

Rural Development Plan Agro-Environmental Measures in Emilia Romagna



Agro-Environmental Measures: objectives and actions

2

◆ **Improve water quality / Erosion reduction / Sanitary risks reduction (for operators)**

- ◆ Integrated production
- ◆ Organic farming

◆ **Erosion →**

- ◆ Cover crops
- ◆ Orchards and vineyard total soil green cover
- ◆ Meadow-pasture maintenance

◆ **Soil fertility →**

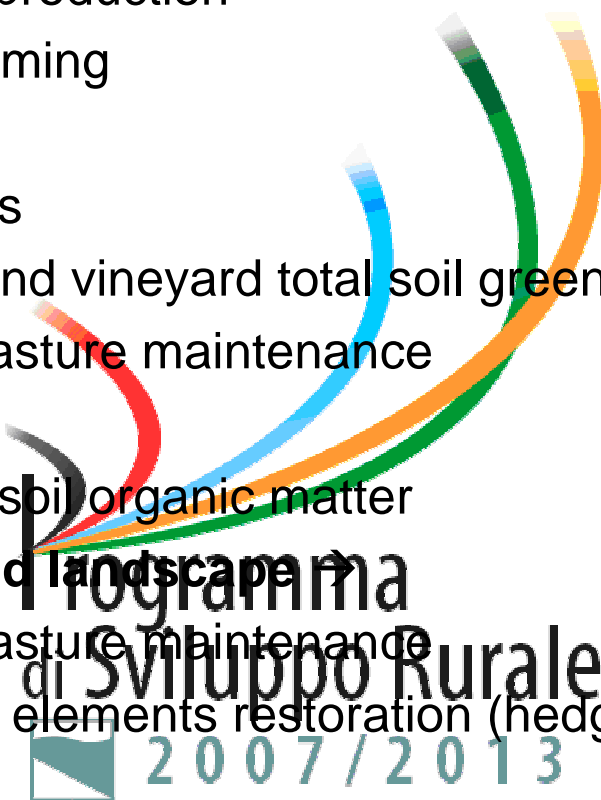
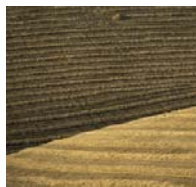
- ◆ Increasing soil organic matter

◆ **Biodiversity and landscape →**

- ◆ Meadow-pasture maintenance
- ◆ Landscape elements restoration (hedgerows, small woods, ponds)
- ◆ Arable crop land withdrawn for wetlands (20 years)

◆ **Agriculture biodiversity →**

- ◆ Traditional crops and animals



Rules for Integrated farming

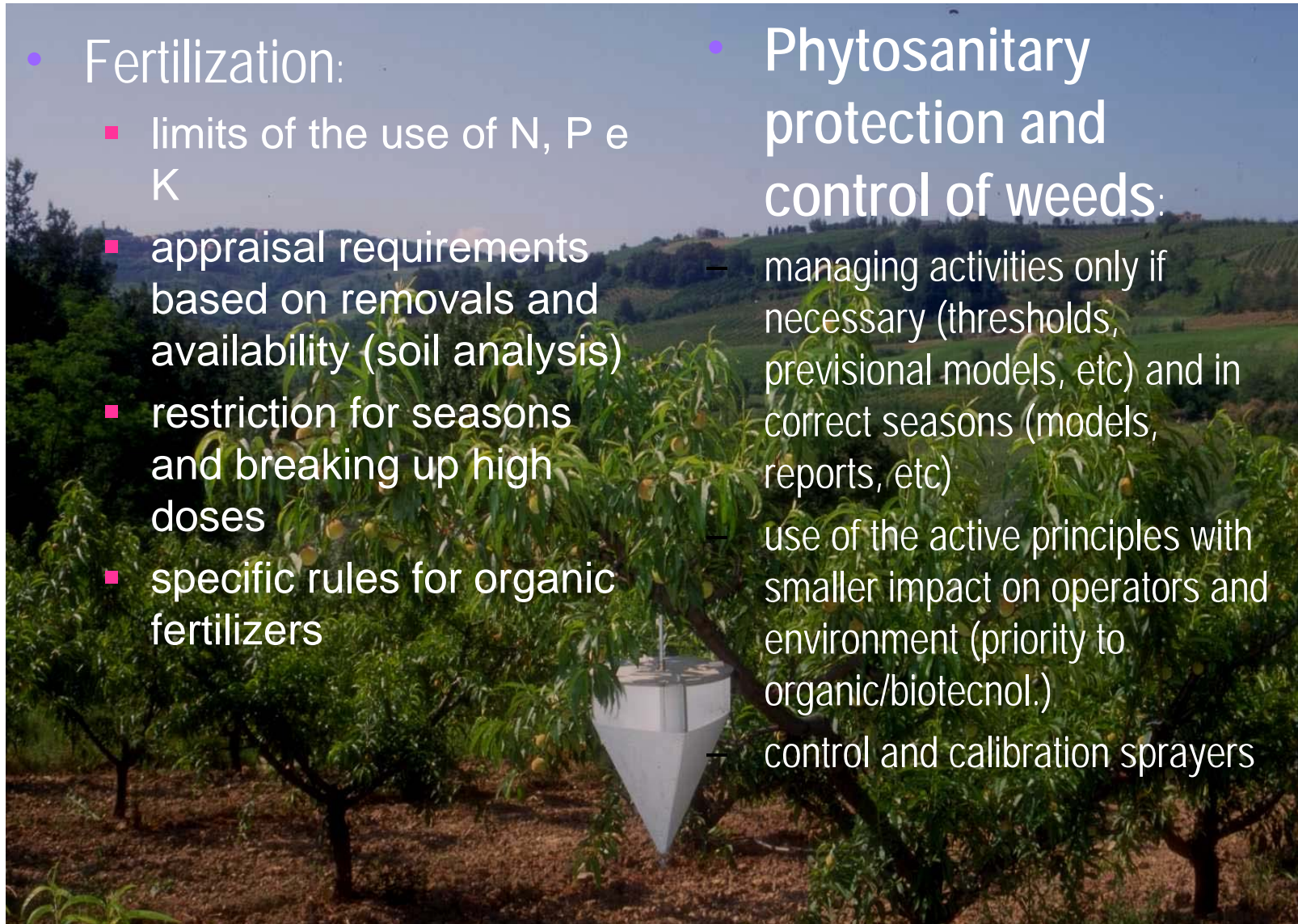
3

• Fertilization:

- limits of the use of N, P e K
- appraisal requirements based on removals and availability (soil analysis)
- restriction for seasons and breaking up high doses
- specific rules for organic fertilizers

• Phytosanitary protection and control of weeds:

- managing activities only if necessary (thresholds, previsional models, etc) and in correct seasons (models, reports, etc)
- use of the active principles with smaller impact on operators and environment (priority to organic/biotecnol.)
- control and calibration sprayers



Rules for Integrated farming

- Rotation:

- sequence of crops: at least 3 crops in 4 years
- forbidden re-stubble (except for cereals in hills)
- further obligations (wider rotation or inacceptability of crops)

Plant growth regulator: generally non admitted

- Soil management:

- cover/tillage of the soil at risk of erosion/leaching

- Irrigation

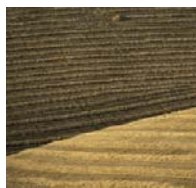
- based on idric balance
- max volumes

- Obligation to agree for 5 years to all the 60 "regulated" crops



Rules for Organic farming

- Application rules of Reg. (CEE) 2092/91
- Compulsory application of Action 9 (conservation and restoring of natural and seminatural spaces) on at least:
 - 5% UAA in plains (additional prize); optional ones in hill
- Compulsory application of rules as Action 1 (Integrated farming) for:
 - soil management
 - irrigation
 - control and calibration of sprayers
- Compulsory adherence for 5 years on all the crops



Biodiversity and landscaping

- Maintaining or creating actions
 - Hedgerows
 - Small woods
 - Ponds, small lakes, herbal purification ponds
 - Tree row, traditional tree and vineyard row
 - Isolated trees
- Technical prescriptions
 - Preserve structure and species of habitats
 - Maintain a buffer strip around ponds
 - Minimum width → 5 m
 - Buffer strip with herbaceous plants, shrubs or trees
 - Pesticides and fertilizers cannot be used
 - Control of plants in the buffer strip: manual or mechanical
 - Species have to be chosen from a list. must belong to



Biodiversity and landscaping actions

Intervention F1 → habitat for wild fauna and flora

• Wetlands

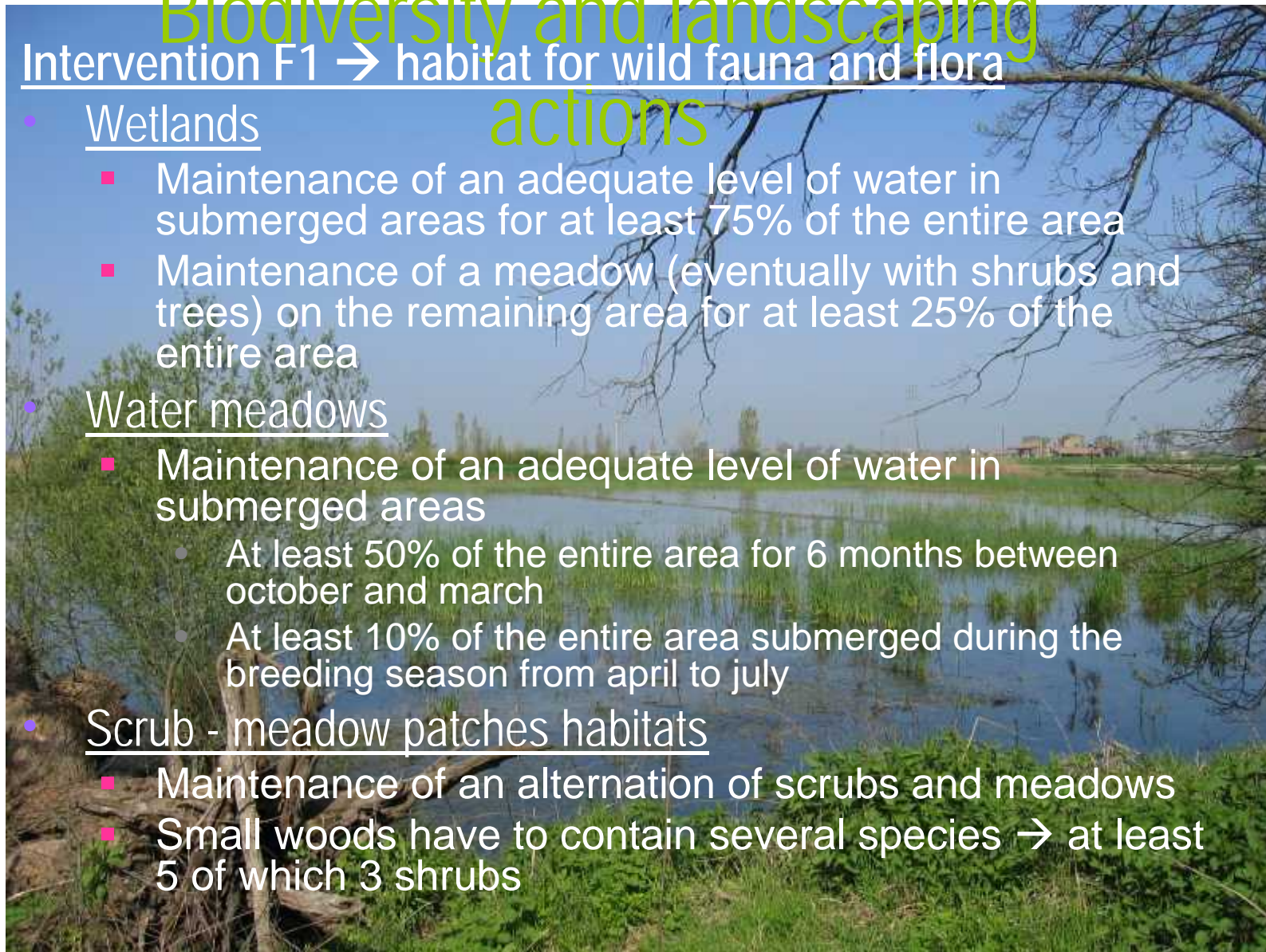
- Maintenance of an adequate level of water in submerged areas for at least 75% of the entire area
- Maintenance of a meadow (eventually with shrubs and trees) on the remaining area for at least 25% of the entire area

• Water meadows

- Maintenance of an adequate level of water in submerged areas
 - At least 50% of the entire area for 6 months between october and march
 - At least 10% of the entire area submerged during the breeding season from april to july

• Scrub - meadow patches habitats

- Maintenance of an alternation of scrubs and meadows
- Small woods have to contain several species → at least 5 of which 3 shrubs



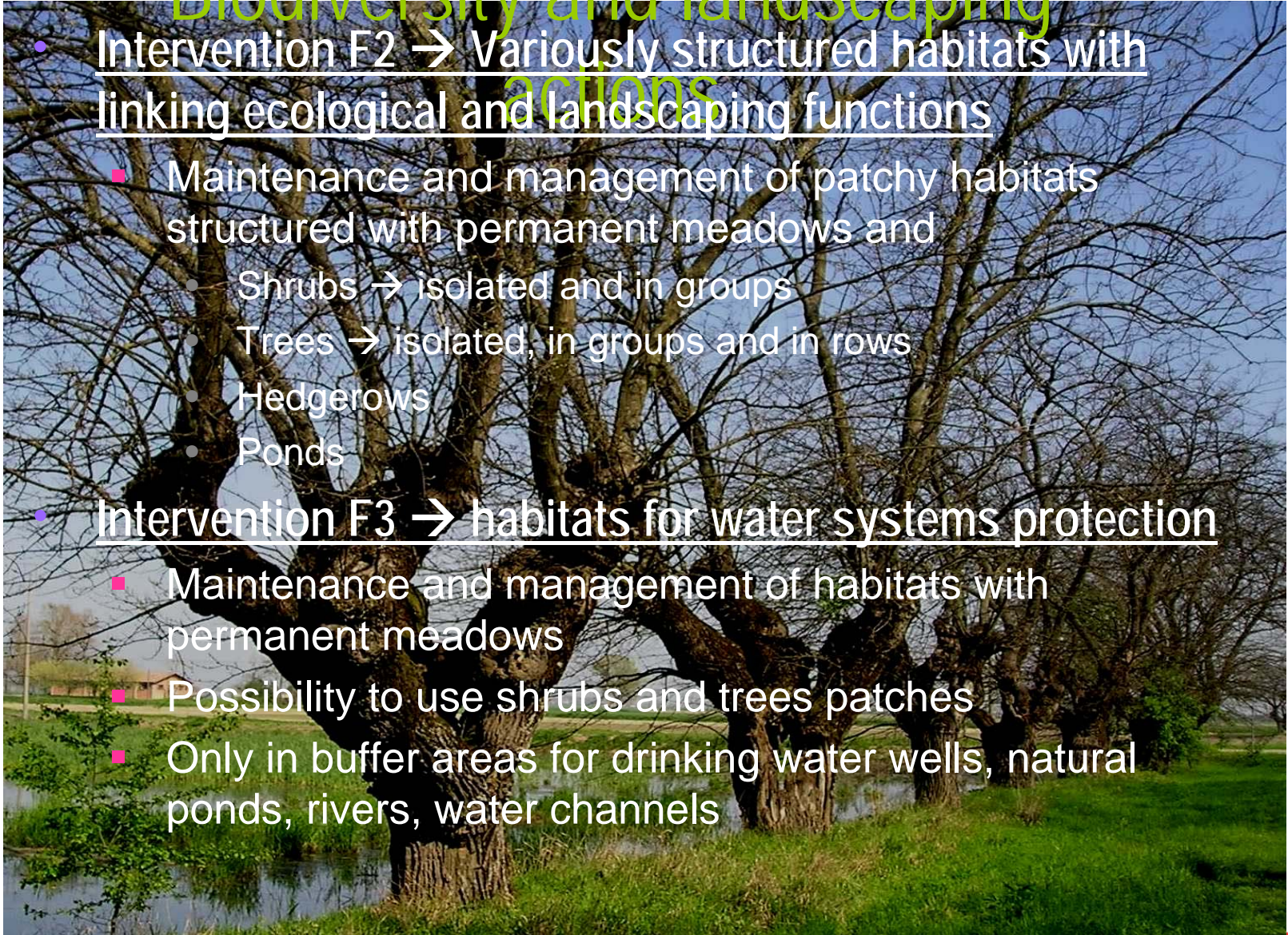
Biodiversity and landscaping

Intervention F2 → Various structured habitats with linking ecological and landscaping functions

- Maintenance and management of patchy habitats structured with permanent meadows and
 - Shrubs → isolated and in groups
 - Trees → isolated, in groups and in rows
 - Hedgerows
 - Ponds

Intervention F3 → habitats for water systems protection

- Maintenance and management of habitats with permanent meadows
- Possibility to use shrubs and trees patches
- Only in buffer areas for drinking water wells, natural ponds, rivers, water channels



Administrative managing

Application selection based on:

- ◆ Territorial criteria with priority to
 - ◆ Environmentally sensitive areas (especially Natura 2000 and Nitrate directive (91/676/EEC) areas)
 - ◆ Agrienvironmental agreements
- ◆ Technical criteria with priority to
 - ◆ Environmental (biodiversity) actions
- ◆ Local priorities: possibility to differentiate priorities at sub-regional level → Provinces (NUTS 3)
 - ◆ Environmentally sensitive areas
 - ◆ Actions

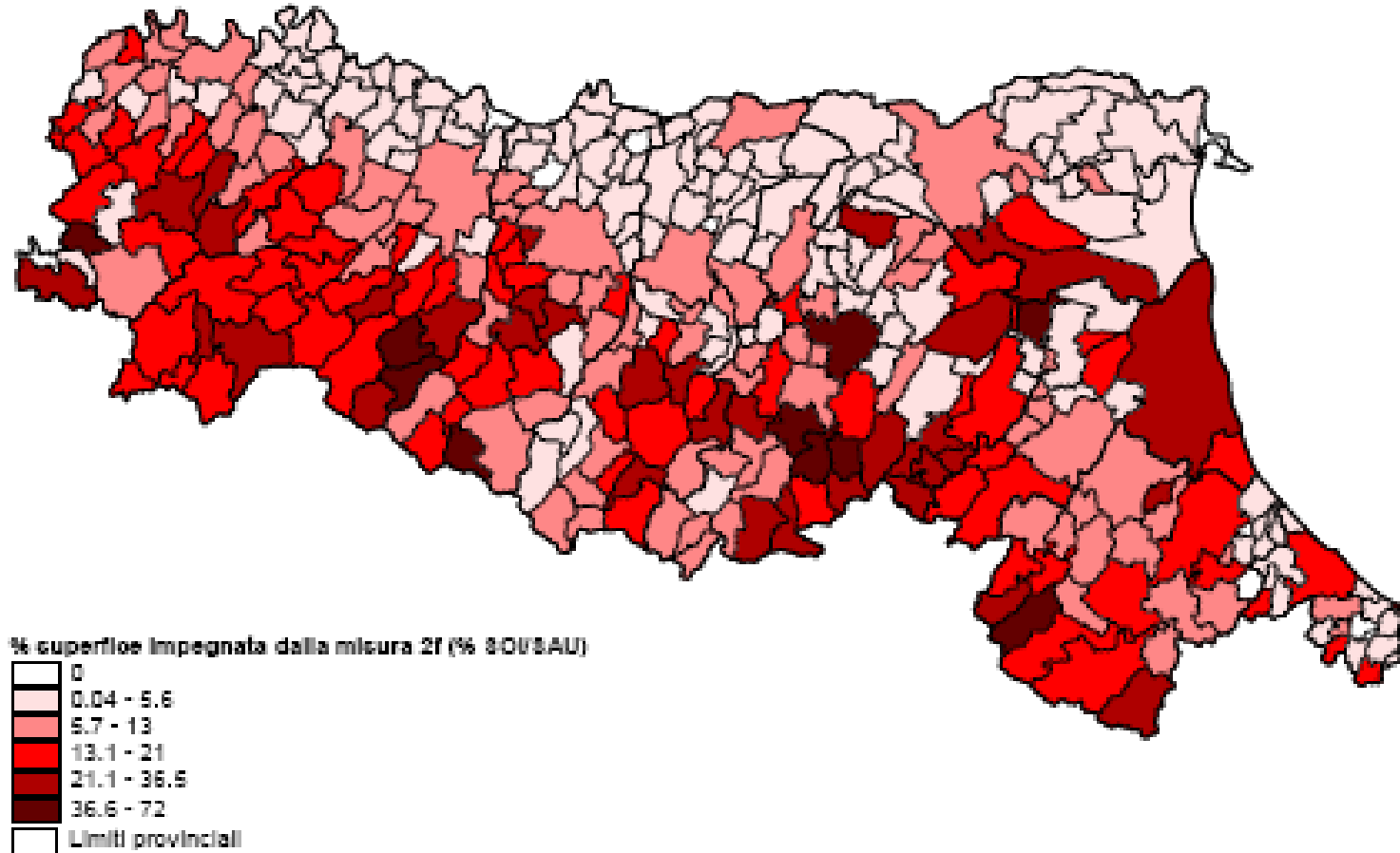
Actions integration → "productive" actions AND specific actions

- ◆ Organic farming → the applicant farm must adhere to landscape feature action on 5% of farm UAA
- ◆ Possibility to adhere to integrated or organic farming AND cover crops or orchards soil green cover



Programma
di Sviluppo Rurale
2007-2013

AGRICOLTURA E RIFORMA STRUTTURALE



Compared with regional data (81.000 farms and 1 million ha UAA):

- Measure 2F paid in 7.300 farms (AE contracts for 12,7% of total UAA)

Agro-environmental measures evaluation

11



- For the Region it is the occasion to study in depth the experience already matured, above all under the profile of the assessment of the **environmental impacts** .

Main impacts:

- **soil quality** (reduction of soil erosion and upheaval)
- **surface and deep waters quality**
- **biodiversity impact**
- **landscape effects**
- reduction of the effects related to less favored areas.



Programma
di Sviluppo Rurale
2007/2013

Carried out surveys



Output indicators:

Adhesion to the actions: incidence and distribution



Survey on the employment of **agro-chemical input**

- compared with integrated /organic farming vs UABP broken up for kind of products/ toxicological classes / etc.
- survey on economic aspects



Estimate of effects at **local level**

- zoning
- simulation of the releases by model to different scale (null / farm / global)

Further **cases of study** 2007/2013



Programma
di Sviluppo Rurale

Estimation of input quantity

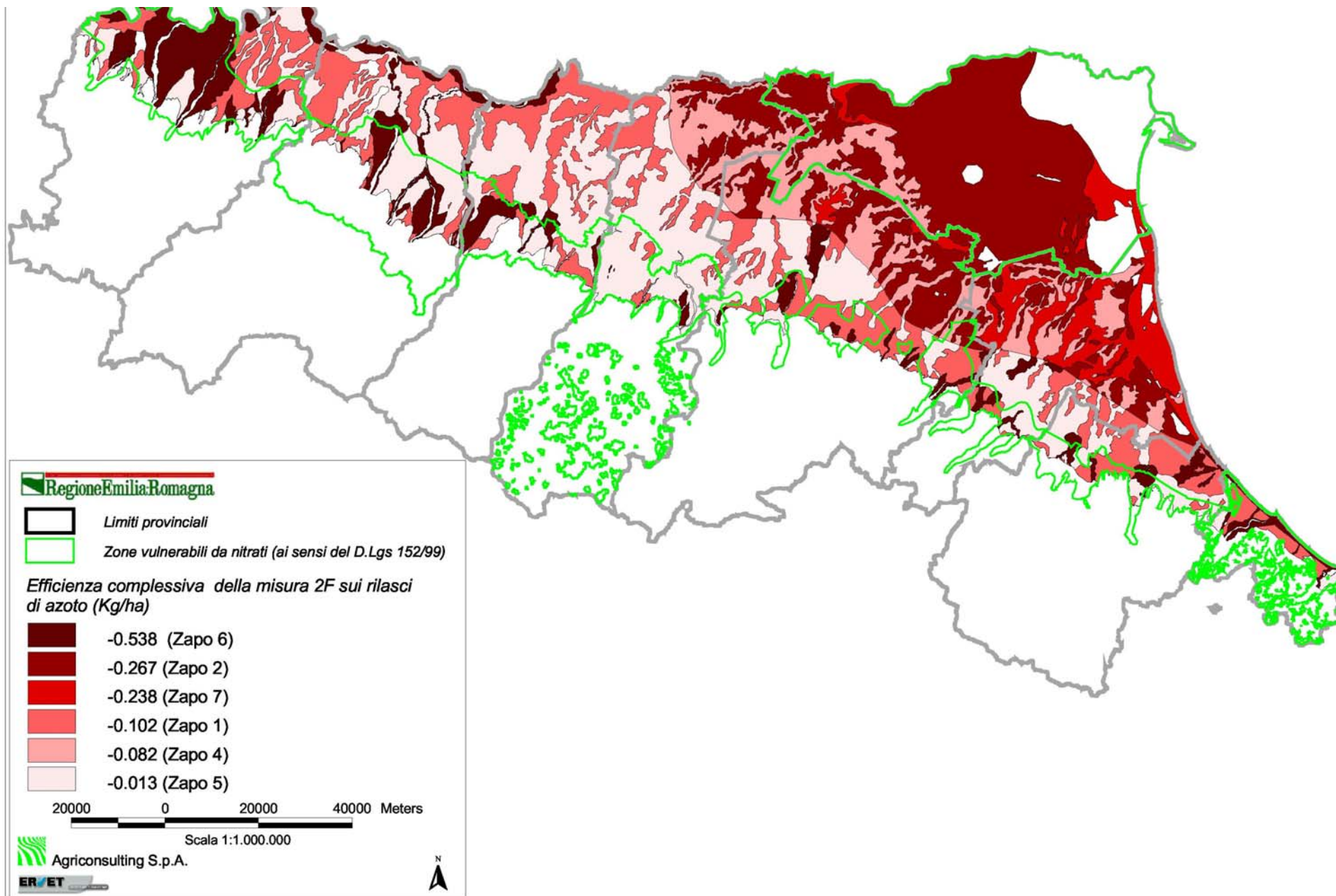
Estimation of input quantity and differences between conventional agriculture and low input farming (integrated and organic) is articulated in two main steps:

- ◆ a) **quantitative differences** in total unitary quantity of inputs for crop and homogenous area between low input and conventional: survey carried out from 2002 to 2004 in 2330 fields on the entire regional territory
- ◆ b) **territorial level analysis**: results of previous stage and GIS elaborations
 - ◆ Zoning “Agronomic Potentially Uniform Areas” (ZAPO)
 - ◆ Homogeneous Kind of soil (Regional Pedological map) regards 87 kinds of soils in total
 - ◆ Water-Climatic Balance - In the base of regional agro-climatic sharing plain area has been divided in two zones:
 - ◆ Subjection phreatic - the territory under investigation has been divided in 2 zones
 - ◆ Georeferenziation (with GIS) of fields surveyed
 - ◆ Comparison with statistical data to extend the data to effective crop and identifying systems of crops (TiZAO)

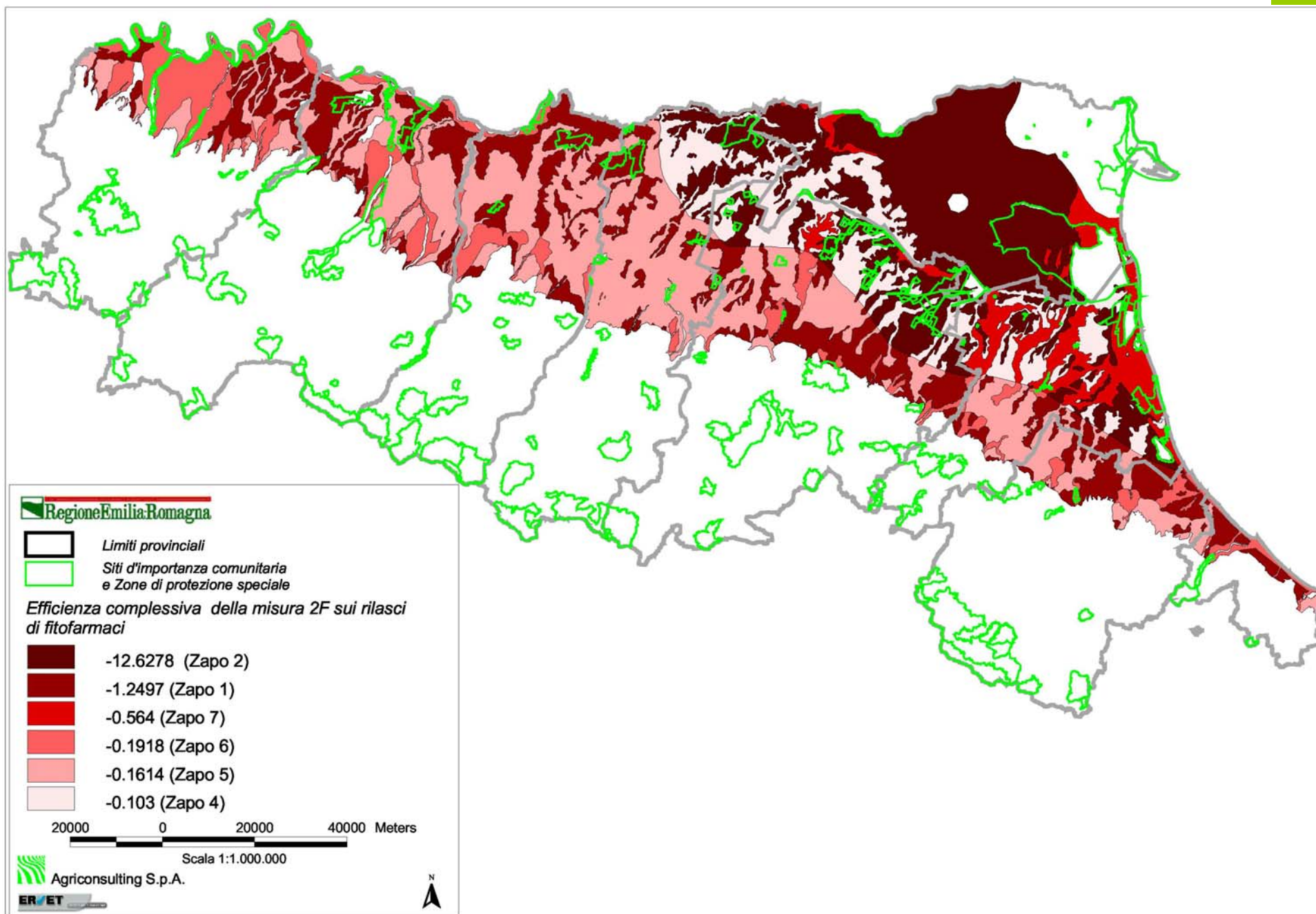


Programma
di Sviluppo Rurale
2007/2013

Efficiency of the Measure 2F on the Nitrate quantity reduction



Efficiency of the Measure on the phytosanitary products release reduction



Results on biodiversity

- **Animal biodiversity:**

- 219 bird species found in financed areas
- 15 “target” (threatened and rare) bird species found in financed areas, some of them were absent for decades from the region
- High difference in bird populations between financed and non financed (counterfactual) areas

- **Plant biodiversity:**

-

-





- Positive regional and farm impact due to different actions synergy

Results on landscape

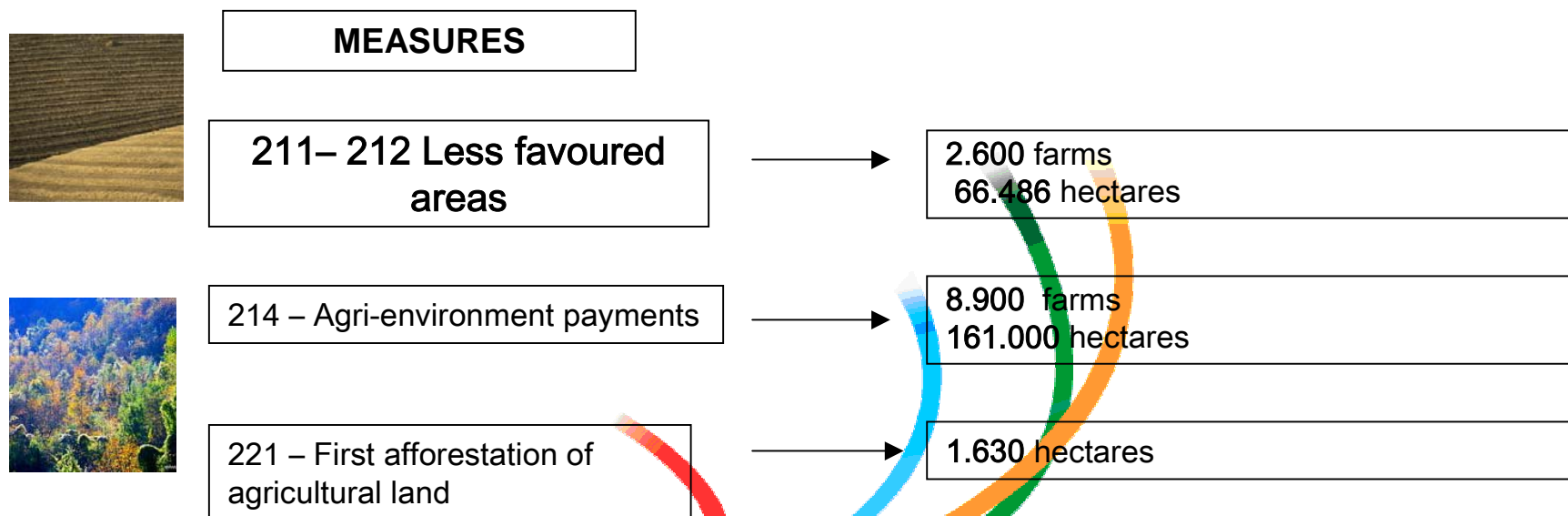
- High specific effect on a limited extension
 1. Landscape elements restoration (highest direct effect)
 2. Arable crop land withdrawn for renaturalization
 3. Meadows and pastures maintenance
- Low specific effect on a wide extension
 1. Organic farming
 2. Integrated production



Programma
di Sviluppo Rurale
 2007/2013

Programme impact

Axis 2 – Output and results



Area under successful land management contributing to :

- biodiversity and high nature value farming/forestry: 153.000 ha (15,3% UAA)
- water quality: 161.000 ha (16,1% UAA)
- soil quality: 131.000 ha (13,1% UAA);
- mitigating climate change: 158.000 ha (15,7% UAA)
- avoidance of marginalisation and land abandonment: 66.500 – 78.000 ha

Programma di Sviluppo Rurale 2007/2013



Environmental impacts of the programme

19



- **Inversion of biodiversity decline**, measured on birds populations in farming areas

- **Increasing of “High nature value farmland” areas** → 2.300 -3.500 ha (+ 1,42 -2,4%)

- **Increasing water quality**

- Reduction of fertilisers quantity in area under contract:

- Nitrogen → 41-44%

- Phosphorous → 60-61%

- Total reduction in the Region

- Nitrogen → 6,2-7%

- Phosphorous → 9,2-10%

- **Increasing soil protection** → 10% risk erosion reduction

- Contribution to reduction of **climate change**

- Increasing bioenergy → + 55.351 TOE

- Farming emission reduction → -3,9%



Programma
di Sviluppo Rurale
2007/2013

Natural Development and Agro-Environmental Measures in Emilia Romagna

20



Thanks for your attention

Teresa Schipani

Direzione Generale Agricoltura