BfN
Federal Agency for
Nature Conservation

Definition, Identification and Monitoring of HNV Farmland in Germany

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Division II 1.3 Monitoring

Definition, Identification and Monitoring of HNV Farmland in Germany
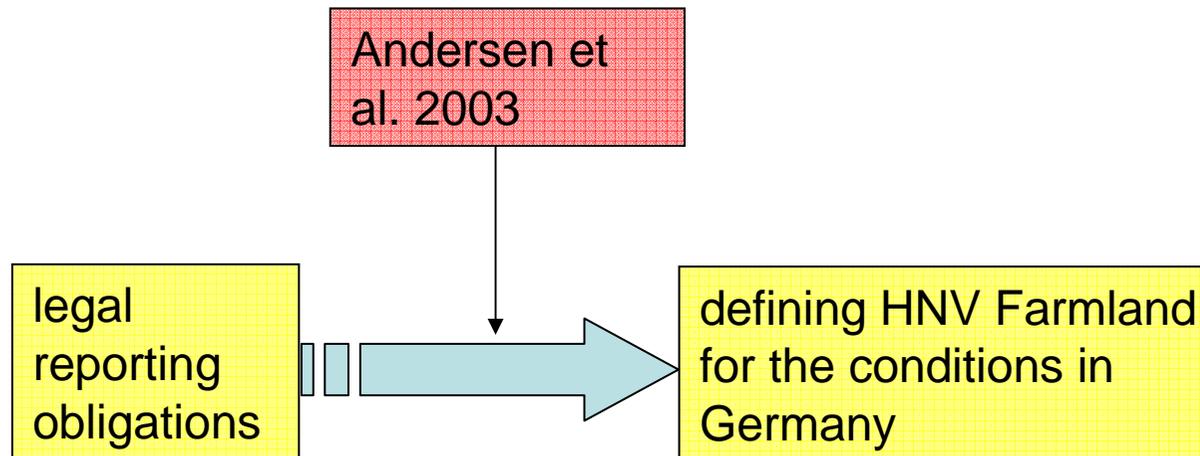
Important landmarks

➤ 2003 Kiew-Conference „Environment for Europe"

➤ Andersen et al. 2003

➤ Council Regulation EC 1698/2005 (EAFRD regulation) defining a HNV farmland baseline indicator (among others)

➤ Council Regulation EC 1974/2006 laying down detailed rules for the application of Council Regulation (EC) No 1698/2005

➤ high level working-group of the German Länder and the Federal State decide for a common approach in 2008

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Main types (Andersen et al. 2003):

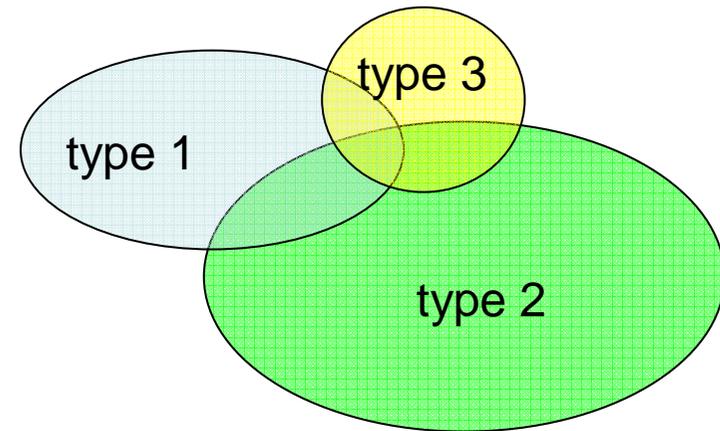Type 1: farmland with a high proportion of semi-natural features.

Type 2: farmland dominated by low intensity farming or a mosaic of semi-natural and cultivated land and small-scale features.

Type 3: farmland supporting rare species or a high proportion of european or world populations of species.

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HNV farmland as a set union of the area of types 1, 2 and 3 of HNV farmland

HNV farmland area related to UAA

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The German conditions:

huge agricultural stands in the north

small scale fields in the south

all well managed and intensively farmed

low intensity farming only on margins or under nature conservation management

HNV farming and LNV farming not to differentiate on farm level

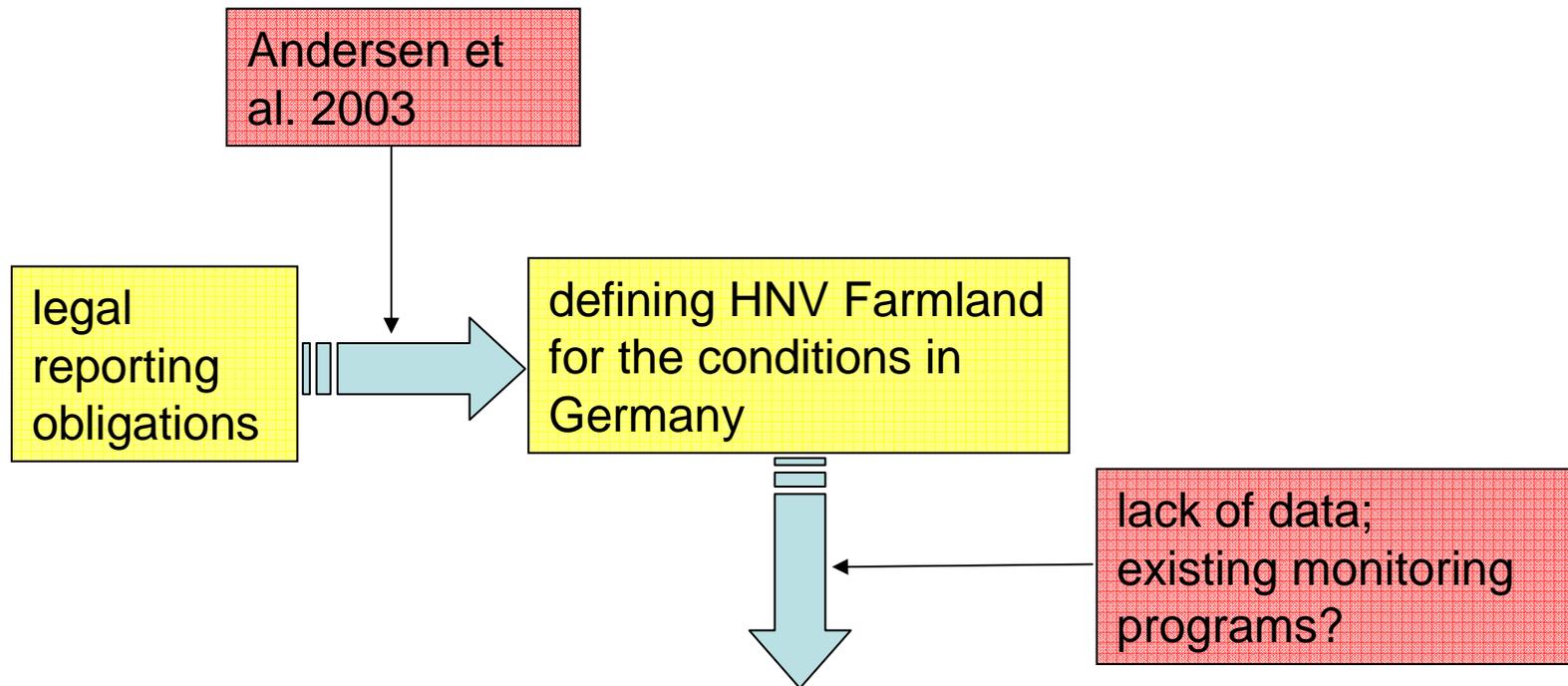# Definition, Identification and Monitoring of HNV Farmland in Germany

HNV farmland in Germany:

➢ HNV farmland comprises:

- species rich grassland
- fallow land
- species rich arable land
- species rich vineyards
- orchards
- habitat types according to habitats directive within the agricultural landscape
- legal protected biotopes within the agricultural landscape
- landscape features (e.g. ditches, hedges, unpaved field roads, ponds, small watercourses, dry-stone walls)

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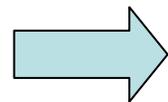
Step 2: data collection

Andersen et al. 2003

legal reporting obligations

defining HNV Farmland for the conditions in Germany

lack of data; existing monitoring programs?

how to collect data?

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Assessment of available datasets

- ➢ not representative for the UAA of Germany
- ➢ not spatially comprehensive
- ➢ inappropriate recording cycle
- ➢ continued execution not assured
- ➢ methodological enhancement to expensive

➡ existing monitoring programs are not suitable for supporting the HNV baseline indicator on the different administrative levels

➡ new concept proved to be most efficient and cost-effective!

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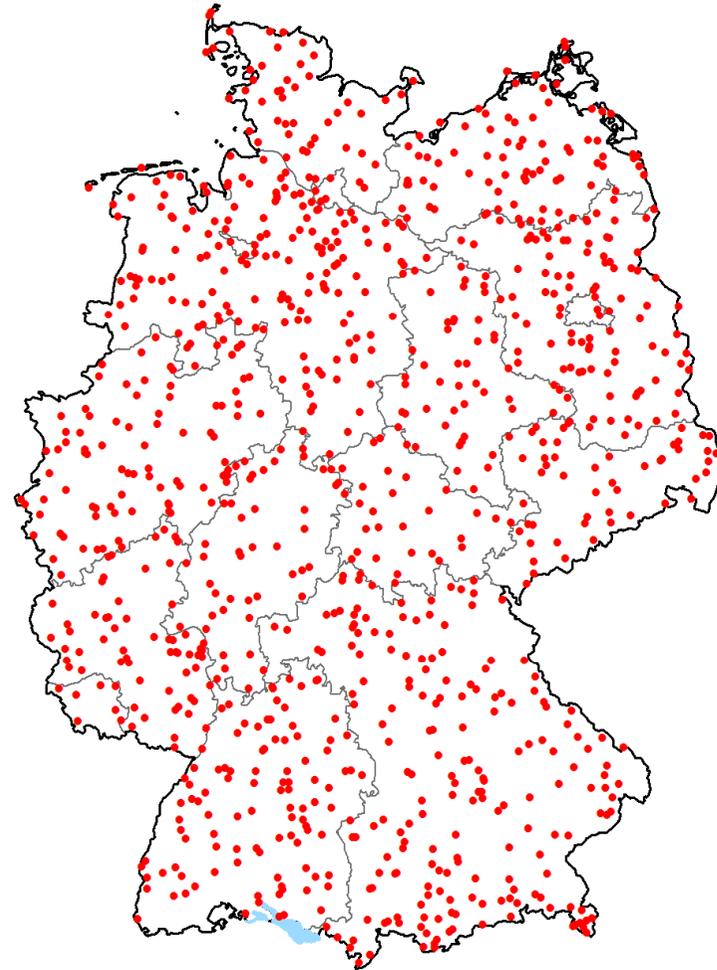
General Approach

- ➤ stratified random sampling

- ➤ field mapping within the sampling plots

- ➤ rapid approach for the evaluation of HNV features

- ➤ evaluation of all HNV elements within 3 quality levels

- ➤ extrapolation on the Länder and national level

- ➤ UAA as reference area

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Sampling Plots

- ➢ 1.000 federal sampling plots with a size of 1km²

- ➢ about 900 of 1.000 sampling plots comprising at least 5% of agricultural area are sampled (for data on national level)

- ➢ distributed in lots (of 12 to 20 plots each)

- ➢ supplementary plots for detailed studies on Länder level

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Stratification

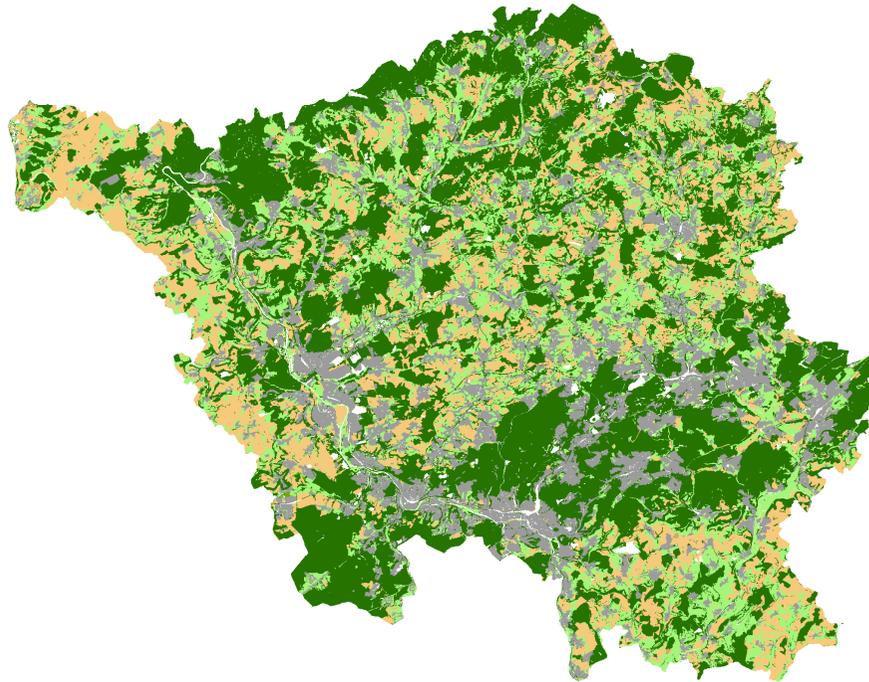➢ two stratification features:

- land classes derived from a cluster analysis including abiotic and biotic information (21 land classes all over Germany)

- land cover classes derived from the nationally standardised Authorative Topographic-Cartographic Information System (ATKIS®).

➢ random distribution of the sample plots within each strata combination between land classes and land cover classes

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Distribution of land cover classes in Germany (e.g. Saarland)

Distribution of land classes in Germany

source: PAN (Planning office for nature conservation), München

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1. Field Mapping

➢ only highly qualified surveying experts

➢ field handbook for the identification of HNV

➢ for grassland, arable fields, vineyards, fallow land: mapping of indicator species sets within transects of 60 m² (for grassland 6 regionally different indicator sets)

➢ for landscape elements: easy valuation with defined mapping codes

	MW	MO	SN	Sued	NW	NO		MW	MO	SN	Sued	NW	NO
Achillea millefolium	x	x	x		x		Luzula spec.					x	x
Achillea ptarmica					x	x	Lychnis flos-cuculi	x	x	x	x	x	x
Agrimonia eupatoria		x	x				Lysimachia vulgaris	x					
Ajuga reptans	x				x		Lythrum salicaria						x
Alchemilla spec.	x		x		x		Meum athamanticum		x	x	x		
Anthoxanthum odoratum			x		x	x	Myosotis scorpioides	x					
Apiaceae spec.					x		Nardus stricta			x			
Armeria spec.			x			x	Orchidaceae spec.	x					
Caltha palustris	x	x	x	x	x	x	Phyteuma spec. (alle Arten)	x			x		
Campanula glomerata	x	x		x		x	Plantago lanceolata					x	
Campanula spec. (übrige Arten)	x	x	x	x		x	Polygala spec.				x		
Cardamine pratensis		x		x	x	x	Polygonum bistorta	x	x	x	x	x	
Carex spec. (Großseggen)					x	x	Potentilla erecta	x		x	x		
Carex spec. (Klein- und Mittelseggen, ohne Carex hirta)					x	x	Primula spec. (Pr. veris + elatior)	x	x	x			
Scirpus spec., Bolboschoenus spec. (Simsen, Strandsimsen)					x		Prunella vulgaris					x	
Carlina vulgaris, Carlina acaulis		x					Ranunculus acris				x	x	x
Centaurea spec. (alle Arten)	x	x	x	x	x	x	Ranunculus auricomus						x
Chamaespartium sagittale			x				Ranunculus flammula					x	
Chrysanthemum leucanthemum	x	x	x	x	x	x	Ranunculus spec. (übrige Arten)						
Cirsium oleraceum		x	x	x	x	x	Rhinanthus angustifolius, Rh. minor	x			x	x	
Cirsium heterophyllum, C. rivulare u. C. palustris			x				Rhinanthus spec. (übrige Arten)				x	x	
Cnidium dubium						x	Rumex acetosa		x	x		x	
Crepis spec.				x			Rumex thyrsiflorus					x	
Daucus carota						x	Salvia pratensis	x	x		x		
Dianthus spec.			x				Sanguisorba minor	x					
Euphorbia cyparissias, Eu. esula	x						Sanguisorba officinalis	x	x	x	x		
Euphrasia spec.			x				Saxifraga granulata	x					x
Galium mollugo agg.		x	x		x	x	Scabiosa spec.	x				x	
Galium spec. (übrige Arten) außer Galium aparine agg.			x		x	x	Silene dioica				x		
Galium verum agg.	x		x		x	x	Stachys officinalis	x					
Genista spec. (kleine Arten)	x						Stellaria graminea, St. palustris					x	x
Geranium pratense, G. sylvaticum	x	x	x	x			Cerastium arvense, Stellaria spec. (übrige Arten)						x
Geranium spec. (übrige Arten)				x			Succisa pratensis	x		x		x	
Geum rivale		x	x	x			Symphytum spec.	x					
Hieracium pilosella	x	x	x	x		x	Thymus serpyllum	x	x	x	x		
Hieracium spec. (übrige Arten)	x			x			Thymus spec. (übrige Arten)	x	x	x			
Hypericum spec. (alle Arten)		x	x				Tragopogon pratensis agg.	x	x		x		x
Hypochaeris radicata				x			Trifolium spec. - nur kleine gelbe Klee	x	x			x	
Inula britannica			x				Trifolium pratense	x			x	x	x
Knautia arvensis		x	x	x	x	x	Trollius europaeus		x	x	x		
Lathyrus pratensis		x			x	x	Valeriana officinalis agg.; Val. dioica	x					
Lathyrus palustris						x	Veronica chamaedrys		x	x		x	x
Leontodon spec.				x			Vicia cracca		x			x	
Lotus spec.	x	x	x		x	x	Vicia sepium		x				

Example:
agricultural landscape
in a plot in
Baden-Wuerttemberg

Koordinaten rechte obere Ecke:
3461954   5358214

Koordinaten linke untere Ecke:
3460954   5357214

Erfassung der HNV-farmland-Bestände

Bundesland:	**Baden-Württemberg**
Losnummer:	**51**
Probeflächennr.	**273**
Landkreis:	**Freudenstadt**
Gemeinde:	**Betzweiler-Wälde**

☐ Probefläche
▦ Nichtkartierflächen (Wald, Siedlung u. ä.)
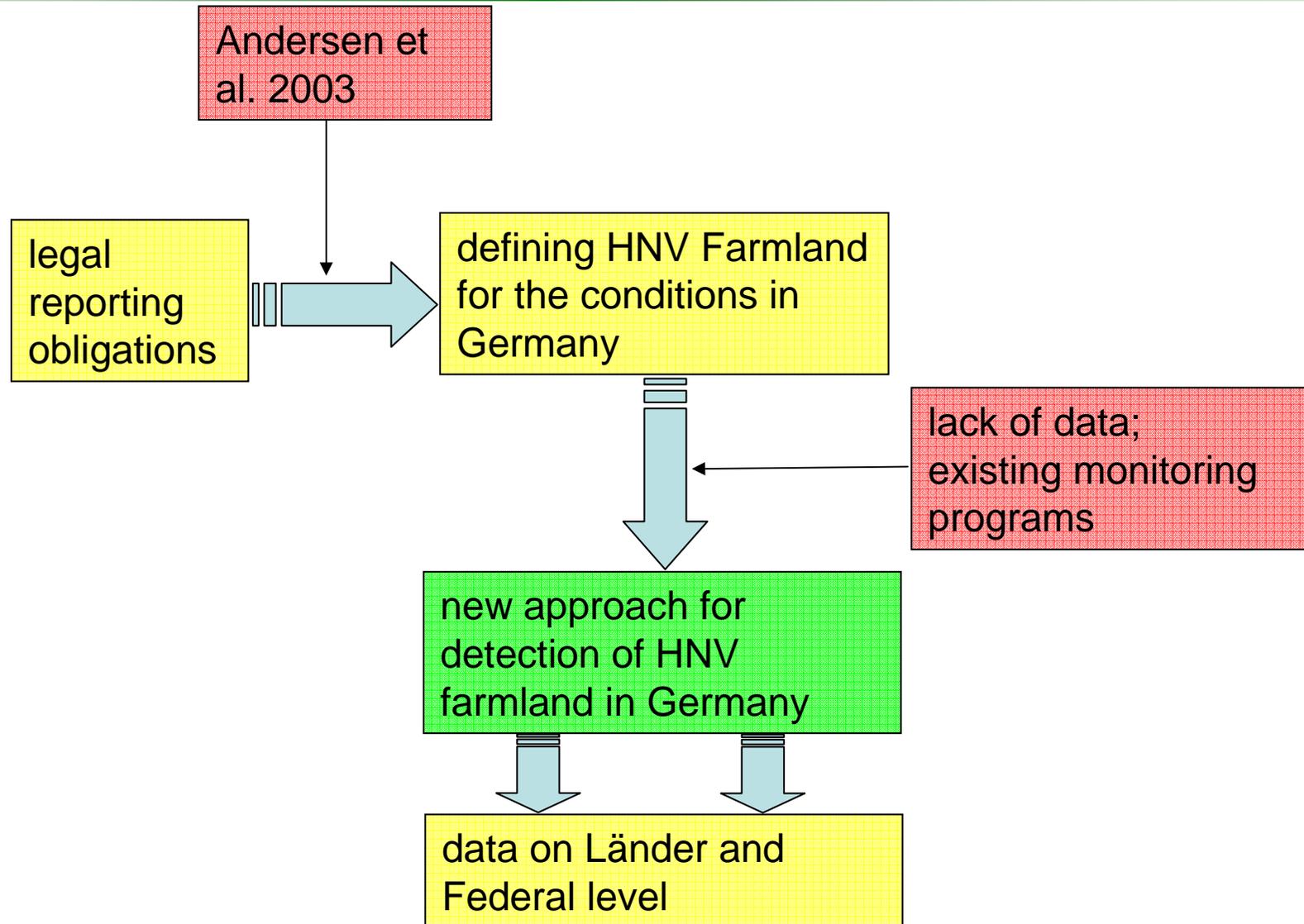
0   150 Meter

Source:

2. Evaluation

➢ on-site assessment of nature value ranging from 1 (extraordinarily high nature value) to 5 (negligible nature value)

➢ only values 1 to 3 are regarded as HNV farmland and taken into consideration for the further analysis

3. Extrapolation

➢ extrapolation of each strata combination on reference area (Länder or national level)

Definition, Identification and Monitoring of HNV Farmland in Germany

Conclusions after the first period

➢ nationwide pilot survey in 2009 successful

➢ annual mapping of ¼ of the sample set is intended

➢ the approach is suitable for the estimation of HNV farmland in Germany.

➢ it's possible to undertake further in depth analysis (depending on data variance).

➢ based on the pilot survey improvement of the method was possible. A detailed feedback leads to the conclusion that the results are a suitable basis for future monitoring.

Definition, Identification and Monitoring of HNV Farmland in Germany

Final Conclusions

➢ One of the first, after nationwide standardized methods arranged official biotope monitoring in nature conservation in Germany.

➢ Data could be used for a variety of nature conservation analysis.

➢ Combined analysis with the nationwide Common breeding bird monitoring for getting further results.

➢ The used method is suitable for countries with a similar agricultural structure like Germany.

➢ The approach enables to detect small scale HNV elements.

Thank you for your attention!