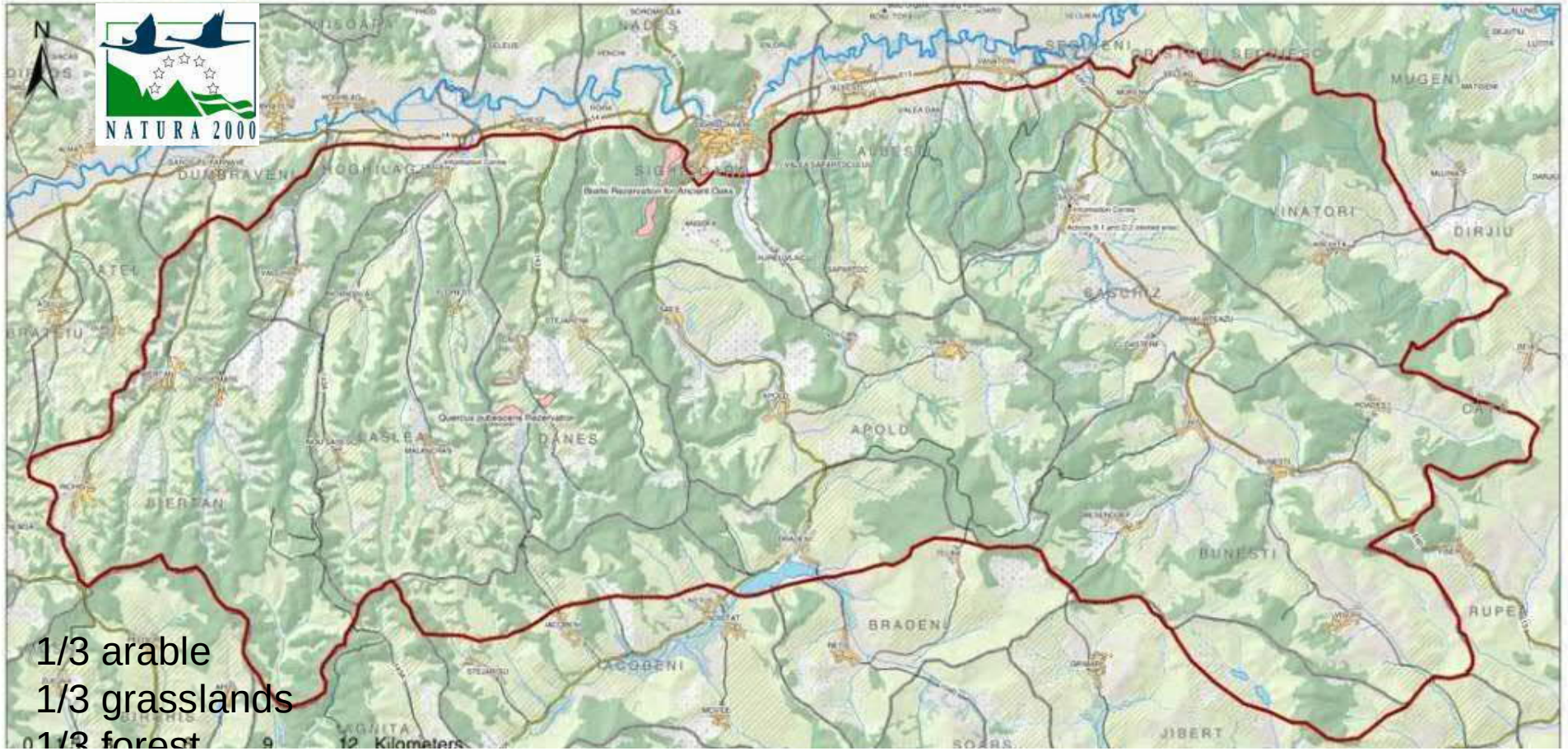
Our Mission

To protect the High Nature Value Farmed Landscapes of Transylvania, working with and supporting the small-scale farming communities that created them.

Târnava-Mare, a lowland area of high biodiversity, 85,000ha farmed by 5000 families in small-scale farming communities



.. one of Romania's largest farmland SCI/Natura 2000 sites



Some of the most important High Nature Value wildflower-rich lowland grasslands in Europe …

…with associated wildlife of European importance

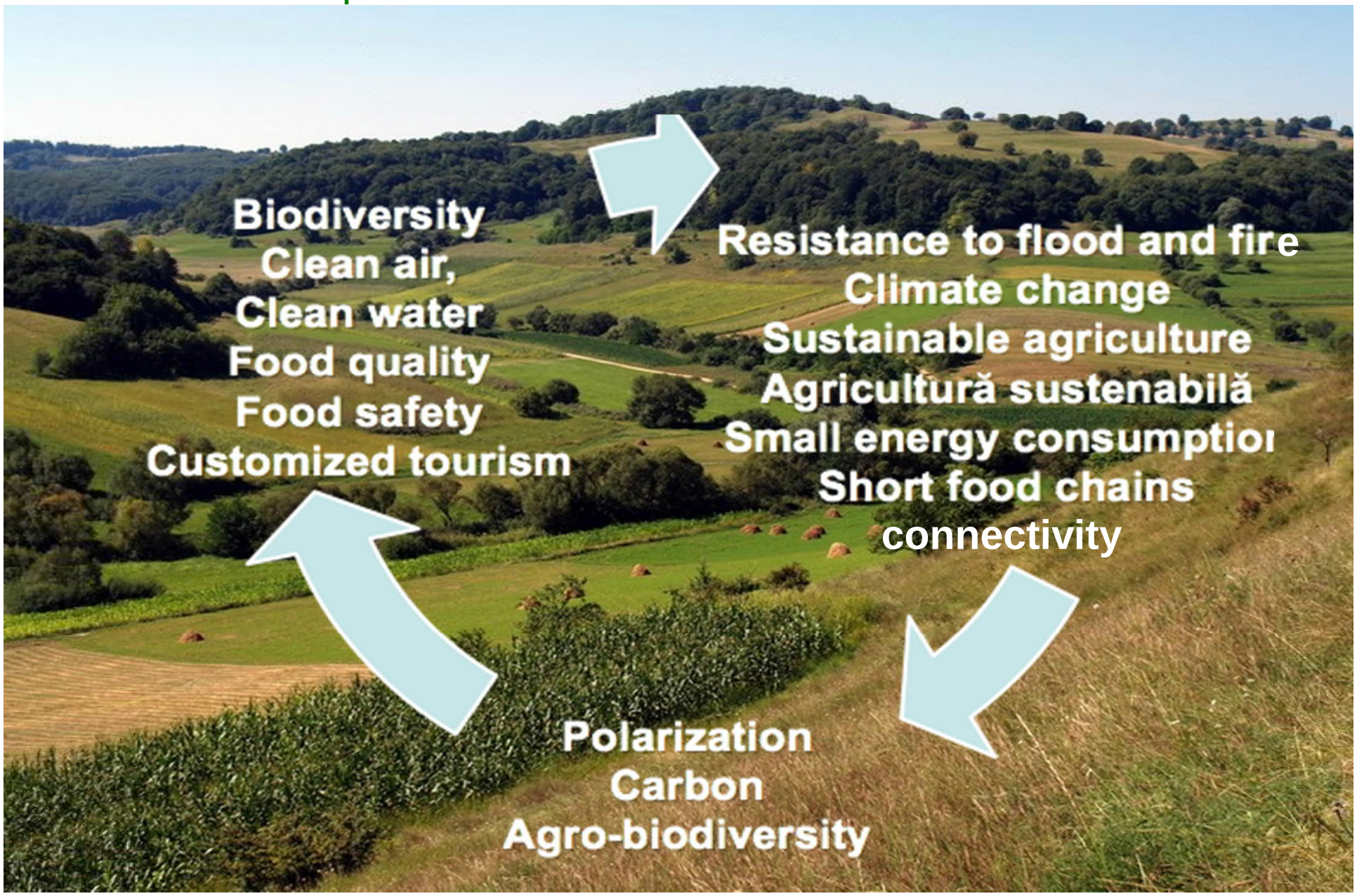
HNV landscape is also a living economic landscape

- is agricultural land associated with high species and habitat diversity
- is managed traditionally and/or extensively and is strongly associated with Europe's poorer areas and with semi-subsistence farming
- presence of natural and semi-natural vegetation (grasslands), integrated into a large scale continuous mosaic landscape that provides broad environmental benefits

Cultural landscape

... lying at the heart of the Saxon Villages area

Why are HNV Landscapes so important?
For the public benefits and added economical value



High biodiversity conservation needs informed farmers and ”sexy” AE measures that are responding to detailed biodiversity needs

Tab. 2: Some EU Habitats Directive habitats typically found in Romania's HNV farmland areas

Code	Name
40A0*	Sub-continental Peripannonic scrub
6210*	Semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*) with important orchid sites
6230*	Mountain pastures with *Nardus*
6240*	Sub-Pannonic steppic grasslands
62C0*	Ponto-sarmatic steppes
6410	Molinea meadows
6430	Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels
6510	Lowland hay meadows (*Alopecarus pratensis*, *Sanguisorba officinalis*)
6520	Mountain hay meadows

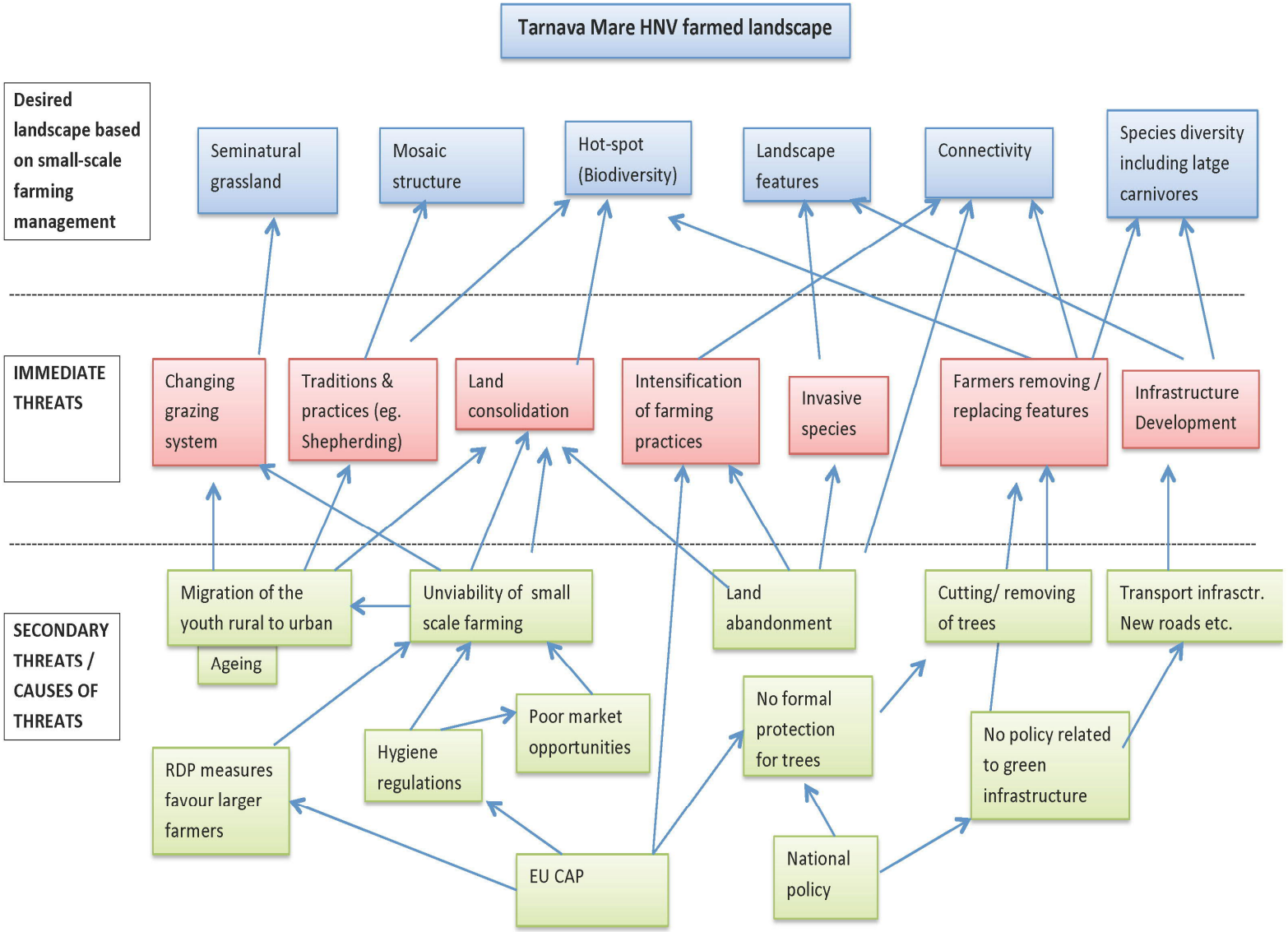
Tab. 4: Some EU Birds Directive species typically found in Romania's HNV farmland areas

Species	Species
Aquila pomarina (lesser spotted eagle)	*Crex crex* (corncrake)
Aquila chrysaetos (golden eagle)	*Picus canus* (grey-headed woodpecker)
Circaetus gallicus (short-toed eagle)	*Lanius collurio* (red-backed shrike)
Circus aeruginosus (western marsh harrier)	*Lanius minor* (lesser grey shrike)
Circus cyaneus (hen harrier)	*Lullula arborea* (woodlark)
Falco vespertinus (red-footed falcon)	*Anthus campestris* (tawny pipit)
Pernis apivorus (European honey buzzard)	*Caprimulgus europaeus* (European nightjar)
Bubo bubo (Eurasian eagle owl)	*Tringa glareola* (wood sandpiper)
Ciconia ciconia (white stork)	*Philomachus pugnax* (ruff)
Ciconia nigra (black stork)	*Branta ruficollis* (red-breasted goose)

Tab. 3: Some EU Habitats Directive and Berne Convention animal and plant species typically found in Romania's HNV farmland areas

Group	Species	Group	Species
Plants	*Echium russicum*	Lepidoptera	*Callimorpha quadripunctaria* (*Jersey tiger moth*)*
	Crambe tataria		*Catopta thrips*
	Cypripedium calceolus		*Eriogaster catax*
	Angelica palustris		*Euphydryas aurinia* (*marsh fritillary*)
	Iris aphylla		*Euphydryas maturna* (*scarce fritillary*)
	Adenophora liliifolia		*Leptidea morsei* (*Fenton's wood white*)
Also:	*Cephalaria radiata* (*endemic*)		*Lycaena dispar* (*large copper*)
	Salvia transsylvanica (*end.*)		*Maculinea teleius* (*scarce large blue*).
Mammals	*Ursus arctos* *	**Lepidoptera species protected under Berne Convention**	
	Lutra lutra		*Proserpinus proserpina*
	Myotis myotis		*Maculinea arion* (large blue)
	Barbastella barbastellus		*Aricia eumedon* (geranium argus)
Reptiles	*Lacerta agilis*		*Brenthis ino* (lesser marbled fritillary)
	Natrix natrix		*Brenthis daphne* (marbled fritillary)
	Emys orbicularis		*Brenthis euphrosyne* (pearl bordered fritillary)
Amphibia	*Triturus cristatus*		*Lycaena alciphron* (purple shot copper)
	Rana dalmatina		*Lycaena helle* (violet copper)
	Bombina variegata		*Maculinea alcon* (alcon blue)
	Rana temporaria		*Plebeius argus* (silver studded blue).

Threats


Tarnava Mare HNV farmed landscape
Desired landscape based on small-scale farming management
Seminatural grassland
Mosaic structure
Hot-spot (Biodiversity)
Landscape features
Connectivity
Species diversity including latge carnivores
IMMEDIATE THREATS
Changing grazing system
Traditions & practices (eg. Shepherding)
Land consolidation
Intensification of farming practices
Invasive species
Farmers removing / replacing features
Infrastructure Development
SECONDARY THREATS / CAUSES OF THREATS
Migration of the youth rural to urban
Ageing
Unviability of small scale farming
Land abandonment
Cutting/ removing of trees
Transport infrasctr. New roads etc.
RDP measures favour larger farmers
Hygiene regulations
Poor market opportunities
No formal protection for trees
No policy related to green infrastructure
EU CAP
National policy

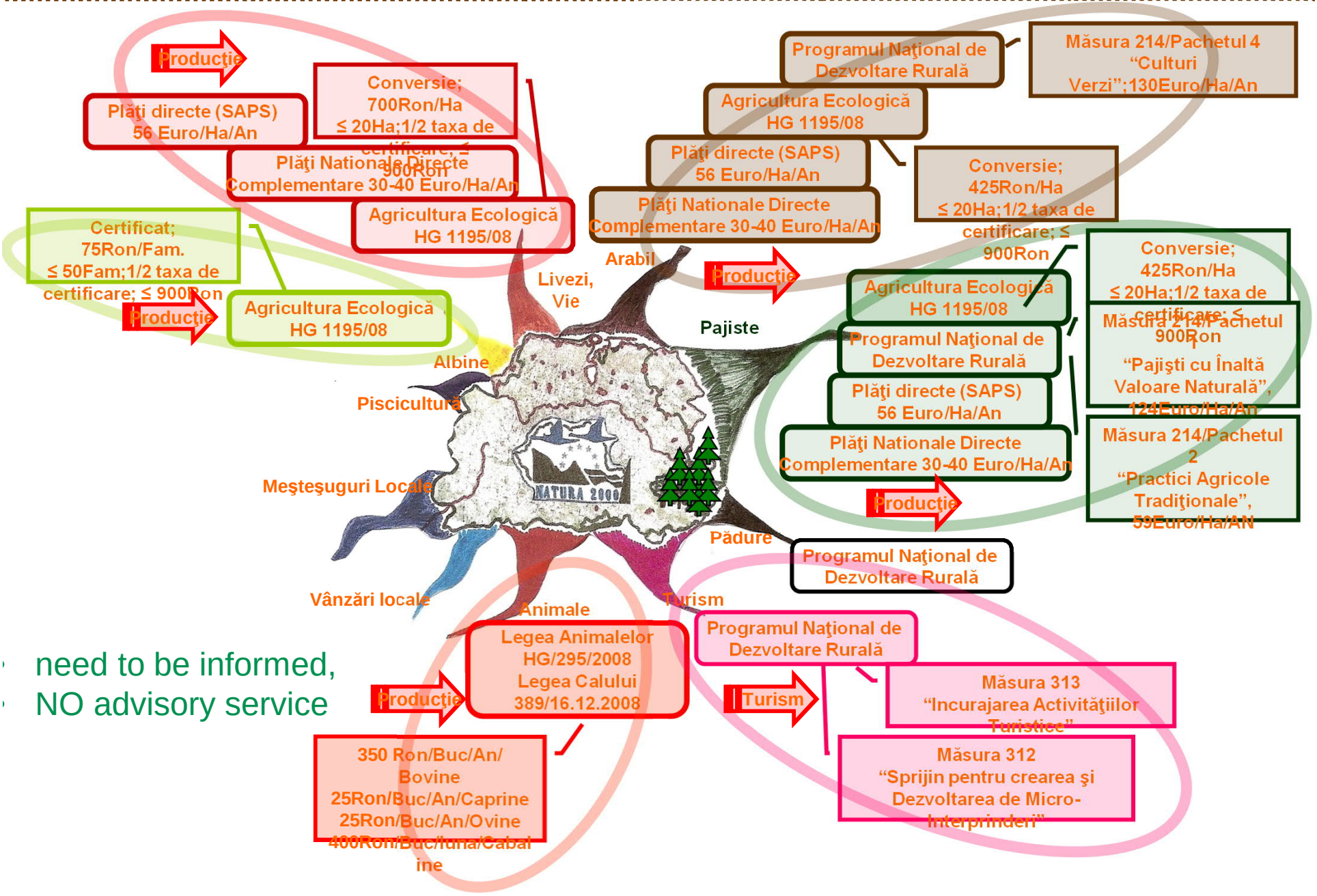
Challenges

in farmed, semi-natural lanscapes, survival of biodiversity depends on continued management by local people

Traditional land management in the area longer offers a livelihood to small-scale farmers:

- breakdown in markets,
- competition from imports,
- additional burden of EU hygiene regulations,
- are not represented by Farmers Associations,
- collapse of cow numbers (25% in 2 years),
- abandonment of mowing on 50% of hay meadows,
- loss of traditional management,
- LOSS OF PUBLIC GOODS,
- village abandonment,
- complicated and non-flexible AE & RD policy,
- weak marketing and branding policies,
- weak awareness raising.

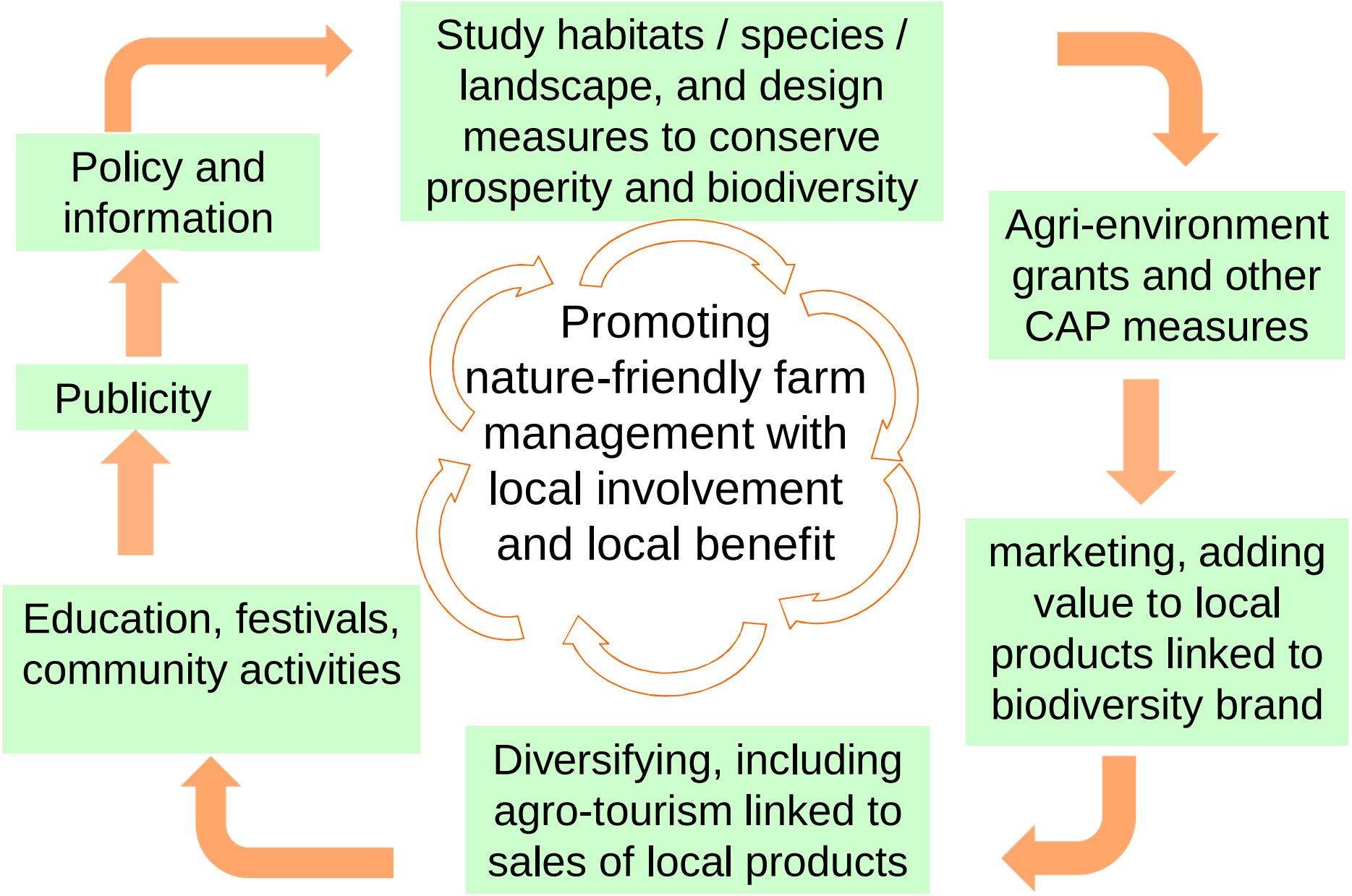
Măsura 121	Măsura 112	Măsura 142	Măsura 123	Măsura 141
Modernizarea Exploataţilor Agricole	Instalarea Tinerilor Fermieri	Înfiinţarea Grupurilor de Producători	Prelucrare Industria Alimentară	Fermele de semisubzistenţă



- need to be informed,
- NO advisory service

How to promote economic development that sustains and does not undermine biodiversity?

How can we give a future to these landscapes and their communities?



Rural Development interventions

- Access to local, national & international markets

- Developing new local products and services

- New Smartphone apps

- Local products only

- Local branding for products and services

- SMS system

- Turism

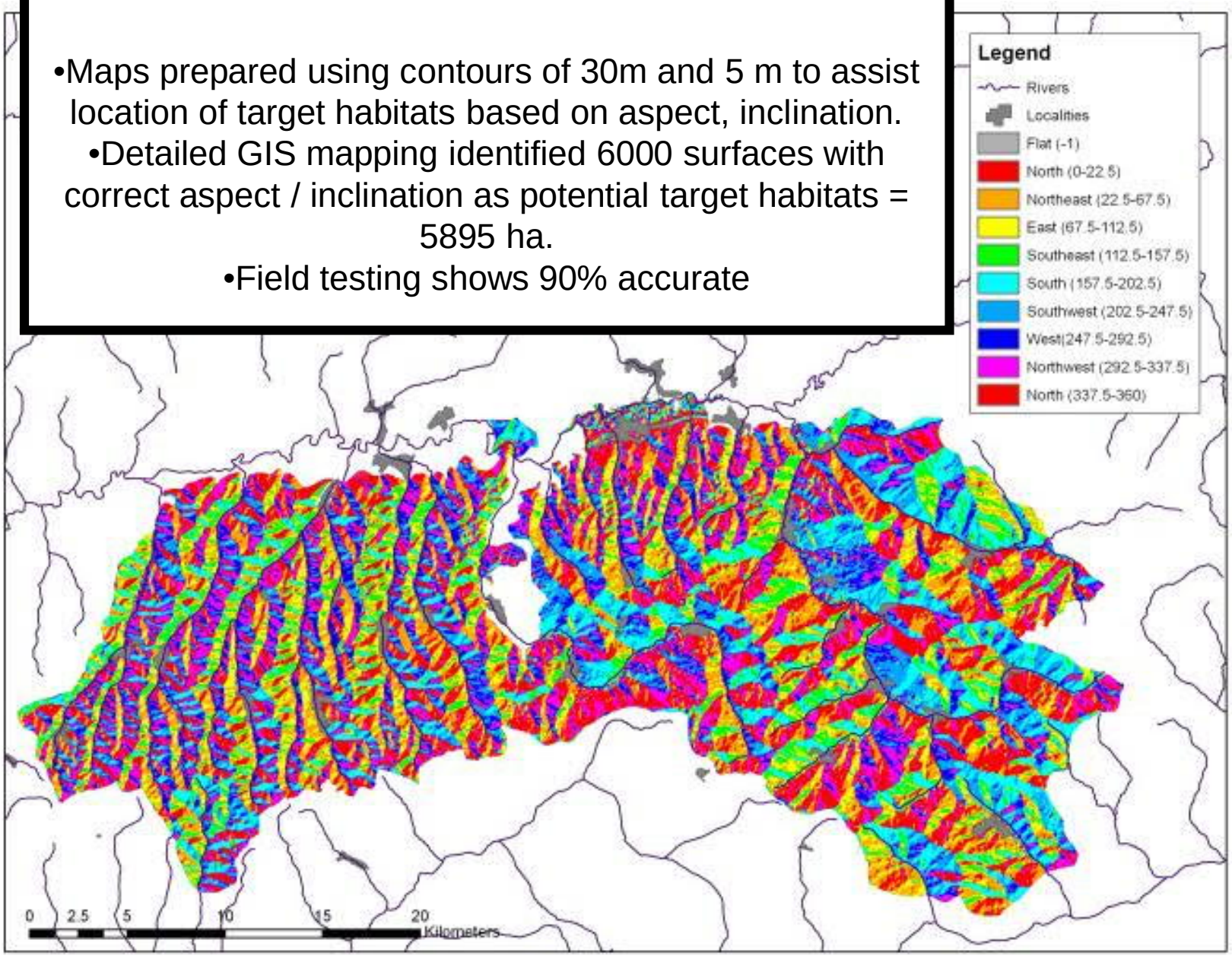
- Farmers associations

- Branding regions&products

- Direct marketing/ building 100km bicycle routs

Innovative mapping system

•Maps prepared using contours of 30m and 5 m to assist location of target habitats based on aspect, inclination.
•Detailed GIS mapping identified 6000 surfaces with correct aspect / inclination as potential target habitats = 5895 ha.
•Field testing shows 90% accurate

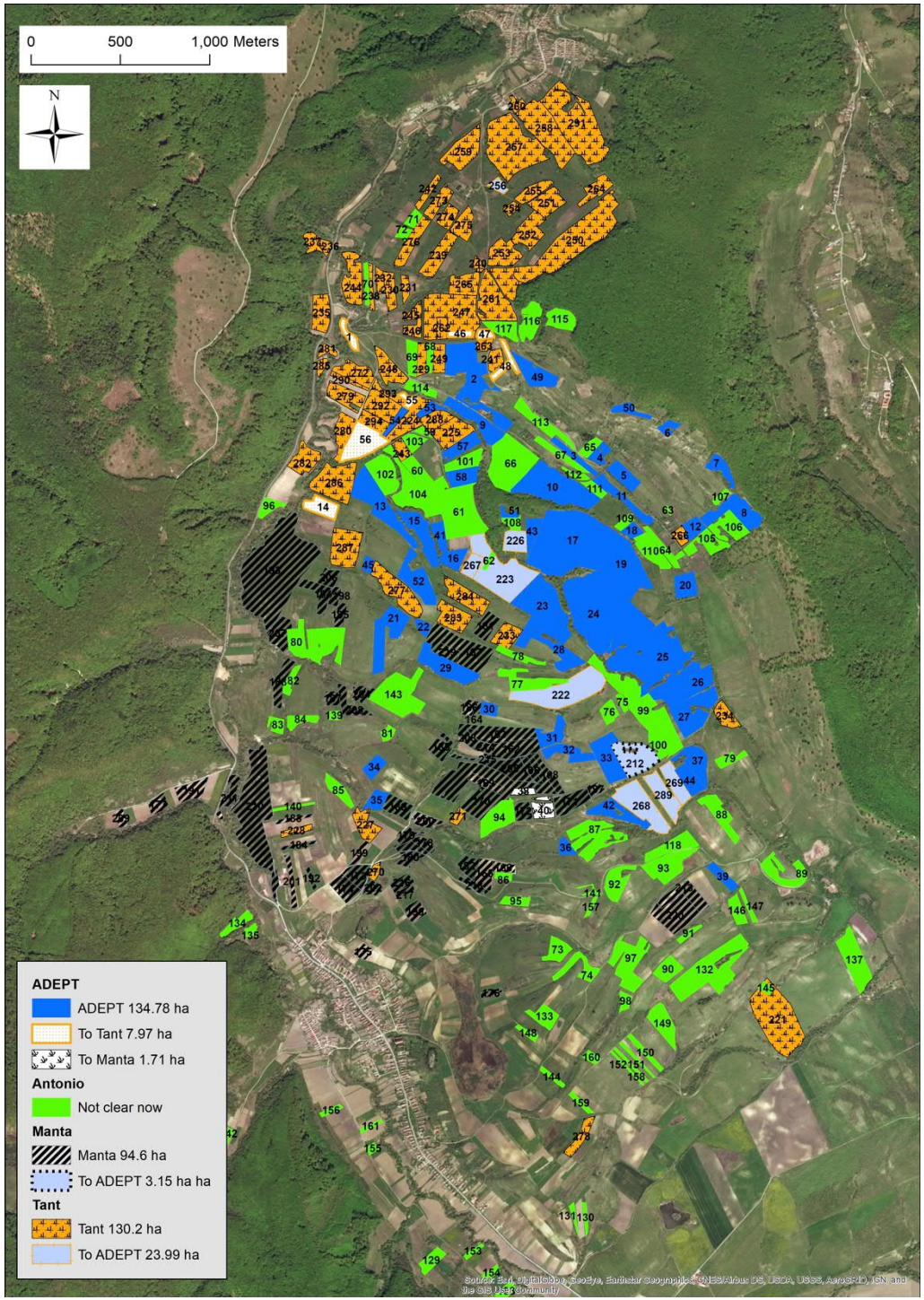


Building strong partnerships with

- **Farmers / producers** are the key partners: only they can manage a landscape this size. ADEPT farm advisers worked with individual farmers, farm associations, and **Local Action Group** for 2-way information channels
- **Funders**
- **Universities and Research Institute**
  - biodiversity specialists – area species-rich, to their surprise
  - mapping / GIS specialists enabling landscape-scale inventory
  - agriculture specialists to advise on practical management measures.
- Final link was **private sector and businees,** innovative equipment made large-scale restoration possible.
- Important parallel links established with **Ministries and Commission**
- DG Agri (agri-environment, rural development approach) and DG Environment (LIFE+ Nature, biodiversity approach)

Involvement in strong partnerships

- member in national and EU associations/confederation,
- member in the Monitoring Committee,
- partnership with Universities,
- partnership with Research Institutes,
- partnership with the local LAG,
- member in WG (env.; agr; policy development etc),
- partnership with local and national authorities (MADR, MM, APIA etc),
- partnership with local organizations,
- member in Farmers Associations,
- partnership with the local businesses,
- **RO NSP Coalition** (WWF, ADEPT, Milvus, Ecoruralis, RomApis)



ANGOFA
Grazing beef farm, collaboration at landscape level - demonstrative farm

- 65 Angus
- 213 hectare Land (grassland) +hotspots
- renovating Old school – training center for farmers and children
- management Plan for the farm
- farm Association – Landowners
- two different AE package/M10
- Agro – biodiversity
- Core funding.

Life TransilvaCOOP
- in 2 villages Angofa and Viscri

- aprox: 800ha/region

- **Angofa:** big farmers (more then 100ha)
- **Viscri:** Small farmers association.

231ha proprety but only 153ha under AE payments

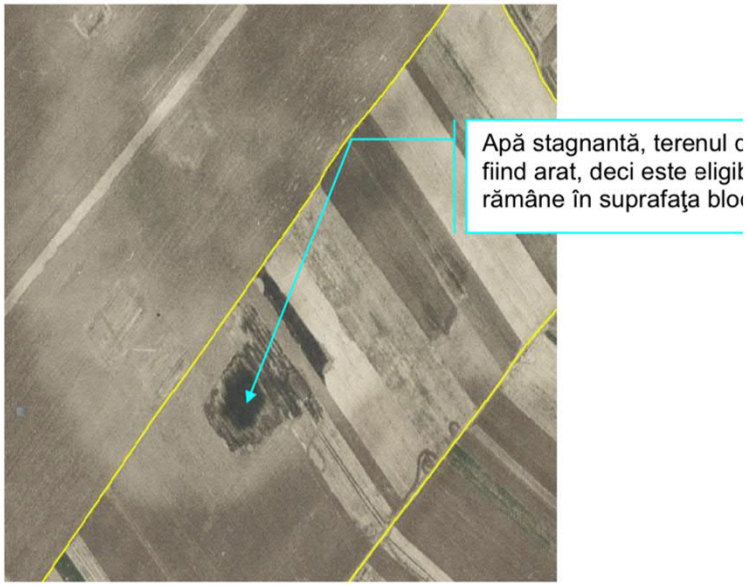
Loss of: agrobiodiversity, solitaire trees (shadow), scrub, temporar water patches, old oak trees (woodpasture), marginal areas etc.

Why are we loosing landscape connectivity - landscape features (LF)?

- **National Strategic Plan (NSP) – Land Parcel Information System (LPIS)** part of Integrated Administration and Control System (IACS)

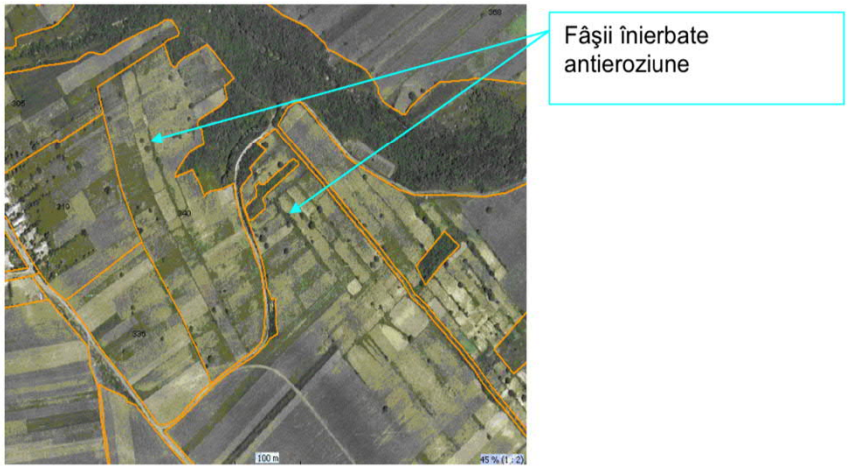
Physical block:
An area of land used for agricultural purposes by one or several farmers, with stable natural or artificial linear boundaries, may include one or more agricultural parcels.
The physical block is uniquely identified in the geographical information system and is the parcel of reference parcel adopted in the LPIS in Romania.

Bălţile mai mici de 0.1 ha sunt de obicei nepermanente şi nu se exclud din suprafaţa blocului fizic. Dacă nu se afla în interiorul blocului fizic ci la margine lui şi par a fi permanente (în functie de vegetatia din jur) nu sunt eligibile şi vor fi separate ca poligoane de tip NA.



Exemplul nr. 6. Blocuri fizice BA cu TA şi bălţi rezultate în urma plo

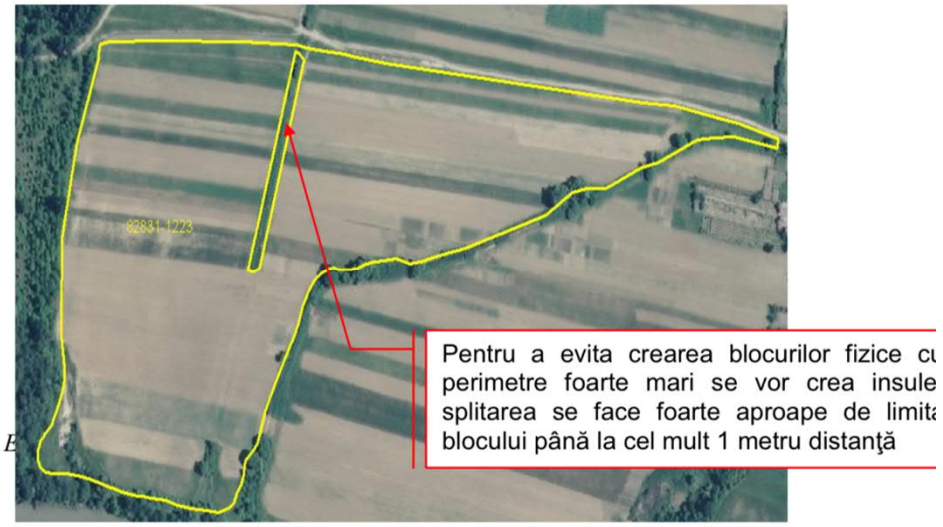
Fâşiile de iarbă anti-eroziune fac parte din blocul fizic.



Exemplul nr. 4. Blocuri fizice BA cu fâşii înierbate

GAEC

- 100 trees
- 100m scrub, not more then 30%



Why are we loosing landscape connectivity - landscape features (LF)?

- **Corrine** – do not cover all classes

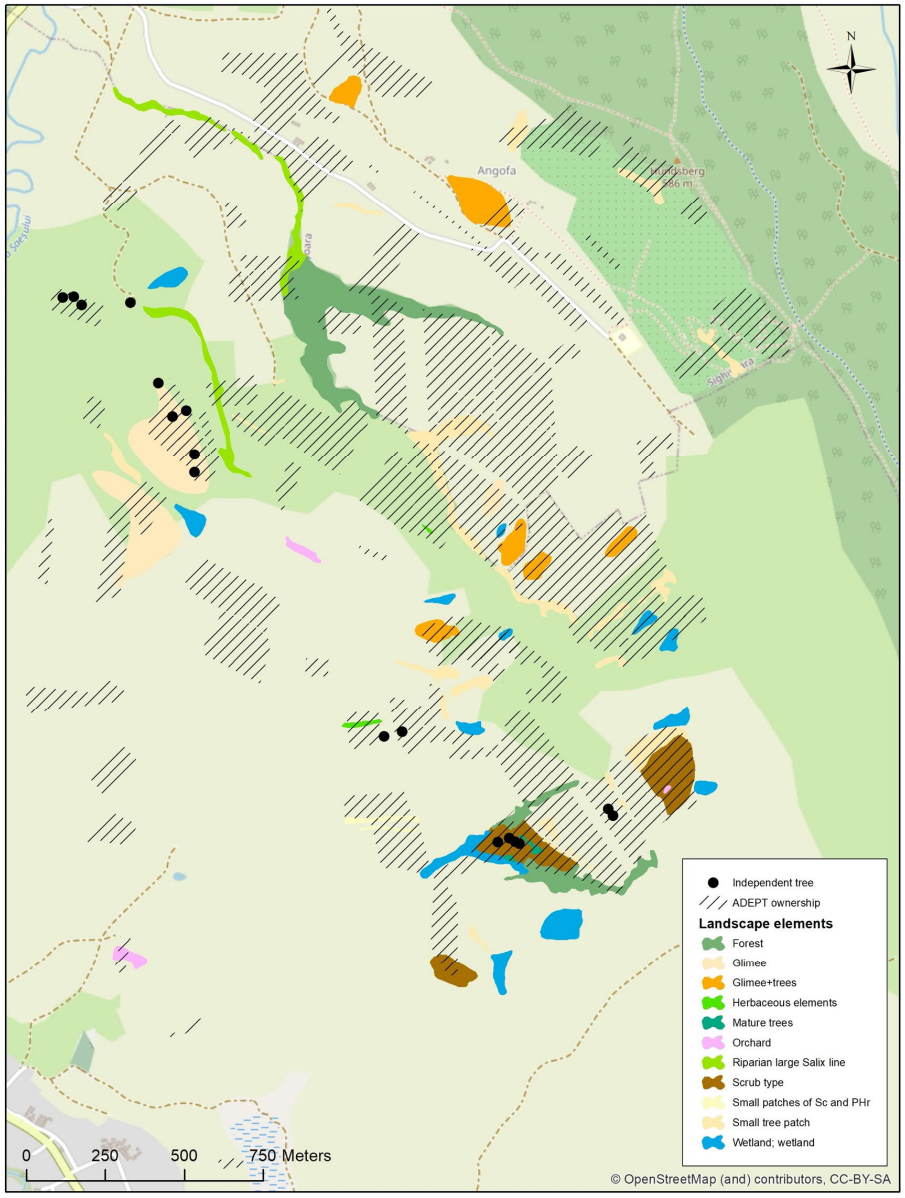
Table 1 – CORINE Land Cover (CLC) nomenclature (Source: http://www.igeo.pt/gdr/pdf/CLC2006_nomenclature_addendum.pdf).

Level 1	Level 2	Level 3
1 Artificial surfaces	11 Urban fabric	111 Continuous urban fabric
		112 Discontinuous urban fabric
	12 Industrial, commercial and transport units	121 Industrial or commercial units
		122 Road and rail networks and associated land
		123 Port areas
		124 Airports
	13 Mine, dump and construction sites	131 Mineral extraction sites
		132 Dump sites
		133 Construction sites
	14 Artificial, non-agricultural vegetated areas	141 Green urban areas
		142 Sport and leisure facilities
2 Agricultural areas	21 Arable land	211 Non-irrigated arable land
		212 Permanently irrigated land
		213 Rice fields
	22 Permanent crops	221 Vineyards
		222 Fruit trees and berry plantations
		223 Olive groves
	23 Pastures	231 Pastures
	24 Heterogeneous agricultural areas	241 Annual crops associated with permanent crops
		242 Complex cultivation patterns
		243 Land principally occupied by agriculture, with significant areas of natural vegetation
		244 Agro-forestry areas
3 Forest and semi natural areas	31 Forests	311 Broad-leaved forest
		312 Coniferous forest
		313 Mixed forest
	32 Scrub and/or herbaceous vegetation associations	321 Natural grasslands
		322 Moors and heathland
		323 Sclerophyllous vegetation
		324 Transitional woodland-shrub
	33 Open spaces with little or no vegetation	331 Beaches, dunes, sands
		332 Bare rocks
		333 Sparsely vegetated areas
		334 Burnt areas
		335 Glaciers and perpetual snow

www.land.copernicus.eu

Why are we loosing landscape connectivity - landscape features (LF)?

- **no monitoring of LF in the Natura 2000 sites**



Case Study

- detailed monitoring of LF,
- locally,
- collaboration with the neighbours.

Life TransilvaCOOP

need for local management plans?

Why are we loosing landscape connectivity - landscape features (LF)?

- **lack of awarness raising** between farmers, farmers associations and local authorities,
- more **loss of LF in hilly** areas?
- **lack of clear legislation** /implementation methodology – grassland law, Pastoral planning at commune level,
- **no compensatory payments** for farmers,
- **intensive agriculture,**
- **more efficient and larger agricultural machinery,**
- **access to land** – more attractive,
- **not included** in NSP SWOT, PAF etc
- **loss of about 600.000 small farms** since 2007 - loss of mosaic structures,
- **no NSP measures for green infrastructure**:protective green curtains, strips of hedgerows e.tc),
- need for a **more detailed landscape features list**, to add: cairns, ditches, small ponds, small wetlands and stonewalls not only terraces, hedges and group/rows of trees
- Land consolidation
- Multistakeholder approach

How can we keep connectivity in the romanian landscape?

- planning connectivity at national level – SaveGREEN + at phisical block level (LPIS),
- introducing data in local strategies at local, regional and national level (inventoring of landscape features)
- changing and/or promoting to farmers the paying agency control procedures
- finding compensatory payments: AE?, Carbon farming, N2K payments
- awarness raising between farmers about the importance of connectivity (green infrastructure) – proving ecosistem services
- local managent plans – Life TransCOOP
- developing new AE measure or policies– ex: polinators AE package (10-15% scrub cover/ha), eco schemes,

! Hartibaciului Valley – conflict between local communities, access to land

How can we keep connectivity in the romanian landscape?

- **support of small farms**

loss of small farms =
loss of mosaic structures

Farm size:

Total number of farms in Romania. 3.4mil.,

- 2.45 mil. farms (72%) under 2 ha (manage 12.24% din UAA),
- 91.8% farms 1- 5 ha (28,7% from UAA),
- 7.7% from the farms manage 5 – 50ha,
- 0.17% from the farms manage 50 – 100ha,
- 0.36% from the farms manage more then 100ha.

official figures (NSP 2021-2027, SWOT analyse)

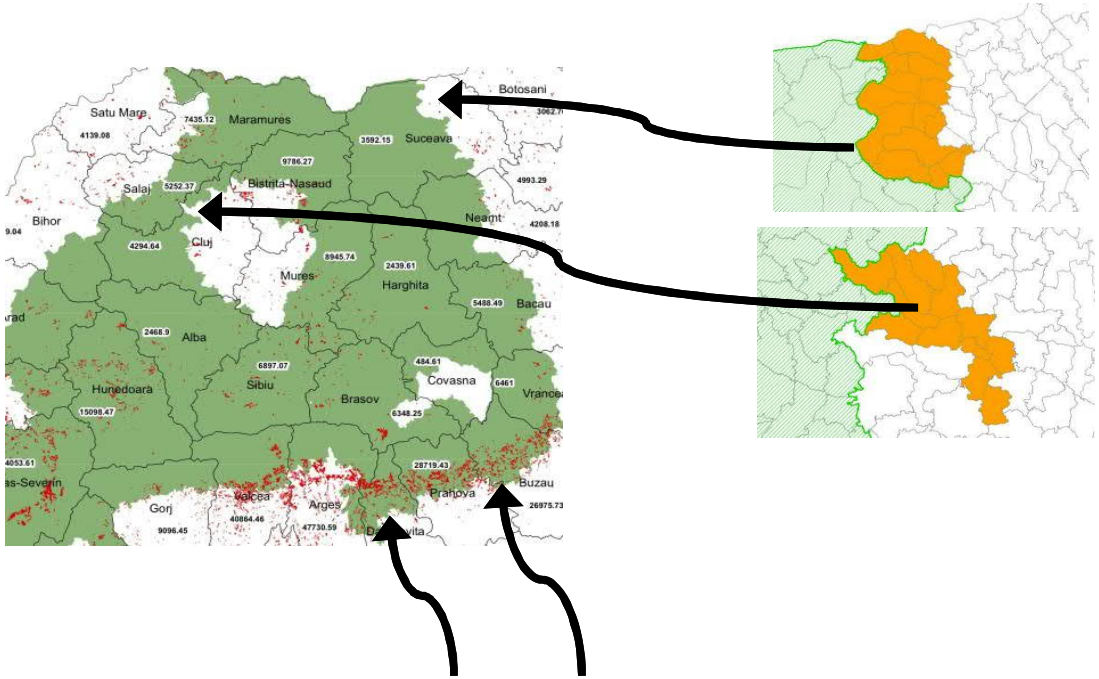
How can we keep connectivity in the romanian landscape?

- **development of new AE payments 10-15% shrub**

Working directly with the Ministry of Agriculture (MADR), UBB-Cluj, Birdlife RO, WWF RO we have successfully proposed new agri-environment measures since 2012 (Maculinea sp. AE measure) ..2022 (4 pollinators AE measure):

- *Paracossulus thrips, Pilemia tigrina, Colias myrmidone, Euphydryas aurinia*

Impact: over 400,000 ha eligible for support payments for HNV farmers:



How can we keep connectivity in the romanian landscape?

- **designing results-based agri-environment payment schemes?**

Until now: management-based AES → e.g. mowing dates

RBAPS : payments for desired result

→more freedom for farmers

→ more adaptable to local conditions (wet year/dry year, aspect of slope, altitude, etc.)

FUNDATIA ADEPT

ifab

DG Environment, European Commission

POGÁNY-HAVAS KISTÉRSÉG

gefördert durch DBU Deutsche Bundesstiftung Umwelt www.dbu.de

Pros and cons of RBAPS

- Clear link between payment and biodiversity objective
- “production” of biodiversity becomes part of farming system
- Farmers are rewarded for their entrepreneurial effort
- Greater public recognition of farmer’s role in maintaining biodiversity

- In some cases it is not possible to design indicators of biodiversity results
- Managing authority does not always have access to expertise to set up a RBAPS
- Farmers must be willing to accept a results-based approach

The Romania pilot scheme 2015-2018

90 ha contracted in each region (continental and mountain)
Target: Hay meadows of High Nature Value

Târnava Mare:

approx. 85,000 ha,

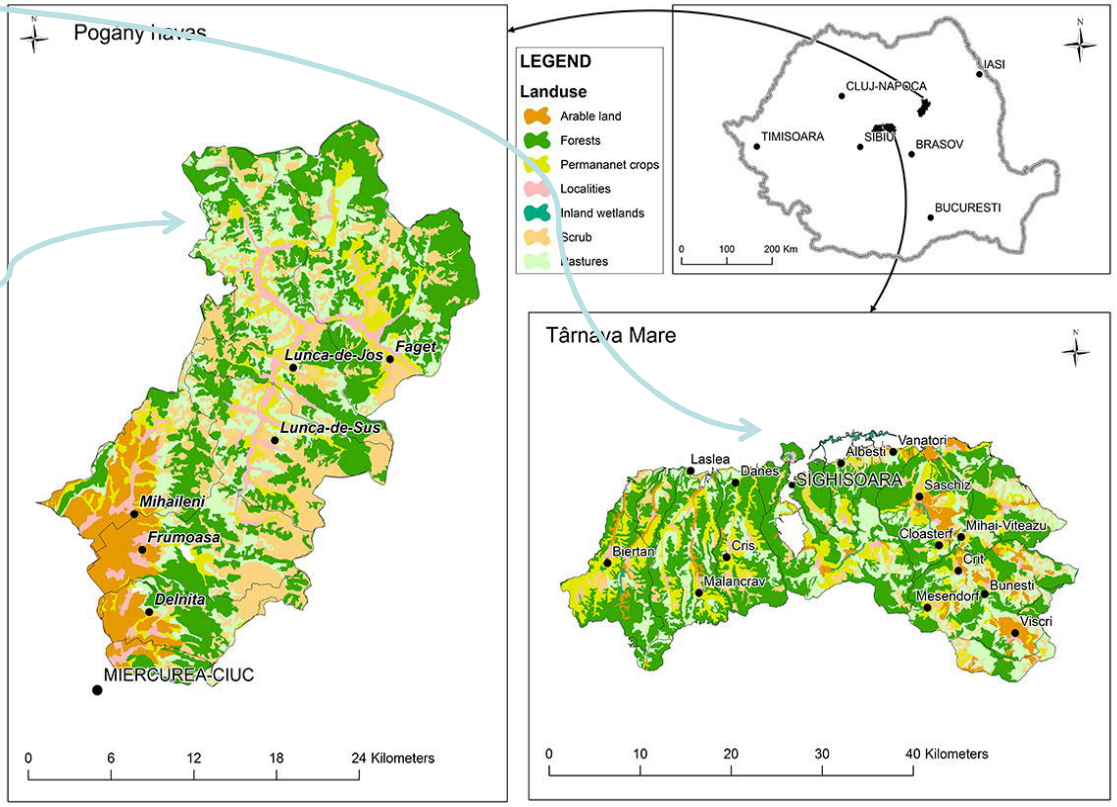
350-700 m altitude:
Continental b-g region

Pogány-havas Ciucului Mountains):

approx. 60,000 ha, 650-1500 m altitude:

alpine b-g region

→ HNV, Natura 2000, good relations between project partners and farmers



30 indicator species for TM & PH

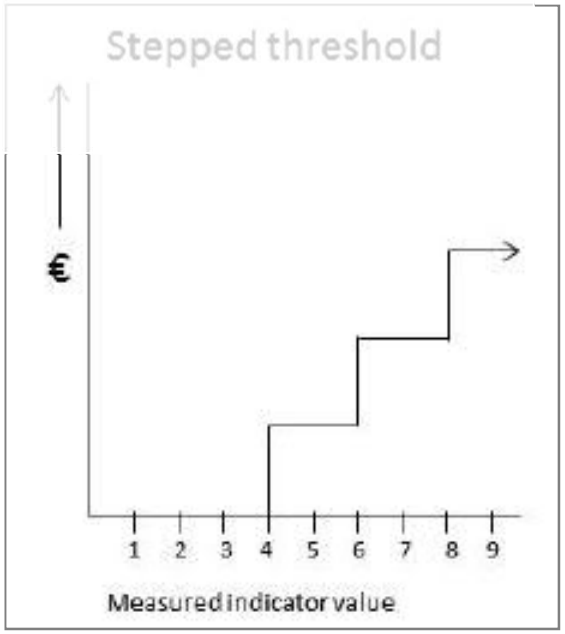
Primula spec.

Trollius europaeus

Orchidaceae spec.

- same list for two regions (continental&mountain)
- easily to recognize,
- species groups to avoid confusion,
- flowering in spring-summer – long flowering period,
- indicators for wet, mesic & dry meadows,
- only grow at low intensity hay meadows,
- are associated with high plant & animal species richnes
- are not rare,
- are sensitive to change in management.

Payment levels



- 3 payment levels calculated with methodology (income foregone) agreed by Managing Authority:
  - **5 species: €213 / ha / year**
  - **8 species: €229 / ha / year**
  - **10 species: €259 / ha / year**

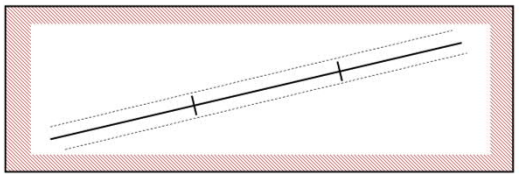
Contract holders…

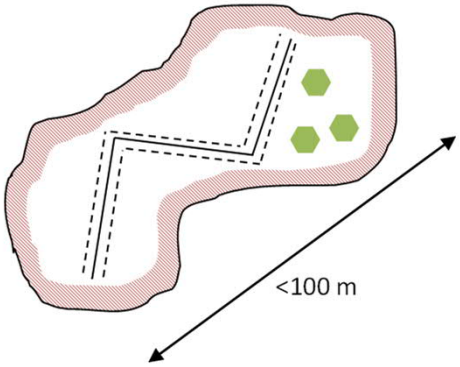
→ cannot step down during contract period

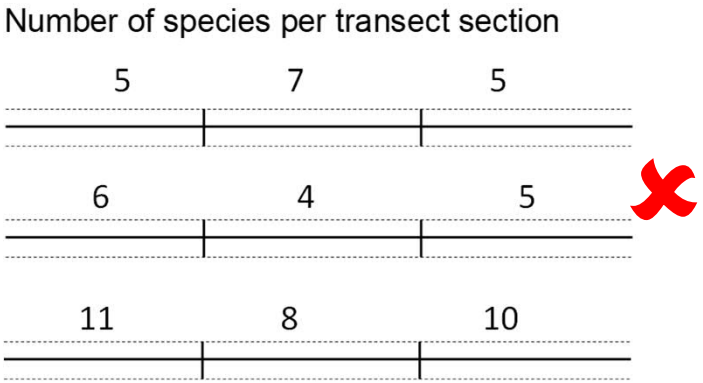
→ are incentivised to manage in a way to step up to get higher payment rates

Indicator recording method

- used by farmers AND payment agencies







How can we keep connectivity in the romanian landscape?

- **Carbon Farming (certificates) + Biodiversity?**

Together with a few UK partners (entrepreneurs), we are working on the development of a **private compensatory payment system** for farmers to maintain carbon in the soil (land use) as well as environmental values and biodiversity (pollinators, birds, soil, plants etc.).

- **2 regions** in county Mures: Teline and Daia, **1500ha/ region**,
- aprox. payment rate /ha = 250euro,
- **contracts for 25 years** – managed by ADEPT (core funding)
- 2022 – field studies (baseline),
- 2023 – 2024 **first payment** for farmers.

- **Life Metamorphosis** – pollinators study in HNV areas – 5 N2K sites.
- **Local Action Group** – local developed conservation measure ,
- Agriculture Knowledge and Innovation system **(AKIS).**

Thank you for your attention!

FUNDATIA ADEPT

www.fundatia-adept.org
www.discovertarnavamare.org

Innovation in rural development.

50 YEARS of Common Agricultural Policy
Ready for the future

2012: 1st prize in EU for best communication with farmers

2013: 1st prize in EU for most innovative communication with farmers

NATURA 2000

2014: 1st prize in EU for bringing most benefits to communities in a protected area

Life