

REVISING THE JRC/EEA EU-LEVEL HNV FARMLAND METHODOLOGY

BREAKOUT SESSION I

**REVIEW OF AVAILABLE NATIONAL DATA AND OPPORTUNITIES
FOR REFINING RULES FOR SELECTION OF CLC CLASSES**

12 June 2017

European Environment Agency
European Topic Centre on Urban,
Land and Soil Systems



ENVIRONMENT
AGENCY AUSTRIA **umweltbundesamt^U**

CASE STUDY AUSTRIA

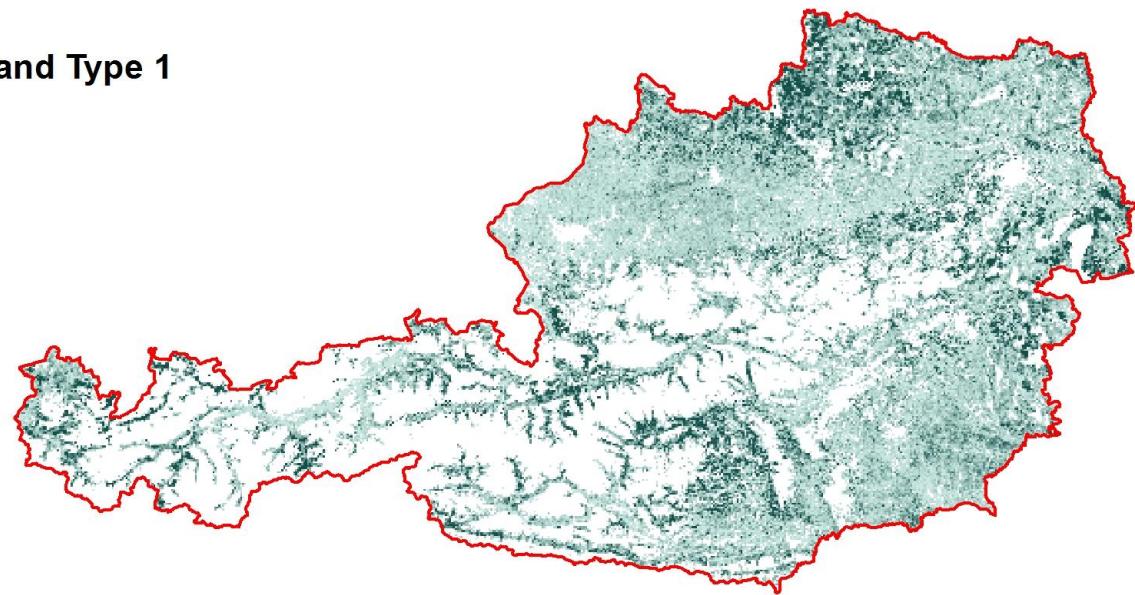
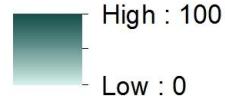
National Austrian HNV farmland dataset

- Designation of HNV farmland Type 1 and Type 2 (Type 3 is not covered)
- HNV Type 1
 - selection of agricultural plots within IACS-database with uses relevant for HNV Type 1 (e.g. extensive grassland etc..)
 - agricultural plots are linked to 1x1 km raster cells
 - for calculation of Type1 of HNV farmland all selected plots per raster cell are summarized within IACS-database (no GIS operation!)
- HNV Type 2
 - for each raster cell calculation of a structural parameter (consisting of number of plots, number of crops, total UAA)
 - if the structural parameter of a raster cell exceeds a certain value all UAA within the raster cell is considered to be HNV Type 2
- Due to the differences in the methodology for Austrian case study only consideration of HNV Type 1

Distribution of national Austrian HNV Type 1 per 1 km raster cell

Legend

National Austrian HNV farmland Type 1



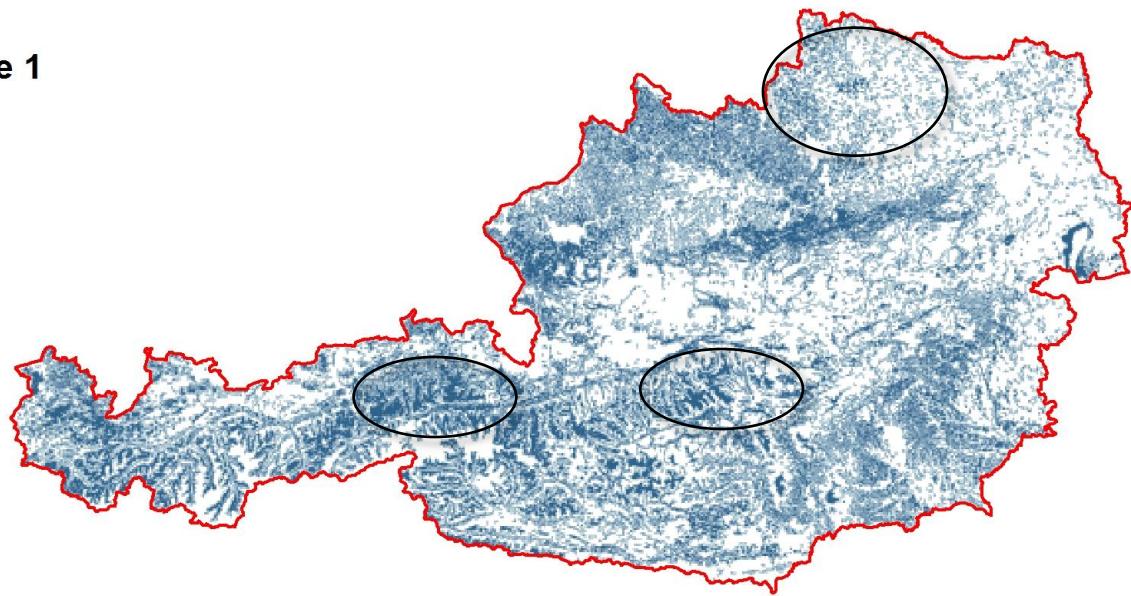
Distribution of European HNV Type 1 in Austria per 1 km raster cell

Legend

European HNV farmland Type 1



CLC	ALS	CONT	MDM	PAN
211	●	●	●	●
212	●	●	●	●
213	●	●	●	●
221	●	●	●	●
222	●	●	●	●
223	●	●	●	●
231	●	●	●	●
241	●	●	●	●
242	●	●	●	●
243	●	●	●	●
244	●	●	●	●
321	●	●	●	●
322	●	●	●	●
323	●	●	●	●
324	●	●	●	●
333	●	●	●	●
411	●	●	●	●
412	●	●	●	●
421	●	●	●	●

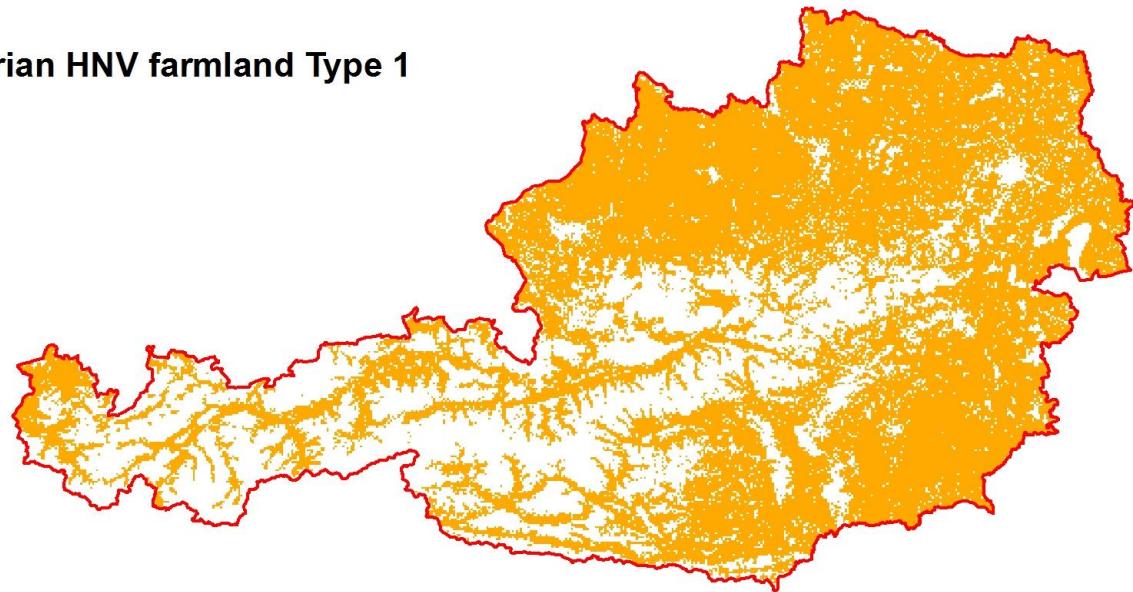


Occurrence of national Austrian HNV Type 1 per 1 km raster cell

Legend

Occurrence of national Austrian HNV farmland Type 1

- no
- yes

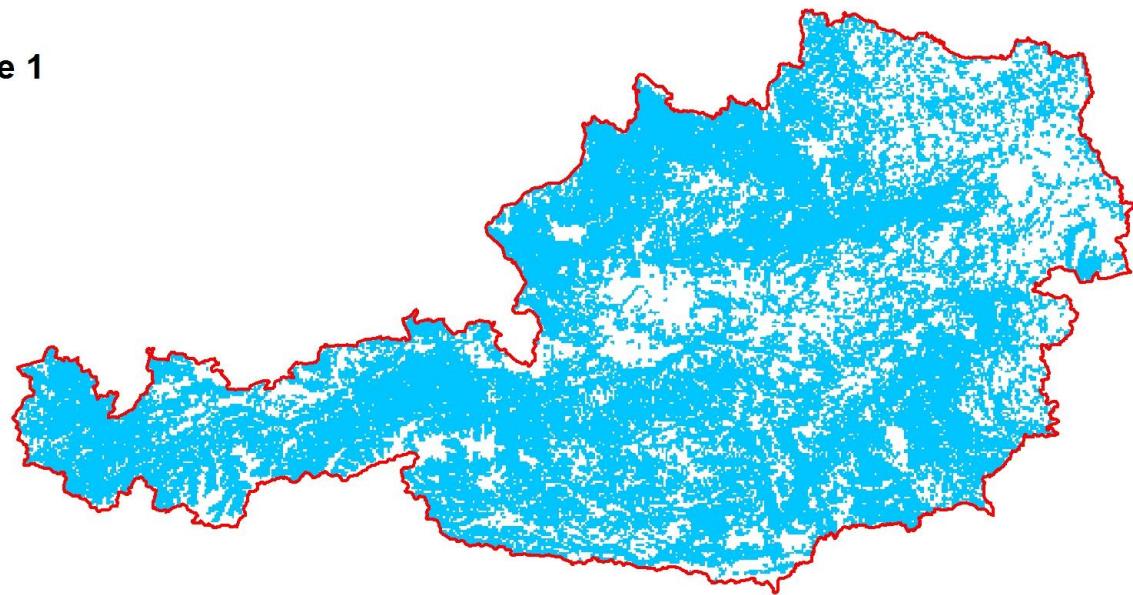


Occurrence of national Austrian HNV Type 1 per 1 km raster cell

Legend

European HNV farmland Type 1

- 0 - no
- 1 - yes

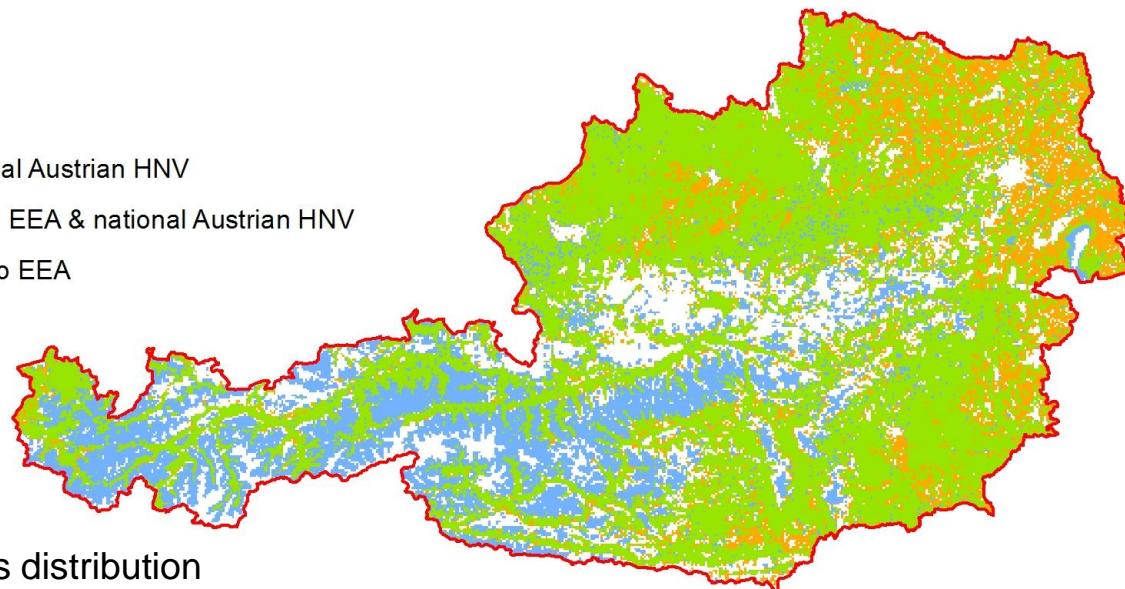


Combined occurrence of European and national Austrian HNV farmland Type 1 km raster cell

Legend

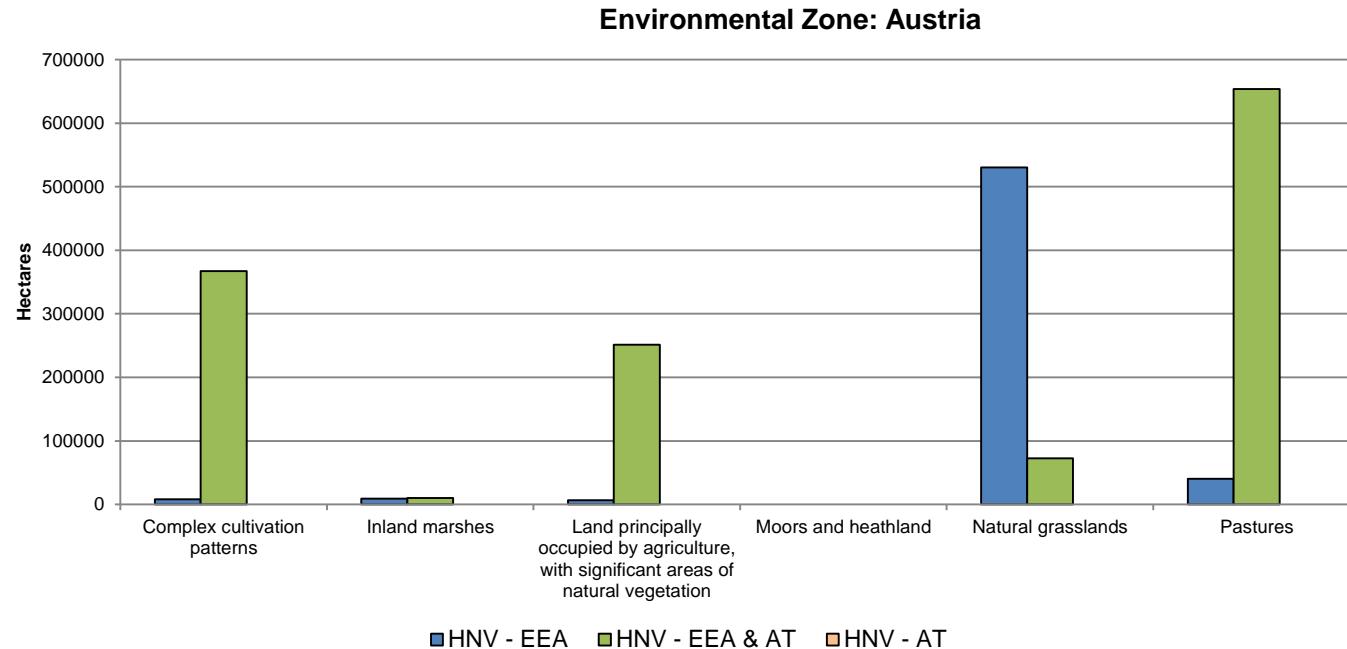
HNV Europe and Austria

- No HNV
- Occurrence according to National Austrian HNV
- Occurrence of HNV according to EEA & national Austrian HNV
- Occurrence of HNV according to EEA



→ Analysis of CLC-Classes distribution
for each type of HNV occurrence and ecoregion

Distribution of CLC-classes within occurrences of European and national Austrian HNV Farmland datasets



Conclusions Austria

- Good correlation with Classes “Complex cultivation patterns”, “Inland marshes”, “Land principally occupied by agriculture” and “pastures”
- European HNV farmland dataset overestimates CLC-Class “Natural grassland” (also “Sparsely vegetated areas” & Moors and heathland) especially in environmental zone “Alpine South”
- CLC-Class “non-irrigated arable land” and (according to EEA approach <> HNV Type 1) shows high correlation with occurrence of national Austrian HNV farmland in environmental zones “Continental” & “Pannonian”

CASE STUDY GERMANY

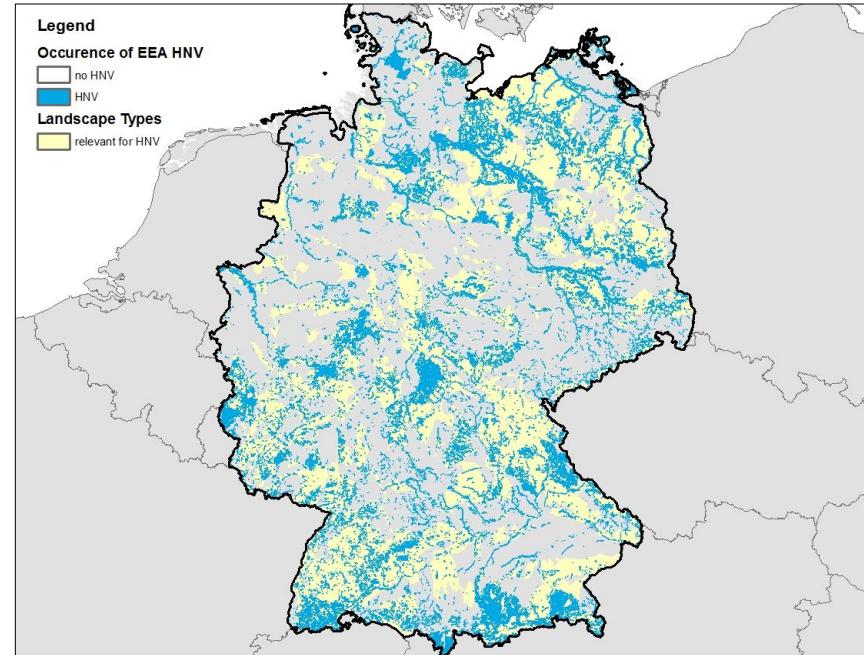
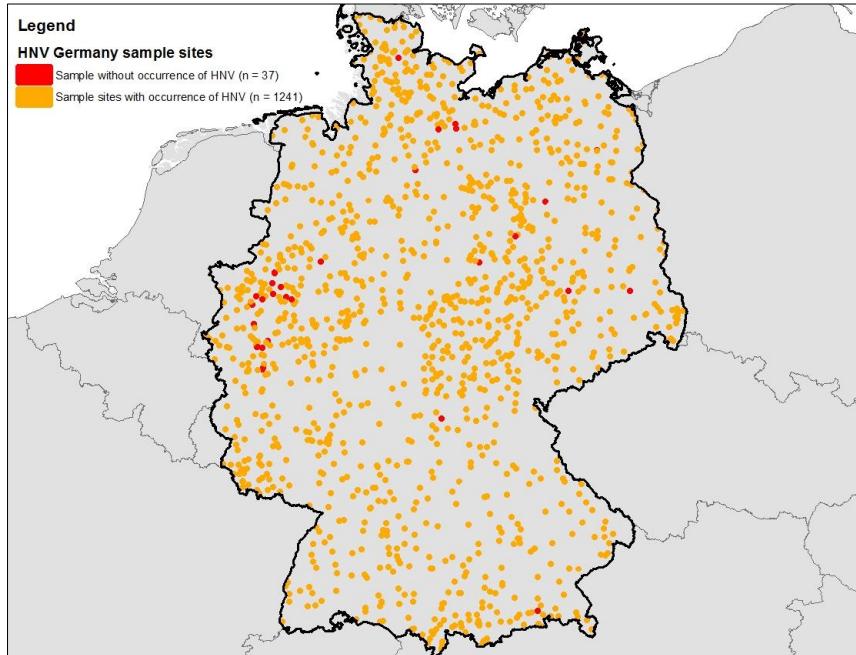
Statistical overview on European and national German HNV farmland (2011)

German federal state	Hectares				Hectares HNV 2012 EEA	% 74,04	% Difference -25,96
	HNV Typ1	HNV Typ2	HNV Typ3	Total			
Baden-Württemberg	49,584	108,219	109,156	266,959	197,662	74,04	-25,96
Bayern	91,541	143,154	169,633	404,328	429,977	106,34	6,34
Berlin					348		
Brandenburg	45,319	78,940	136,528	260,787	206,386	79,14	-20,86
Bremen					2,515		
Hamburg					6,788		
Hessen	29,915	51,034	72,371	153,320	115,495	75,33	-24,67
Mecklenburg-Vorpommern	27,921	53,615	87,010	168,546	241,356	143,20	43,20
Niedersachsen	47,985	123,376	149,135	320,496	207,595	64,77	-35,23
Nordrhein-Westfalen	22,052	59,309	84,401	165,762	97,111	58,58	-41,42
Rheinland-Pfalz	17,231	45,137	64,759	127,127	122,992	96,75	-3,25
Saarland	10,121	9,337	7,505	26,963	13,074	48,49	-51,51
Sachsen	23,615	42,024	61,850	127,489	68,472	53,71	-46,29
Sachsen-Anhalt	13,497	47,020	98,061	158,578	126,054	79,49	-20,51
Schleswig-Holstein	9,589	51,777	39,903	101,269	117,878	116,40	16,40
Thüringen	43,619	45,953	66,302	155,874	77,429	49,67	-50,33
Germany Total	431,989	858,895	1,146,614	2,437,498	2,031,132	83,33	-16,67

Statistical overview on European and national German HNV farmland (2011)

German federal state	Hectares			Hectares HNV 2012 EEA	%	% Difference
	HNV Typ1		HNV Typ3			
Baden-Württemberg	49,584		109,156	158,740	197,662	124.52
Bayern	91,541		169,633	261,174	429,977	164.63
Berlin					348	
Brandenburg	45,319		136,528	181,847	206,386	113.49
Bremen					2,515	
Hamburg					6,788	
Hessen	29,915		72,371	102,286	115,495	112.91
Mecklenburg-Vorpommern	27,921		87,010	114,931	241,356	210.00
Niedersachsen	47,985		149,135	197,120	207,595	105.31
Nordrhein-Westfalen	22,052		84,401	106,453	97,111	91.22
Rheinland-Pfalz	17,231		64,759	81,990	122,992	150.01
Saarland	10,121		7,505	17,626	13,074	74.17
Sachsen	23,615		61,850	85,465	68,472	80.12
Sachsen-Anhalt	13,497		98,061	111,558	126,054	112.99
Schleswig-Holstein	9,589		39,903	49,492	117,878	238.18
Thüringen	43,619		66,302	109,921	77,429	70.44
Germany Total	431,989		1,146,614	1,578,603	2,031,132	128.67
						28.67

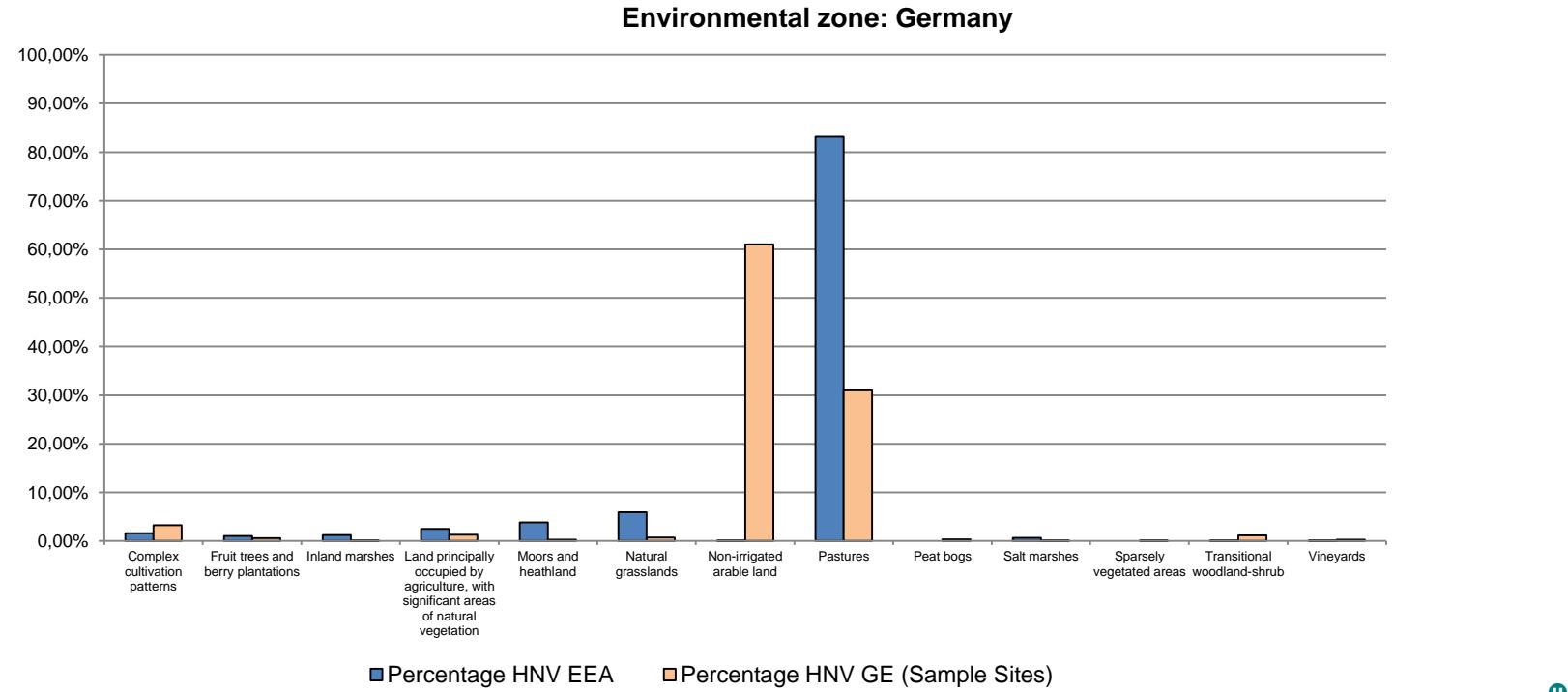
National German HNV and European HNV datasets



→ Analysis of CLC-class distribution within sample sites for each environmental zone

→ Analysis of CLC-class distribution for each environmental zone

Distribution of CLC-classes within occurrences of European and national German HNV farmland datasets



Conclusions Germany

- European dataset mostly shows HNV farmland only in „landscapes worth of protection“ (except “special areas”) - the national German dataset also shows occurrence of HNV outside (=> currently available data does not allow differentiation of HNV Type 1, 2 and 3)
- CLC-Class “non-irrigated arable land” shows high correlation with occurrence of national German HNV farmland and is omitted by EEA-layer
- European dataset highly overestimates CLC-Class „pastures“ (especially in environmental zone „Pannonian“)

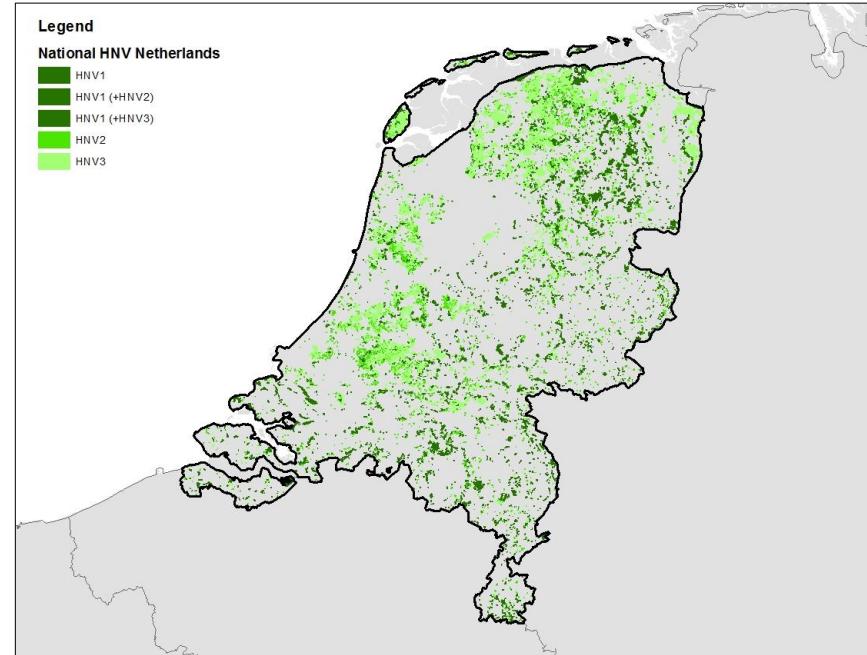
CASE STUDY NETHERLANDS

National HNV dataset Netherlands

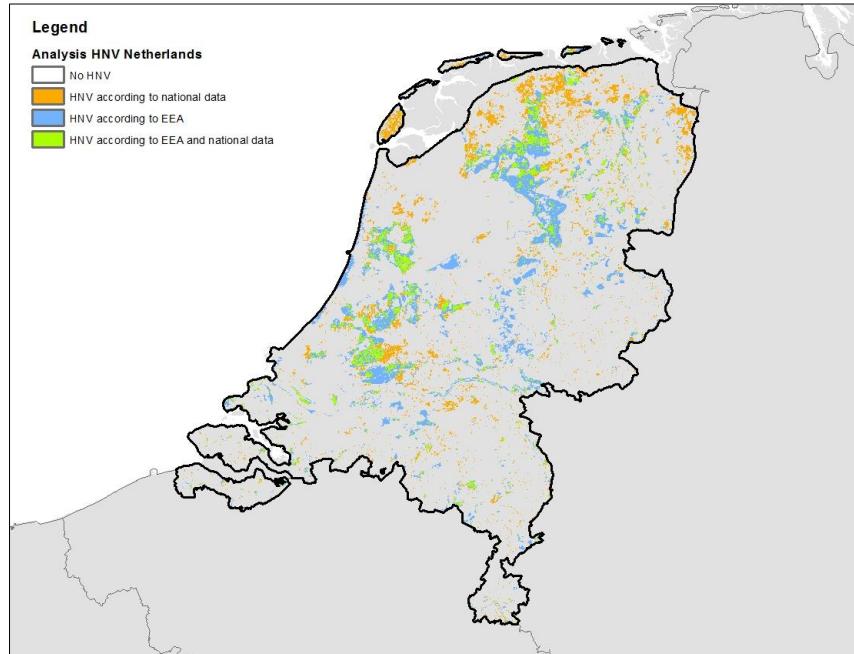
- Original data in vector format
- Designation of HNV farmland Type 1, Type 2, Type 3 and mixed classes

HNV Type	Hectares
HNV1	80.096
HNV1, HNV2	12.532
HNV1, HNV3	5.546
HNV2	45.919
HNV3	144.480
Total	288.574

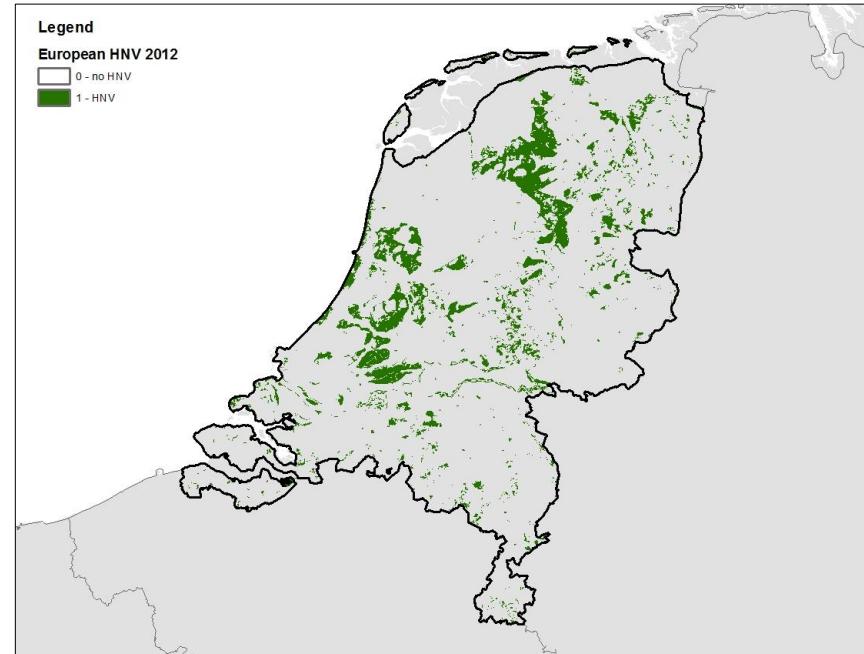
- Rasterization to 100 m to fit with European HNV farmland layer 2012



National and European HNV datasets Netherlands



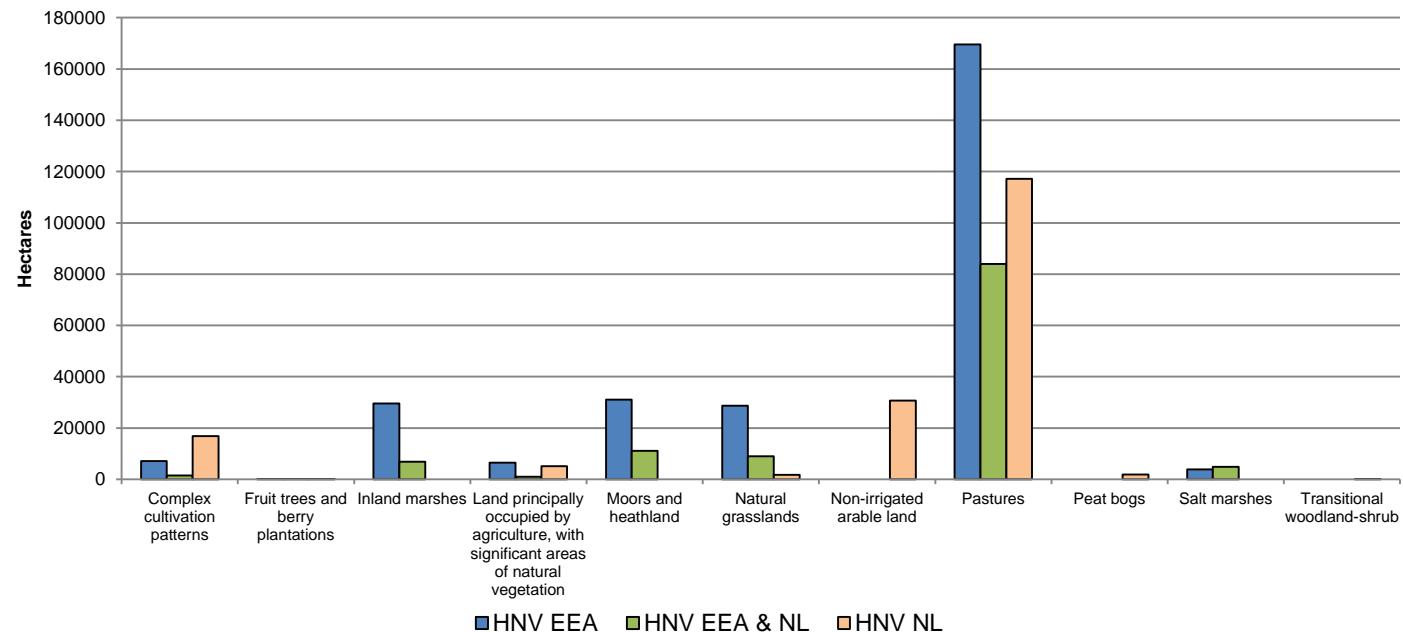
→ Analysis pixel per pixel of CLC-class distribution for each environmental zone



HNV EEA = 394,724 ha (= + 36,8 %)

Distribution of CLC-classes within occurrences of national and European HNV farmland datasets Netherlands

Environmental zone: Netherlands



Conclusions Netherlands

- Low correlation with CLC-class “pastures”: in both Dutch and European dataset there are many areas that show no common occurrence of HNV
- CLC-class “non irrigated arable land” shows high omission of the European HNV farmland dataset
- CLC-classes „inland marshes“, „moors and heathland“ and „natural grassland“ are overestimated by European HNV dataset

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Revising the JRC/EEA EU-level HNV Farmland methodology – Expert workshop
Vienna • 12 June 2017