

European seminar on AECM – Round table 5

Monitoring and evaluation of the environmental impact of the AECM in Estonia

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since 2004, a state agency within the jurisdiction of the Ministry of Rural Affairs

Financing evaluation activities: RDP Technical Assistance (TA) measure

5 topics for the evaluation of AES (2004-2014) and AECM (since 2015)

Evaluation data is collected through existing databases, farm visits and through special studies on indicators

Examples of the main indicators we have
used to evaluate AES measures
– most of these are still continuing

SOIL

- Soil organic matter and soil fertility
- Soil fertility (pH, K, P)
- Soil nutrient dynamics

WATER

- Nutrient balance
- Pesticide use
- Water quality

LANDSCAPE

- Change in the landscape structure in terms of point, linear and area elements
- General upkeep (visual appearance) of the farm

BIODIVERSITY

- **Farmland birds**
- **Bumblebees**
- Earthworms, soil microbes
- Vascular plants

SOCIO-ECONOMY

- Family farm income
- Share of organic products sold as “organic”
- Environmental awareness

AECM in RDP 2014-2020

- Agri-environment-climate :

- Support for environmentally friendly management (**EFM**)
- Regional water protection support (from 2017)
- Regional soil protection support
- Support for environmentally friendly horticulture
- Support for growing plants of local varieties
- Support for keeping animals of local endangered breeds
- Support for the maintenance of semi-natural habitats

- Organic farming (**OF**)

AES in RDP 2007-2014

- Agri-environment scheme:

- Support for environmentally friendly management (**EFM**)
 - × Basic+additional
 - × Basic
- Organic farming (**OF**)
- Support for growing plants of local varieties
- Support for keeping animals of local endangered breeds
- Support for maintenance of semi-natural habitats

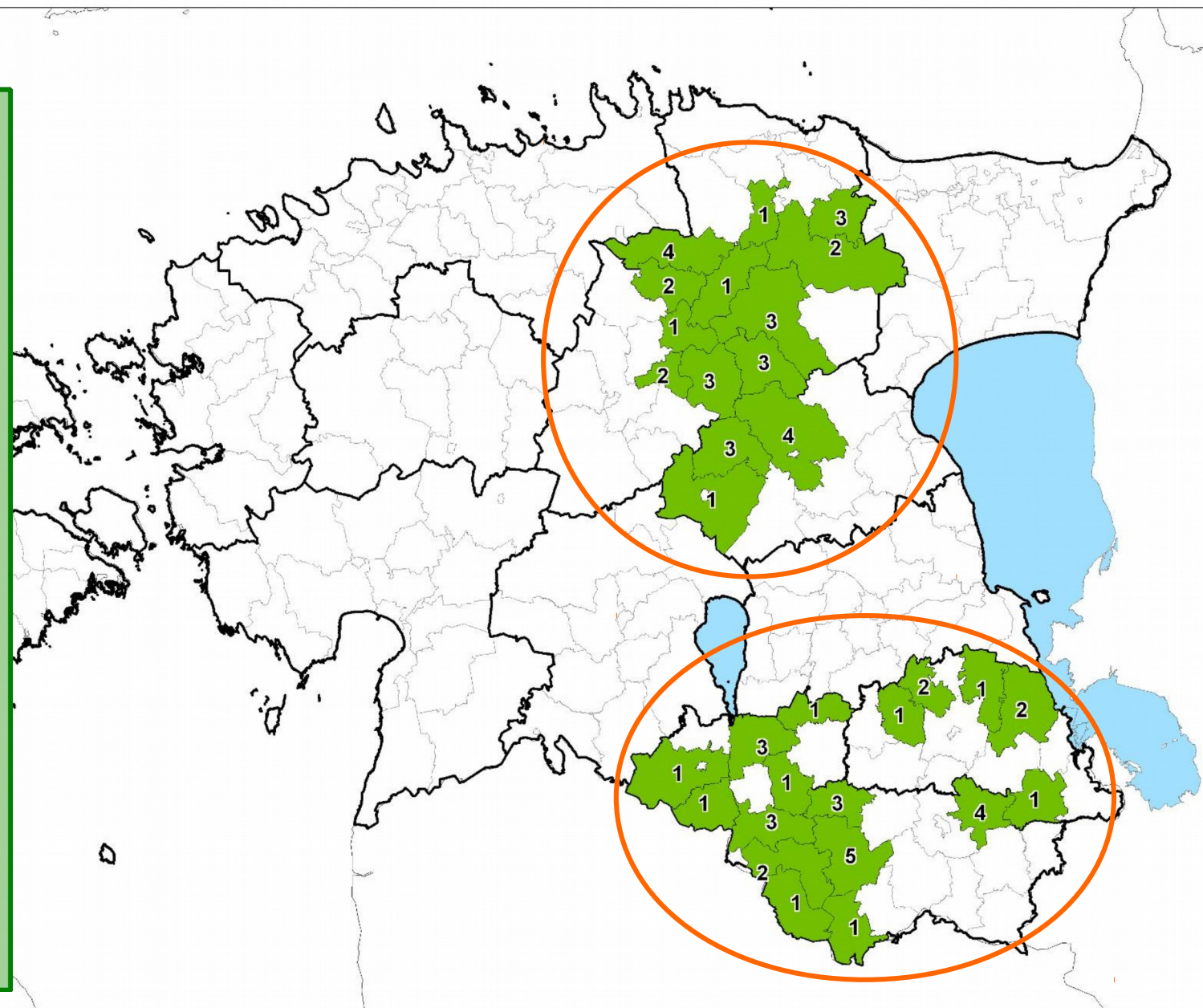
Broad and shallow scheme



Photo : A. Ader

Bumblebees and farmland birds monitoring areas 2009/2010-2014

- 66 monitoring areas/farms
- One monitoring area = fields under monitoring that belong to one farmer
- Monitoring on arable land
- 2 different regions (33 farms in both)
- Farms with 3 different support schemes:
 - 22 organic farms (OF)
 - 22 environmentally friendly management farms (EFM)
 - 22 single area payment scheme (SAPS) farms



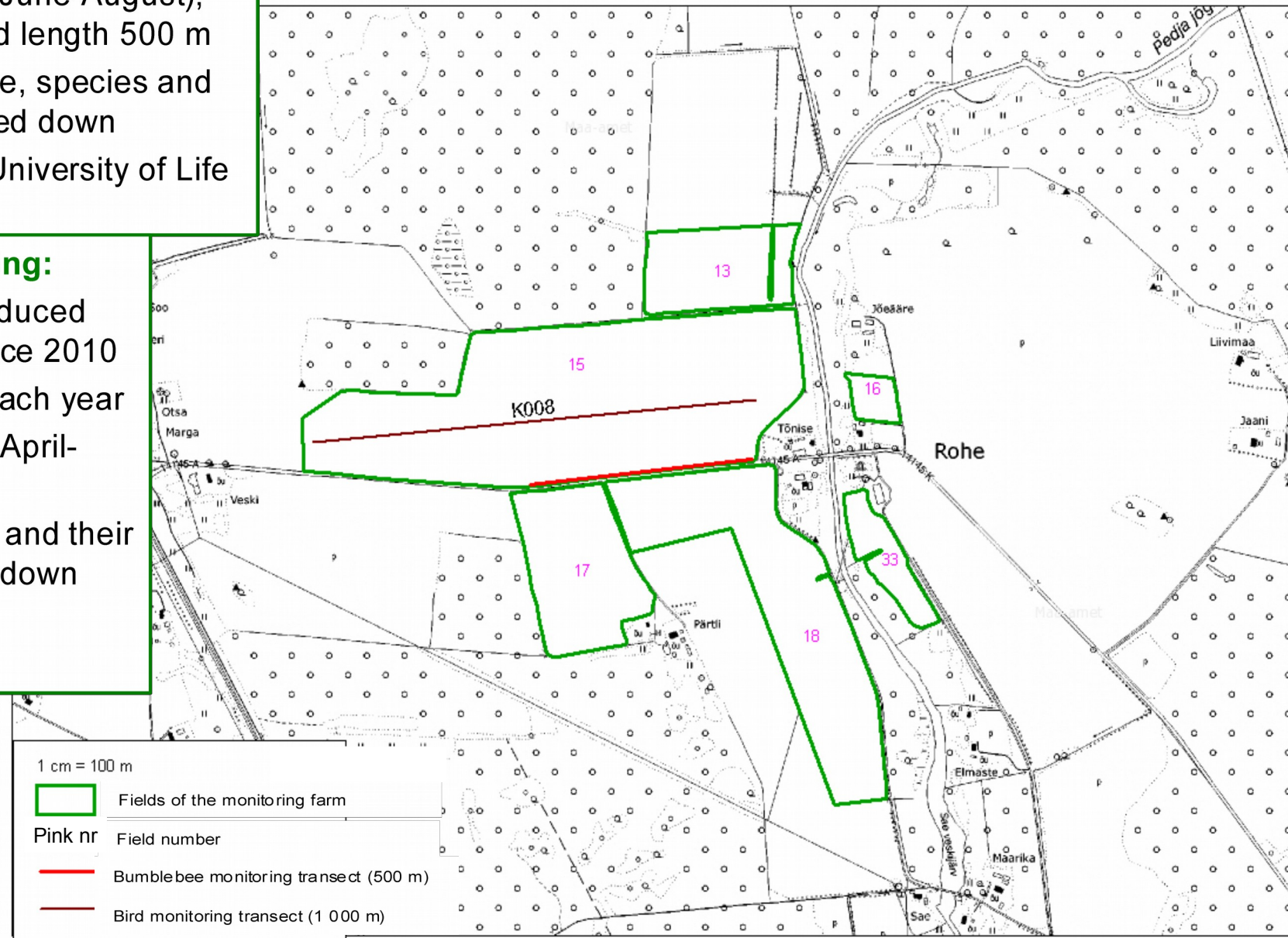
Methodology

Bumblebees monitoring:

- Started 2006 but introduced monitoring sample since 2009
- 66 monitoring farms each year
- Transect method (3 x June-August), transect width 2 m and length 500 m
- Bumblebee abundance, species and flower density are noted down
- Field work: Estonian University of Life Sciences

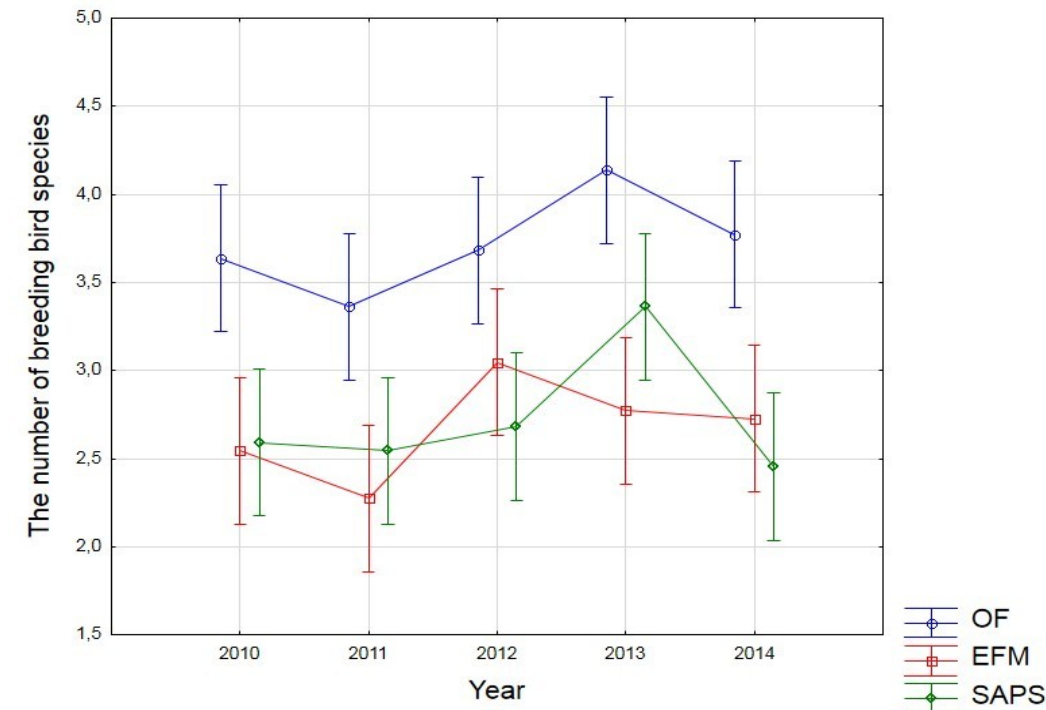
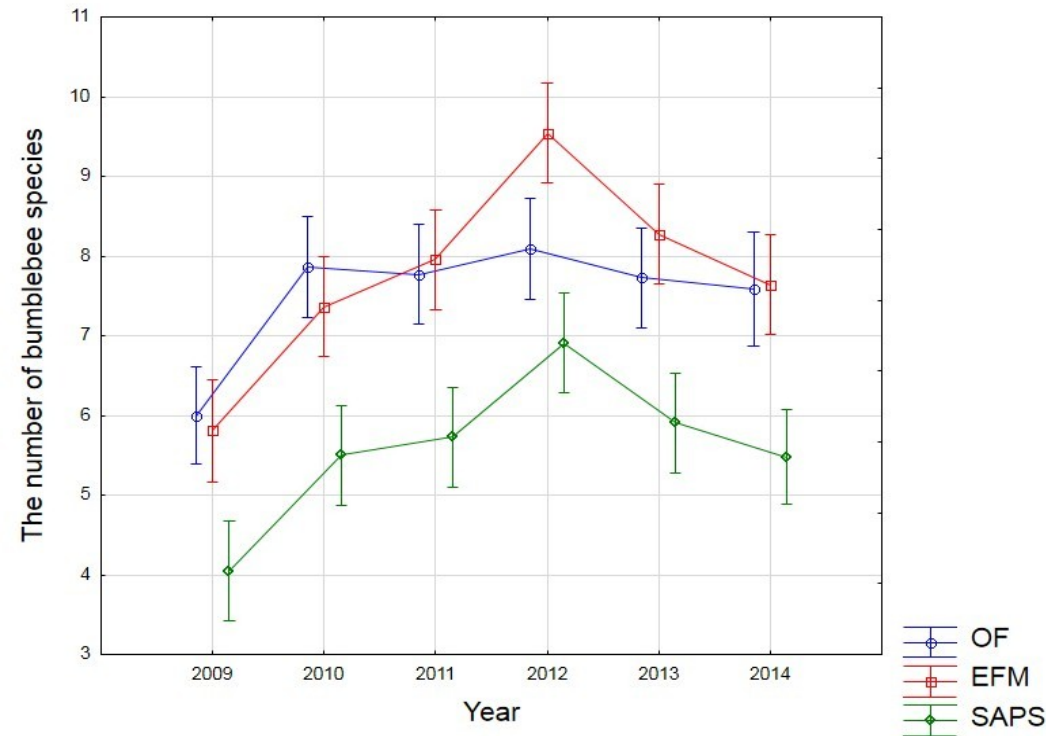
Farmland birds monitoring:

- Started 2006 but introduced monitoring sample since 2010
- 66 monitoring farms each year
- Transect method (3 x April-June)
- Breeding bird species and their abundance are noted down
- Field work: Estonian Ornithological Society



Main results:

- Bird and bumblebee indicators are lower in SAPS than in OF farms
- In EFM farms :
 - × Bumblebee indicators as high as in OF farms and even higher
 - × Farmland bird indicators as low as in SAPS farms



Lessons learnt and difficulties

Lessons:

- Long data series needed (especially in case of broad and shallow schemes)
- Counterfactual needed
- Evaluation of different taxonomic groups needed – may react differently
- Additional background data and analyses needed to interpret the results

Difficulties:

- Annual budget
- Changes in monitoring sample
 - × The manager and thus also the support type of the field(s) may change
 - × Arable land may change into permanent grassland
- How to differentiate impacts of measures from other confounding factors?



Photo : M. Möttus



Photo : A. Ader

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Thank you!