High Nature Value Farmland in Europe, Conference in Vilm, 14th – 18th June 2010

The Swiss political approach to ensure ecological compensation in the agricultural landscape

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1. Policies and instruments
2. Monitoring & evaluation
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Reform of the agricultural policy

*From the Second World War to 1993*
- subsidies linked with production:
  - fixed prices and
  - sales guarantees

1993 – *today*
- subsidies (= direct payments) are linked to compliance with ecological standards
  = Ecological cross compliance
High nature value farmland in European countries: e.g. Switzerland

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**Policies and Instruments**

**Overview**

1. **Ecological Requirements**
   - General direct payments
     - Total 2 milliard CHF
   - Ecological direct payments
     - Total 0.5 milliard CHF
   - Quality and Interlinking of Ecological Compensation Areas

2. Federal law on the protection of nature and cultural heritage
Proof of Ecological Performance (PEP)
Based on the approach of “Integrated Production Principles”
Rules translated into regulations:

• animal welfare standards
• balanced use of fertilisers
• appropriate share of ecological compensation areas (7%)
• crop-rotation
• soil protection
• selected and targeted application of plant protection products
Farmers’ uptake of ecological cross compliance in Switzerland

- Organic farming
- Integrated farming / PEP
- Other farming types
- Area not eligible for payments

![Graph showing farmers' uptake of ecological cross compliance in Switzerland from 1993 to 2005. The graph demonstrates an increase in the area of agricultural land dedicated to organic farming as well as the integration of PEP (Programme d’Eco-prévention) as a cross compliance measure.]

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Policies and Instruments

**General direct payments (2)**

- Payments per hectare for total utilised agricultural area
- Payments for roughage consuming animals
- Additional payments in hills and mountains for sloping terrain and animals
Ecological direct payments (3)

- Ecological compensation areas (ECA)
- Payments for extensive production of cereals and rape-seed
- Organic farming
- Payments for animal welfare commitments (animal-friendly stables and daily access to open air)
Policies and Instruments

Ecological Compensation Areas (ECA)

• Protect and restore ecosystems close to their natural state

• **Extensive meadows**
  • No fertilizer and no pesticides are allowed
  • Grass is mown at specific times allowing flowers to turn into seeds (plain: mid-June).

• **Meadows used with little intensity**
  • Same conditions as extensive meadows, except fertilisation (= 30 kg N / ha allowed)
Others Ecological Compensation Areas (ECA) in Grassland

Litter Meadows
Wet location, no fertilizer and no pesticides, cut after 1 September.

Extensively used pasture

Forest pasture
Ecological Compensation Areas (ECA) in arable land

Crop preservation strips
Extensively managed strips, no N-fertilizer and no weed control.
3 to 12 m wide.

Fallow
Perenial strips of land, seeded with native wild flowers.
No fertilizer, weeds control only by single plan application.
Cut in winter
Ecological Compensation Areas (ECA)

High-Stem Fruit Trees

Hedges and bushes with extensively managed edge of 3 m in width

Native single trees
Ecological Compensation Areas (ECA)

others (without contribution)

- Water ditches, pools, ponds
- Ruderal areas, stone heaps and stone banks
- Dry stone walls
- Wine growing areas with high diversity of species

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About 12% of agricultural area

Policies and Instruments
Trend in Ecological Compensations Areas

About 12% of agricultural area

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Policy cycle
Assessing the effect on biodiversity

Agri-environmental objectives

Adapt measure
Re-think objectives

Measures

Evaluation: translate policy objectives into indicators
land use / vascular plants / breeding birds / carabid beetles / spiders / butterflies / grasshoppers
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Frontiers in Ecology and the Environment

Ecological cross compliance promotes farmland biodiversity in Switzerland

Front Ecol Environ 2009; 7, doi:10.1890/070197
www.frontiersinecology.org
Conclusions

• Botanical quality of ECA meadows is heterogeneous, only 25% of „good quality“.

• Fauna indicators show positive reaction over time (arthropods) and in comparison to non-ECA.

• PEP works for some species, not sufficient for endangered species!

• Climate: Annual variations cover possible effects?

• Biodiversity reacts slower to extensification than to intensification.

→ Good direction, moderately positive effect,  
→ additional efforts required to fully reach the objectives
Enhancing biodiversity
Enhancing endangered (RL) species (biodiversity effects of ECA)

- Endangered species (RL)
- Quality standard reached (e.g. target vegetation, REQ-bonus quality)
- More species on ECA than on non-ECA

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• Poor quality of many Ecological Compensation Areas (ECA)
• ECA not interlinked

ECA chosen for economic reasons:

ECA chosen according to the need of biodiversity:

© Jenny et al. 2003
Policies and Instruments

**Ordinance on Eco-Quality (4)**
(Regional Promotion of Quality and Interlinking of Ecological Compensation Areas)

- Poor quality of many Ecological Compensation Areas (ECA)
- ECA not interlinked

⇒ **Ordinance on Eco-Quality**
- Minimum standards by central government
- Voluntary basis
- Co-financing: 80% central government, 20% local
Ecological Compensation Areas

Ordinance on Eco-Quality
- Additional, voluntary bonus payments
- Result oriented
- Biodiversity: key species, target species

Proof of Ecological Performance
- Basic requirements for any direct payments (belongs to PEP)
- Management orientated
- Biodiversity: 7% of farmland as ECA
Ordinance on Eco-Quality (4)
Payments for ecological quality of Ecological Compensation Areas

• Number of species, occurrence of rare species in the ECA:
  • Extensive and less intensive meadows, litter meadows
  • Hedges

• Number of species in combination with structures in the ECA:
  • Extensively used pasture
  • Forest pastures
  • Vineyards with a high species diversity
Ordinance on Eco-Quality (④)

**Botanical quality**
Additional bonus payments if 6 out of 47 plant species are present on an ECA meadow

**Lowland meadows**
20 % of ECA meadows fulfill the quality requirements (5 – 65 %)

**Mountain meadows**
80 % of ECA meadows fulfill the quality requirements (75 – 90 %)

Herzog et al. 2005
Kampmann et al. 2005
Ordinance on Eco-Quality (4)

Payments for Interlinking of Ecological Compensation Areas

• Regional network plan
  • Aims with regard to flora and fauna
  • Measures and ECA-location in relation to the specific needs of the species
Policies and Instruments

**Inspection - control**

- PEP and ECA certified by control organization authorized ISO/IEC 17020
- Inspection by 30% of the farmers each year.
Environmental objectives for agriculture  FOAG & FOEN, 2008

→ Clarifying gaps and responsibilities of the agricultural sector; concerning biodiversity:

- Preservation and promotion of native species habitats, occurring mainly on agriculturally used land or depending on agriculture, in their natural range

- Preservation and promotion of genetic diversity of native wild species, and significant contribution to the diversity of crop varieties and livestock breeds

- Preservation of ecosystem services on agricultural production area
Environmental objectives for agriculture - annexes

Defining the specific responsibility of agriculture:
- Annex 1: 828 plant and 340 animal indicator- and target species
- Annex 2: 52 habitat types

- Regional differences in the natural range of these species and habitats
- Many target species only occurring on very limited areas
Operationalisation of goals: how much is available where? Where to implement, how much and how?

FOAG & FOEN project:

- Determine the current status, based on:
  - Habitat inventories
  - Point data (319 target species and indicator species)
  - Estimation models (*modèle pâturage*)

- Specify the objectives (range of about 1600 species modelled, based on environmental factors related to the observation data*)
  - To estimate the areas or other measures needed to ensure/promote species and habitats (annexes UZL**) in their natural range

- Outlook: Define goals for the development of agricultural policy and adaptation of instruments (criteria for interlinking projects; measures for habitats / indicator species, and possibly for target species. Option: criteria for species protection/promotion concepts)
Operationalisation of goals (UZL)

Baseline study for regionalized definition of goals on units of agricultural landscape types combined with agricultural zones and/or altitudinal zones.

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Conclusion: YES for biodiversity

• Yes, a lot has already been done.
• Yes, there is still a lot to be done.
• Yes, what has been done was worthwhile.
• Yes, the development of policy measures is ok.
• Yes, other economic sectors must take their responsibility too.
• Yes, consumers have to be involved!
Engagement in different sectors needed:

- Agriculture policy – improve incentives
- Agriculture – improve acceptance
- Land use planning – protect farmland from construction
- Trade/Consumption – Adjust supply and demand
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Thanks for your attention!

Your Swiss agriculture product: ...as well as...
Evaluation of Ecological Compensations

Areas with & without biological quality

→ Increasing share of areas with contributions for quality
→ High share of areas with quality in mountain regions (up to 80%)
→ Not enough areas with quality especially in the lowland
→ Promotion of rather unspecific species diversity
→ Only moderately positive effect for biodiversity
→ The negative trend for endangered species is not stopped.

Quelle: BDM-Indikator «Ökologische Ausgleichsflächen (M4)».
“Agriculture needs biodiversity
Biodiversity needs agriculture”