

LUCAS 2022  
**(Land Use / Cover Area Frame Survey)**

Technical reference document C2  
Field Form (template)

Changes to this document are summarized in the following table in chronological order.

Revision	Date	Created by	Short Description of Changes
0.1	14.01.2021	ESTAT/E4/ZS	Is.log ID 3 - Re-added field bulk label field of 0-10cm by splitting existing 0-20cm to 10-20cm (p.19). Readded the field 0-20cm for bulk sample (p.19). Readded the air-dried sample 10-20cm (p.20)
1.0	12.02.2021	ESTAT/E4/BE	Review and addition of new modules
2.0	18.03.2021	ESTAT/E4/BE	Field numbers
3.0	14.04.2021	ESTAT/E4/BE-ZS	Comments and photos updates
4.0 – 8.1	27.05.2021	ESTAT/E4	Fine-tuning, clarifications on PI, Copernicus, Grassland
8.2	19.02.2022	Lot8/RO	Grassland: final change proposal after PM training
10	24.02.2022	ESTAT/E4	Clarifications after PM training
11	01.03.2022	ESTAT/E4	Fine-tuning, removal of Car park longitude E/W and Point longitude E/W
12	16.03.2022	ESTAT/E4	Fine - tuning, update on photo label in grassland

**Document Location:** The latest version of this controlled document is stored on CIRCABC



## 1 IDENTIFICATION AND ACCESS TO POINT

### 1.1 IDENTIFICATION

A	<b>User ID:</b>	B	<b>Point ID:</b>	C	<b>Point altitude:</b>
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D	<b>PI extension point*:</b> 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No	E	<b>EX-ANTE point*:</b> 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No
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\*If D or E "yes", skip the access to point section

7	<b>Date:</b>	8	<b>Start time:</b>	9	<b>End time:</b>
2001	<b>Comment about survey time [structured comments / other]</b> BF04, BF06, BF07, BF08, BF99				

### 1.2 ACCESS TO POINT

- Skip in case of office PI

11	<b>Car park latitude:</b> (N.R. = 88,888888)			13	<b>Car park longitude:</b> (N.R. = 88,888888)
14	<b>GPS coordinate system:</b> 1 <input type="checkbox"/> WGS84 2 <input type="checkbox"/> Problem with signal <input type="checkbox"/> N.R.	15	<b>GPS precision (meters):</b> (N.R. = 8888)	16	<b>GPS Elevation (meters):</b> (N.R. = 8888)
17	<b>Point latitude:</b> (N.R. = 88,888888)			19	<b>Point longitude:</b> (N.R. = 88,888888)
20	<b>GPS distance to point:</b> (N.R. = 8888)	21	<b>GPS calculated distance to point</b>		

F	<b>Descripton: way to the point from previous campaign</b>
2002	<b>Comment:</b> <b>Way to the point [structured comments / other]: AA</b> <b>Problems with GPS: BE</b> <b>Why different location: BP01-BP07, BP99</b>
4000	<b>Photo:</b> <b>Additional photos as needed.</b> <b>ACCESS_Other (multiple photos possible)</b>

## 2 POINT OBSERVATION

24	<b>Type of observation:</b> 1 <input type="checkbox"/> Field survey, point visible, <= 100 m 2 <input type="checkbox"/> Field survey, point visible, >100 m to point 3 <input type="checkbox"/> Photo-interpretation in the field 4 <input type="checkbox"/> Point not visible. PI not possible 5 <input type="checkbox"/> Out of national territory 6 <input type="checkbox"/> Out of EU 27 7 <input type="checkbox"/> Photo-interpretation in the office	701	<b>Homogeneous plot fills extended window:</b> 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No
25	<b>Direction of observation:</b> 1 <input type="checkbox"/> On the point 2 <input type="checkbox"/> To North 3 <input type="checkbox"/> To East 4 <input type="checkbox"/> N.R.	702 703 704 705	<b>Reason for for looking to North or East (Field 25 = 2,3):</b> 1 <input type="checkbox"/> Border between ___ (LC code) and ___ (LC code) 2 <input type="checkbox"/> Linear Feature ___ (Transect feature code)
2010	<b>Comments about point observation [structured comments / other]</b> <i>(why observation not at the point (distance &gt; 50m, point not visible), access difficult, PI not possible, ground document not clear, problems with marker etc.)</i> <b>Relevant comments codes :</b> Point not reached = AB, AC Other comments for point observation: BA, Point marker problems: BJ, Car damaged: AC01 Panel points located differently: BP01 - BP07, BP99		
4010 4020	<b>Photo:</b> If the point is not visible, take a photo showing why it is not possible to reach the point: OBS_Conflict If the point is visible but the distance is > 100m take a photo showing why it is not possible to reach the point: OBS_Distance		
4030 4040 4050 4060 4070	<b>Photos:</b> Take photos of the point and in the 4 cardinal directions: LCLU_Point, LCLU_North, LCLU_East, LCLU_South, LCLU_West If possible, mark the LUCAS point with an object.		
4080 4090	<b>Photo:</b> If the "look to the north/east" rule is used, take a photo showing the reason for applying the rule: OBS_LTNE If the "look to the north/east" rule is used and the LC is not clearly visible on the point or landscape photos, take a photo of the LC assessed: OBS_LTNE_LC		
4100	<b>Photo:</b> Add any other photo on point observation, as needed: OBS_Other (multiple photos possible)		

## 3 PHOTO INTERPRETATION (to be used if Type of observation is 3 or 7)

- To be done only in case of PI ( OBS\_TYPE 3 or 7)

Generally, all possible features of the LUCAS point that can be identified by the means of photo interpretation (by using ortho-photo and additional sources) shall be coded, but if something cannot be detected clearly and remains questionable, the assessment must be skipped.

710	<b>Poor Ortho-photo conditions ?</b> <b>(For Photo-Interpretation):</b> 1 <input type="checkbox"/> Outdated 2 <input type="checkbox"/> Detail quality issue 2 <input type="checkbox"/> Outdated and Detail quality issue 3 <input type="checkbox"/> No	711	<b>LC/LU assessment by using additional sources</b> <b>(For Photo-Interpretation)</b> 1 <input type="checkbox"/> for LC 2 <input type="checkbox"/> for LU 3 <input type="checkbox"/> for LC/LU 4 <input type="checkbox"/> Not Used
712	<b>Additional sources used</b> <b>(For Photo-Interpretation)</b> 1 <input type="checkbox"/> Google Earth /Google Maps 2 <input type="checkbox"/> Previous Campaign information 3 <input type="checkbox"/> Other additional sources 4 <input type="checkbox"/> No other suitable sources available	713	<b>Only assessment on lower detail level possible:</b> 1 <input type="checkbox"/> for LC 2 <input type="checkbox"/> for LU 3 <input type="checkbox"/> for LC/LU 4 <input type="checkbox"/> No restriction, full assessment possible
200	<b>Comment needed if additional sources for Photo-interpretation used [structured comments / other]</b> <b>Comments on Orthophoto: BA02, BA03, BA99</b> <b>Additional source: BD08, LU03</b>		

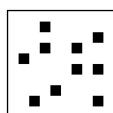
#### 4 LAND COVER AND LAND USE

28	<b>LC1 land cover 1:</b> In case of PI, in addition to the detailed classification, also an aggregated classification can be used (C1 document, chapter 9.2.2)	31	<b>LC2 land cover 2:</b> In case of PI, in addition to the detailed classification, also an aggregated classification can be used (C1 document, chapter 9.2.2)	34	<b>LU1 land use 1:</b> In case of PI, in addition to the detailed classification, also an aggregated classification can be used (C1 document, chapter 9.2.5)	37	<b>LU2 land use 2:</b> In case of PI, in addition to the detailed classification, also an aggregated classification can be used (C1 document, chapter 9.2.5)
29	<b>LC1 crop species:</b> <b>(if LC1 = BXX is "Other")</b> List of detailed crop species (C1 document, chapter 9.2.3)  In case of PI (observation type 3 or 7) add an option " Assessment not possible " (Option will give an error if used for obs types 1, 2)	32	<b>LC2 crop species:</b> <b>(if LC2 = BXX is "Other")</b> List of detailed crop species (C1 document, chapter 9.2.3)  In case of PI (observation type 3 or 7) add an option " Assessment not possible " (Option will give an error if used for obs types 1, 2)	35	<b>LU1 land use type:</b> List of alphanumeric codes (C1 document, chapter 9.2.6)  In case of PI (observation type 3 or 7) add an option " Assessment not possible " (Option will give an error if used for obs types 1, 2)	38	<b>LU2 land use type:</b> List of alphanumeric codes (C1 document, chapter 9.2.6)  In case of PI (observation type 3 or 7) add an option " Assessment not possible " (Option will give an error if used for obs types 1, 2)
30	<b>LC1 Crop-coverage (%):</b> <b>(if LC1 = BXX)</b>	33	<b>LC2 Crop-coverage (%):</b> <b>(if LC2 = BXX)</b>	36	<b>LU1 coverage (%):</b> In case of PI (observation type 3 or 7) insert 1 for " Assessment not possible "	39	<b>LU2 coverage (%):</b> In case of PI (observation type 3 or 7) insert 1 for " Assessment not possible "

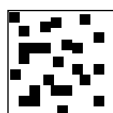
2030	<b>Comment needed if LC1 or LC2 or LU1 or LU2 different from last survey [structured comments / other]</b> Panel points classified differently than in previous campaign: BP08 – BP09, BP11 – BP15, BP99 Other panel point coments: BP01 – BP07 <b>Other comments on land cover/land use:</b>
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	BD01, BD02, BD03, BD04, BD05, BD99, LL99
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4110	<b>Photos:</b>
4120	If the land cover (LC1 and/or LC2) is B, C, D, E take a crop cover photo: LCLU_CropLC1, LCLU_CropLC2
4150	<b>Photo:</b> Take any additional Land cover land use photo as needed: LCLU_Other (multiple photos possible)



10%



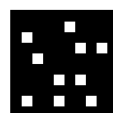
25%



50%



75%



90

40	<b>Parcel area (ha):</b>		
	1 <input type="checkbox"/> area < 0.1		
	2 <input type="checkbox"/> 0.1 ≤ area < 0.5		
	3 <input type="checkbox"/> 0.5 ≤ area < 1		
	4 <input type="checkbox"/> 1 ≤ area < 10		
	5 <input type="checkbox"/> area ≥ 10		
	6 <input type="checkbox"/> N.R.		

## 5 INSPIRE

INSPIRE PLCC (Pure Land Cover Components) will be assessed on all points, based on bird-eye view, in the whole **extended window of observation!**

	Class	Percentage (0 – 100, 1% steps); Total = 100%
718	Artificial constructions	
719	Arable Land	
83	Coniferous forest trees	
84	Broadleaved forest trees	
85	Shrubs	
86	Herbaceous plants	
87	Lichens and mosses	
88	Consolidated (bare) surface	
89	Unconsolidated (bare) surface	
720	Permanent woody and shrubby crops	
721	Wetlands and marshes	
722	Organic deposits (peatland)	
723	Chemical deposits	
724	Intertidal flats	
725	Fresh water course	
726	Fresh water bodies	
727	Salt or brackish water	
728	Permanent snow and ice	

80	<b>Point in urban area?:</b> 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No 3 <input type="checkbox"/> N.R.	81	<b>Unvegetated Area (%) (0 – 100):</b> *To be assessed inside the whole extended window of observation (20m radius) and based on birds eye view
2040	<b>Comment needed if unvegetated Area partly assessed partly through PI, if obs type 1 or 2 [structured comments / other] (TA01)</b>		
4160	<b>Photo:</b> Take any photo on issues related to INSPIRE as needed: INSPIRE_Other (multiple photos possible)		

## 6 FAO PARAMETERS\*

\*For points with trees in CX0, D10, E10 and for all points with crops in B70 or B80

42	<b>Height of trees (CXX, D10, E10)/crops (B70,B80) at survey</b> 1 <input type="checkbox"/> < 5 m 2 <input type="checkbox"/> ≥ 5 m 3 <input type="checkbox"/> N.R. 4 <input type="checkbox"/> Assessment not possible (only available in case of PI: obs type 3 or 7) (Option will give an error if used for obs types 1, 2)	43	<b>Height of trees (CXX, D10, E10)/crops (B70,B80) at maturity</b> 1 <input type="checkbox"/> < 5 m 2 <input type="checkbox"/> ≥ 5 m 3 <input type="checkbox"/> N.R. 4 <input type="checkbox"/> Assessment not possible (only available in case of PI: obs type 3 or 7) (Option will give an error if used for obs types 1, 2)	44	<b>Width of feature:</b> 1 <input type="checkbox"/> < 20 m 2 <input type="checkbox"/> ≥ 20 m 3 <input type="checkbox"/> N.R.
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4170	<b>Photo:</b> Take any photo on issues related to FAO parameters as needed: FAO_Other (multiple photos possible)
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## 7 LAND MANAGEMENT

\*Only for points with LC = BXX, CXX, DXX, EXX, FXX, HXX except standing vegetation and crop residues which are only to be assessed for BXX.

\* In fields in slope, it is specially important to assess these aspects down the slope.

\*Follow the guidelines in the soil manual 3 of the Technical Instructions to assess the presence of stone walls, hedgerows, grass margins and surface cover.

49	<b>Presence of stone walls:</b> 1 <input type="checkbox"/> No 2 <input type="checkbox"/> Stone wall, not maintained 3 <input type="checkbox"/> Stone wall, well maintained 4 <input type="checkbox"/> N.R.	730	<b>Presence of hedgerows:</b> 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No 3 <input type="checkbox"/> N.R.	51	<b>Presence of grass margins:</b> 1 <input type="checkbox"/> No 2 <input type="checkbox"/> Grass margins ≤ 1m width 3 <input type="checkbox"/> Grass margins > 1m width 4 <input type="checkbox"/> N.R.
731	<b>Presence of combined grass margin + hedgerow:</b> 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No 3 <input type="checkbox"/> N.R.				

732	<b>Presence of soil surface covers: standing vegetation</b> 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No 3 <input type="checkbox"/> N.R.	733	<b>Percentage of surface cover by standing vegetation</b> 1 <input type="checkbox"/> 0-25% 2 <input type="checkbox"/> 25-50% 3 <input type="checkbox"/> 50-75% 4 <input type="checkbox"/> 75-100%
734	<b>Presence of soil surface covers: crop residues</b> 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No 3 <input type="checkbox"/> N.R.	735	<b>Percentage of surface cover by crop residues</b> 1 <input type="checkbox"/> 0-25% 2 <input type="checkbox"/> 25-50% 3 <input type="checkbox"/> 50-75% 4 <input type="checkbox"/> 75-100%
2050	<b>Other Land Management comments if relevant[structured comments / other] (QA99)</b>		
4180	<b>Photo:</b> Take any photo on issues related to land management as needed: LANDMNG_Other (multiple photos possible)		

## 8 SPECIAL REMARKS

53	<b>Signs of grazing in the field (for points with LC in BXX, CXX, DXX, EXX, FXX, HXX):</b> 1 <input type="checkbox"/> Visible signs of grazing 2 <input type="checkbox"/> No signs of grazing 3 <input type="checkbox"/> N.R.	54	<b>Special status:</b> 1 <input type="checkbox"/> Protected 2 <input type="checkbox"/> Hunting 3 <input type="checkbox"/> Protected and Hunting 4 <input type="checkbox"/> No special status 5 <input type="checkbox"/> N.R.	55	<b>Special remarks on land cover/ land use:</b> 1 <input type="checkbox"/> Crop not recognizable - Field harvested (no re-visit) 2 <input type="checkbox"/> Crop not recognizable - Tilled and/or sowed (To be re-visited) 3 <input type="checkbox"/> Clear cut 4 <input type="checkbox"/> Burnt area 5 <input type="checkbox"/> Fire break 6 <input type="checkbox"/> Nursery 7 <input type="checkbox"/> Dump site 8 <input type="checkbox"/> Currently dry (river bed / lake) 9 <input type="checkbox"/> Currently flooded 10 <input type="checkbox"/> No Remark 11 <input type="checkbox"/> N.R.
2060	<b>Comment needed if there is a windthrow [structured comments / other] (BD07)</b>				
4190	<b>Photo:</b> Take any photo on issues related to special remarks as needed: REMARK_Other (multiple photos possible)				

## 9 GULLY EROSION

For all points visited in the field.

Follow the guidelines for assessing gully erosion (manual 3) in the Technical Instructions to fill in this section.

### 9.1 CAN YOU SEE SIGNS OF GULLY EROSION?

740	<b>Can you see signs of gully erosion?</b> 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No		
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## 9.2 WHAT TYPE OF GULLY EROSION DO YOU OBSERVE?

741	<b>What type of gully</b> do you observe? 1 <input type="checkbox"/> Ephemeral gully (affects only the topsoil, <0.5 m deep) 2 <input type="checkbox"/> Permanent gullies (affects both topsoil and subsoil, 0.5-30 m deep) 3 <input type="checkbox"/> Badlands (i.e. gullied landscape areas)		
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## 9.3 DETAILS OF THE LARGEST GULLY

Only for ephemeral or permanent gullies. Not necessary to answer these question in the case of badlands.

742	<b>Direction from point:</b> <input type="checkbox"/> North <input type="checkbox"/> East <input type="checkbox"/> South <input type="checkbox"/> West	743	<b>Mean length (L) in meters</b> (<1, 1-10, 10-50, 50-100, > 100):	744	<b>Mean width (W) in meters</b> (<1, 1-5, 5-10, 10-20, >20):	745	<b>Mean depth (D) (in meters)</b> (<0.3, 0.3-1, 1-5, 5-10, >10):
2070	<b>Other Erosion comments if relevant [structured comments / other] (RA99)</b>						
4200	<b>Photo:</b>						
4210	Take a photo of the biggest gully: GULLY_Biggest						
	Take any other photo on issues related to gully erosion as needed: GULLY_Other (multiple photos possible)						

## 10 WATER MANAGEMENT\*

\* Only if (LU = U111 or U112) and/or Grassland module assessed

251	<b>Presence of water management:</b> 1 <input type="checkbox"/> Irrigation 2 <input type="checkbox"/> Potential irrigation 3 <input type="checkbox"/> Drainage 4 <input type="checkbox"/> Irrigation and drainage 5 <input type="checkbox"/> No visible water management 6 <input type="checkbox"/> N.R.	252	<b>Type of irrigation:</b> 1 <input type="checkbox"/> Gravity 2 <input type="checkbox"/> Pressure: Sprinkler irrigation 3 <input type="checkbox"/> Pressure: Micro-irrigation 4 <input type="checkbox"/> Gravity/Pressure 5 <input type="checkbox"/> Other/not identifiable 6 <input type="checkbox"/> N.R.
253	<b>Source of irrigation:</b> 1 <input type="checkbox"/> Well 2 <input type="checkbox"/> Pond/Lake/Reservoir 3 <input type="checkbox"/> Stream/Canal/Ditch 4 <input type="checkbox"/> Lagoon/Wastewater 5 <input type="checkbox"/> Other/not identifiable 6 <input type="checkbox"/> N.R.	254	<b>Delivery System:</b> 1 <input type="checkbox"/> Canal 2 <input type="checkbox"/> Ditch 3 <input type="checkbox"/> Pipeline 5 <input type="checkbox"/> Other/not identifiable 6 <input type="checkbox"/> N.R.
748	<b>Signs of use of reclaimed water:</b> 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No		
4220	<b>Photo:</b> Take photos of features present: „WATERMNG_Other“ (if features are present (at least one feature has been selected), then at least one photo is needed) (multiple photos possible)		

## 11 COPERNICUS

The Copernicus module is only assessed if:

- The point is part of the Copernicus module
- Observation type = 1, 2 or 3
- Point reached by the surveyor is not on a linear feature < 3m width, nor on a small object with a diameter <3m

The Copernicus LC is registered at level 3.

\* Only collect Copernicus data if point is part of Copernicus module and Field 24 (observation type) is 1, 2 or 3

G	<b>Copernicus point:</b> 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No		
57	<b>Can you do the Copernicus survey?</b> 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No	58	<b>Copernicus LC:</b>

	<b>Extension in Copernicus LC in 4 cardinal directions (in m)</b> Values: 0-51 (m) Extension >50: always insert 51	
N	60	
E	61	
S	62	
W	63	

2080	<b>Comment about Copernicus [structured comments / other] (PA01, PA02, PA04, PA99)</b> <b>If Copernicus is not possible PA04 is needed.</b>
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4230	<b>Photo:</b> Take photo of Copernicus and cover: COPERNICUS_LC (No point marker)
4240	Take other photos as needed: COPERNICUS_Other (multiple photos « other » possible)

## 12 TREES WITH SECONDARY CROPS, MEADOW OR PASTURE

\* Only for points with trees (permanent crops included)

749	<b>Trees with secondary crops or grazing 2 (within the extended + homogenous plot)</b> 1 <input type="checkbox"/> Cultivated trees with secondary crops, meadow or pasture (X06) 2 <input type="checkbox"/> Forest trees with grazed grassland, heathland and/or woodland flora (X09) 3 <input type="checkbox"/> NR (Not relevant or neither X06 nor X09)	2090	<b>Trees with secondary crops or grazing [structured comments / other]: (HA99)</b>
4250	<b>Photo:</b> Take photos as needed: TREEWITH_Other (multiple photos possible)		

## 13 EXTENDED GRASSLAND

“Can do” can be “YES” ONLY if LC1 = EXX and OBS\_TYPE = 1.

But even if these conditions are satisfied, the grassland survey might not be possible, because the point is too far away.

### 13.1 ASSESSMENT POSSIBLE?

Q	<b>Extended grassland point:</b> 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No
752	<b>Can you do the extended grassland survey? (e.g. if the point is too far away, it cannot be done)</b> 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No
2100	<b>Comment GE01 needed in case the grassland survey cannot be done.</b>

### 13.2 GRASSLAND COMPOSITION (extended window + homogenous plot)

753	<b>Grassland composition</b> <input type="checkbox"/> Graminoids (grass-like) dominated (>75%) <input type="checkbox"/> Forbs (herbaceous) dominated (>75%) <input type="checkbox"/> Mixed: graminoids/forbs (grass-forbs) (both >25%)
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### 13.3 CONDITIONAL EXTENDED GRASSLAND PARAMETERS

➔ To be done only if extended grassland point, “Can you do the extended grassland survey” is true AND if the point is NOT part of the grassland module

➔ **For clarification this means:**

if the point is **part of the grassland module** you can directly switch from here to the grassland module (14)

if the point is **NOT part** of the grassland module the you continue here with data entry till the end of section (13)

#### 13.3.1 Vegetation layers

##### 13.3.1.1 Grass-forb-ratio (sum 100, e.g. 20:80, 60:40) (extended window + homogenous plot)

754	Grass-forb ratio <input type="checkbox"/> Grass : Forb = 100 : 0 * <input type="checkbox"/> Grass : Forb = 90 : 10 <input type="checkbox"/> Grass : Forb = 80 : 20 <input type="checkbox"/> Grass : Forb = 70 : 30 <input type="checkbox"/> Grass : Forb = 60 : 40 <input type="checkbox"/> Grass : Forb = 50 : 50 <input type="checkbox"/> Grass : Forb = 40 : 60
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<input type="checkbox"/> Grass : Forb = 30 : 70 <input type="checkbox"/> Grass : Forb = 20 : 80 <input type="checkbox"/> Grass : Forb = 10 : 90 <input type="checkbox"/> Grass : Forb = 0 : 100
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\* Rounding up applies: if there is e.g. 4 % forb cover it's still 100:0%, if there is 6 % forb cover it's 90:10%

### 13.3.1.2 Layer components (extended window + homogenous plot)

**Herbaceous layer + Bare layer + Woody layer = 100 %**

<p>755 <b>Herbaceous layer* (%) :</b></p> <p>1 <input type="checkbox"/> 0 %  2 <input type="checkbox"/> &gt;0 - 3 %  3 <input type="checkbox"/> &gt;3 - 8 %  4 <input type="checkbox"/> &gt;8 - 15 %  5 <input type="checkbox"/> &gt;15 - 25 %  6 <input type="checkbox"/> &gt;25 - 40 %  7 <input type="checkbox"/> &gt;40 - 60 %  8 <input type="checkbox"/> &gt;60 - 80 %  9 <input type="checkbox"/> &gt;80 – 100 %</p> <p>* = includes graminoids, forbs, mosses, lichens, funghi (except mosses and lichens on stones / rocks)</p>	<p>756 <b>Bare layer** (%) :</b></p> <p>1 <input type="checkbox"/> 0 %  2 <input type="checkbox"/> &gt;0 - 3 %  3 <input type="checkbox"/> &gt;3 - 8 %  4 <input type="checkbox"/> &gt;8 - 15 %  5 <input type="checkbox"/> &gt;15 - 25 %  6 <input type="checkbox"/> &gt;25 - 40 %  7 <input type="checkbox"/> &gt;40 - 60 %  8 <input type="checkbox"/> &gt;60 - 80 %  9 <input type="checkbox"/> &gt;80 – 100 %</p> <p>** = pure soil, sand, stones, rocks, also dead leaves</p>	<p>757 <b>Woody layer (%):</b>  <b>(only features that touch the ground or are &lt; 1m in height)</b></p> <p>1 <input type="checkbox"/> 0 %  2 <input type="checkbox"/> &gt;0 - 3 %  3 <input type="checkbox"/> &gt;3 - 8 %  4 <input type="checkbox"/> &gt;8 - 15 %  5 <input type="checkbox"/> &gt;15 - 25 %  6 <input type="checkbox"/> &gt;25 - 40 %  7 <input type="checkbox"/> &gt;40 - 60 %  8 <input type="checkbox"/> &gt;60 - 80 %  9 <input type="checkbox"/> &gt;80 – 100 %</p>
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<p><b>Woody layer components (crown coverage*)</b>  <b>(extended window + homogenous plot)</b>  <b>(Sum of percentages max. 100 %, if from birds eye perspective no grass cover can be seen on the ground)</b></p> <p><b>* estimate the coverage of all woody plants as seen from the birds eye perspective</b></p>	<p><b>Percentage</b></p> <p>1 <input type="checkbox"/> 0 %  2 <input type="checkbox"/> &gt;0 - 3 %  3 <input type="checkbox"/> &gt;3 - 8 %  4 <input type="checkbox"/> &gt;8 - 15 %  5 <input type="checkbox"/> &gt;15 - 25 %  6 <input type="checkbox"/> &gt;25 - 40 %  7 <input type="checkbox"/> &gt;40 - 60 %  8 <input type="checkbox"/> &gt;60 - 80 %  9 <input type="checkbox"/> &gt;80 – 100 %</p>	
758	Orchards	Tick boxes
759	Old trees	
760	Shrubs	
761	Dwarf shrubs	
762	Other wooded	

### 13.3.2 Grassland type (extended window + homogenous plot)

765	<p>Grassland type:</p> <p><input type="checkbox"/> eC11 – Very intensive meadow  <input type="checkbox"/> eC12 - Intensive meadow  <input type="checkbox"/> eC13- Medium intensive meadow  <input type="checkbox"/> eC14 - Extensive meadow  <input type="checkbox"/> eC15 – Very extensive meadow</p>
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	<input type="checkbox"/> eC16 - Meadow or pasture (or both uses) <input type="checkbox"/> eC21 - Intensive pasture <input type="checkbox"/> eC22 - Medium intensive pasture <input type="checkbox"/> eC23 - Extensive pasture <input type="checkbox"/> eC24 - Only occasionally grazed (very extensive) <input type="checkbox"/> eC25 - Pastured woodland <input type="checkbox"/> eC31 - Ruderal / fallow grassland <input type="checkbox"/> eC41 - Amenity grassland <input type="checkbox"/> eC51 -Unclear / Other kinds of grassland
--	--

### 13.3.3 Growth status (extended window + homogeneous plot)

766	<p>Grassland growth status:</p> <input type="checkbox"/> Grassland not yet mown or pastured <input type="checkbox"/> Grassland mown or pastured a few days ago - (Cut /pastured grass / herbs, either lying on the ground or having been removed from plot, and vegetation ~ <20 cm – no inflorescences or blossoms) <input type="checkbox"/> Grassland in growth after mowing / grazing – (Vegetation > 20 cm) <input type="checkbox"/> NR
-----	--

### 13.3.4 Grassland EUNIS Habitat Type (extended window + homogenous plot)

767	<p><b>EUNIS Grass habitat type:</b>  List of alphanumeric codes:</p> <input type="checkbox"/> D1 - Raised and blanket bogs <input type="checkbox"/> D2 - Valley mires, poor fens and transition mires <input type="checkbox"/> D3 - Aapa, palsa and polygon mires <input type="checkbox"/> D4 - Base-rich fens and calcareous spring mires <input type="checkbox"/> D5 - Sedge and reedbeds, normally without free-standing water <input type="checkbox"/> D6 - Inland saline and brackish marshes and reedbeds <input type="checkbox"/> E1 - Dry grasslands <input type="checkbox"/> E2 - Mesic grasslands <input type="checkbox"/> E3 - Seasonally wet and wet grasslands <input type="checkbox"/> E4 - Alpine and subalpine grasslands <input type="checkbox"/> E5 - Woodland fringes and clearings and tall forb stands <input type="checkbox"/> E6 - Inland salt steppes <input type="checkbox"/> E7 - Sparsely wooded grasslands: E7.1, E7.2, E7.3 <input type="checkbox"/> F3 - Temperate and mediterranean-montane scrub <input type="checkbox"/> F4 - Temperate shrub heathland <input type="checkbox"/> F5 - Maquis, arborescent matorral and thermo-Mediterranean brushes <input type="checkbox"/> F6 - Garrigue <input type="checkbox"/> G1 - Broadleaved deciduous woodland <input type="checkbox"/> G2 - Broadleaved evergreen woodland <input type="checkbox"/> G3 - Coniferous woodland
-----	--

	<input type="checkbox"/> G4 - Mixed deciduous and coniferous woodland <input type="checkbox"/> G5 - Lines of trees, small anthropogenic woodlands, recently felled woodland, early-stage woodland and coppice <input type="checkbox"/> I1 - Arable land and market gardens: I1.5 Bare tilled, fallow or recently abandoned arable land <input type="checkbox"/> XX - Other <input type="checkbox"/> N.R. - Not Relevant
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2010	<b>Extended Grassland [structured comments / other]: (GE02, GE99)</b>
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### 13.4 Photos

4260	<b>Photo:</b> Take photos as needed: EXTGRASS_Other (multiple photos possible)
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### 14 GRASSLAND\* (check either on transect (20\*2.5m), enlarged transect (20\*10m) or field)

\*Skip grassland module in case of PI (In principle Grassland should not be required on points with OBS\_TYPE 7 (conditions for the sample points), but if points are changed at the beginning of the survey, what happens?)

\*Skip grassland module if point is not part of grassland module

\*Skip grassland module if Field 24 – Observation type is not 1

\*Skip grassland module if grass cover < 30% (grass cover refers to the herbaceous layer: graminoids, forbs, mosses, lichens, fungi) (except for mosses/lichens on rocks) (it is not the INSPIRE grass cover).

H	<b>Grassland point:</b> 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No	I	<b>GRASS region:</b> List of 10-20 regions
96	<b>Grassland survey possible?*</b> 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No <input type="checkbox"/> N.R.	2120	<b>Grassland survey cannot be done [structured comments / other like GPX mandatory if field 96 is No]: (GN02)</b>

\*If Field 96 – Grass survey possible is NO skip the grassland module and go to the next module

#### 14.1 GRASSLAND SITE (enlarged transect)

100	<b>Site orientation:</b> 1 <input type="checkbox"/> Flat 2 <input type="checkbox"/> N 3 <input type="checkbox"/> NE 4 <input type="checkbox"/> E 5 <input type="checkbox"/> SE 6 <input type="checkbox"/> S	101	<b>Site slope (in %):</b> <b>Possible values (%):</b> (in degrees °) <input type="checkbox"/> 0 % (= 0°) <input type="checkbox"/> >0-3 % (= 0 – 1.7°) <input type="checkbox"/> >3 -8 % (= 3.5 – 5.5°) <input type="checkbox"/> >8-15 % (= 5.5 – 8.5°) <input type="checkbox"/> >15-25 % (= 8.5 - 14°)
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	7 <input type="checkbox"/> SW 8 <input type="checkbox"/> W 9 <input type="checkbox"/> NW 10 N.R.		<input type="checkbox"/> <b>&gt;25-40 %</b> (= 14 - 22°) <input type="checkbox"/> <b>&gt;40 %</b> (= > 22°) <input type="checkbox"/> <b>N.R.</b>
102	<b>Site moisture:</b> 1 <input type="checkbox"/> Wet 2 <input type="checkbox"/> Moist 3 <input type="checkbox"/> Mesic 4 <input type="checkbox"/> Semi-dry 5 <input type="checkbox"/> Dry 6 <input type="checkbox"/> Mixed 7 <input type="checkbox"/> N.R.		

#### 14.2 GRASSLAND FERTILISATION (enlarged transect / field)

106	<b>Fertilisation:</b> 1 <input type="checkbox"/> No 2 <input type="checkbox"/> Probably 3 <input type="checkbox"/> For sure 4 <input type="checkbox"/> Unclear 5 <input type="checkbox"/> N.R.		
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#### 14.3 GRASSLAND TYPE (enlarged transect/field)

768	Grassland type: <input type="checkbox"/> eC11 – Very intensive meadow <input type="checkbox"/> eC12 - Intensive meadow <input type="checkbox"/> eC13- Medium intensive meadow <input type="checkbox"/> eC14 - Extensive meadow <input type="checkbox"/> eC15 – Very extensive meadow <input type="checkbox"/> eC16 - Meadow or pasture (or both uses) <input type="checkbox"/> eC21 - Intensive pasture <input type="checkbox"/> eC22 - Medium intensive pasture <input type="checkbox"/> eC23 - Extensive pasture <input type="checkbox"/> eC24 - Only occasionally grazed (very extensive) <input type="checkbox"/> eC25 - Pastured woodland <input type="checkbox"/> eC31 - Ruderal / fallow grassland <input type="checkbox"/> eC41 - Amenity grassland <input type="checkbox"/> eC51 -Unclear / Other kinds of grassland		
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#### 14.4 GRASSLAND GROWTH STATUS (enlarged transect/field)

769	<p>Grassland growth status:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Grassland not yet mown or pastured</li> <li><input type="checkbox"/> Grassland mown or pastured a few days ago - (Cut /pastured grass / herbs, either lying on the ground or having been removed from plot, and vegetation ~ &lt;20 cm – no inflorescences or blossoms)</li> <li><input type="checkbox"/> Grassland in growth after mowing / grazing – (Vegetation &gt; 20 cm)</li> <li><input type="checkbox"/> NR</li> </ul>
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#### 14.5 GRASSLAND EUNIS HABITAT TYPE (enlarged transect)

770	<p><b>EUNIS Grass habitat type:</b></p> <p>List of alphanumeric codes:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> D1 - Raised and blanket bogs</li> <li><input type="checkbox"/> D2 - Valley mires, poor fens and transition mires</li> <li><input type="checkbox"/> D3 - Aapa, palsa and polygon mires</li> <li><input type="checkbox"/> D4 - Base-rich fens and calcareous spring mires</li> <li><input type="checkbox"/> D5 - Sedge and reedbeds, normally without free-standing water</li> <li><input type="checkbox"/> D6 - Inland saline and brackish marshes and reedbeds</li> <li><input type="checkbox"/> E1 - Dry grasslands</li> <li><input type="checkbox"/> E2 - Mesic grasslands</li> <li><input type="checkbox"/> E3 - Seasonally wet and wet grasslands</li> <li><input type="checkbox"/> E4 - Alpine and subalpine grasslands</li> <li><input type="checkbox"/> E5 - Woodland fringes and clearings and tall forb stands</li> <li><input type="checkbox"/> E6 - Inland salt steppes</li> <li><input type="checkbox"/> E7 - Sparsely wooded grasslands: E7.1, E7.2, E7.3</li> <li><input type="checkbox"/> F3 - Temperate and mediterranean-montane scrub</li> <li><input type="checkbox"/> F4 - Temperate shrub heathland</li> <li><input type="checkbox"/> F5 - Maquis, arborescent matorral and thermo-Mediterranean brushes</li> <li><input type="checkbox"/> F6 - Garrigue</li> <li><input type="checkbox"/> G1 - Broadleaved deciduous woodland</li> <li><input type="checkbox"/> G2 - Broadleaved evergreen woodland</li> <li><input type="checkbox"/> G3 - Coniferous woodland</li> <li><input type="checkbox"/> G4 - Mixed deciduous and coniferous woodland</li> <li><input type="checkbox"/> G5 - Lines of trees, small anthropogenic woodlands, recently felled woodland, early-stage woodland and coppice</li> <li><input type="checkbox"/> I1 - Arable land and market gardens: I1.5 Bare tilled, fallow or recently abandoned arable land</li> <li><input type="checkbox"/> XX - Other</li> <li><input type="checkbox"/> N.R. - Not Relevant</li> </ul>	2130	<p><b>Grassland [structured comments / other]: (GC99)</b></p>
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#### 14.6 GRASSLAND AGE (enlarged transect / field)

127	<p><b>Grassland age:</b></p> <ul style="list-style-type: none"> <li>1 <input type="checkbox"/> ≤ 5 years</li> <li>2 <input type="checkbox"/> &gt; 5 years</li> <li>3 <input type="checkbox"/> Unclear</li> <li><input type="checkbox"/> N.R.</li> </ul>	2140	<p><b>If visible signs are unclear [structured comments / other]: (GA99)</b></p>
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4270	<b>Photo:</b> Take a photo if the grassland age is unclear: GRASS_UnclearAge
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#### 14.7 GRASSLAND TRANSECT (transect)

130	<b>Grass transect starting point:</b> 1 <input type="checkbox"/> On the point 2 <input type="checkbox"/> Shifted <input type="checkbox"/> N.R.	131	<b>Direction of grass transect shift (if starting point is 2):</b> 1 <input type="checkbox"/> N 2 <input type="checkbox"/> NE 3 <input type="checkbox"/> E 4 <input type="checkbox"/> SE 5 <input type="checkbox"/> S 6 <input type="checkbox"/> SW 7 <input type="checkbox"/> W 8 <input type="checkbox"/> NW 9 <input type="checkbox"/> N.R.
132	<b>Distance of grass transect shift (if starting point is 2) (in m):</b>	2150	<b>Reason for shift of grass transect [structured comments / other]: (GS99)</b>
133	<b>Direction of grass transect:</b> 1 <input type="checkbox"/> N 2 <input type="checkbox"/> NE 3 <input type="checkbox"/> E 4 <input type="checkbox"/> SE 5 <input type="checkbox"/> S 6 <input type="checkbox"/> SW 7 <input type="checkbox"/> W 8 <input type="checkbox"/> NW 9 <input type="checkbox"/> N.R.	134  2160	<b>Length of grass transect (in m):</b> <input type="checkbox"/> 20 m <input type="checkbox"/> Shorter than 20 m Indicate length..... m  <b>Reason for shorter transect [structured comments / other]: GS01</b>

135	<b>Start of grass transect latitude:</b> (N.R. = 88,888888)			137	<b>Start of grass transect longitude:</b> (N.R. = 88,888888)
138	<b>End of grass transect latitude:</b> (N.R. = 88,888888)			140	<b>End of grass transect longitude:</b> (N.R. = 88,888888)
2170	<b>Comments on problems with GPS, if needed: BEXX</b>				
4275	<b>Photos: in total 5 photos are mandatory on the grassland transect:</b> (additional photos possible, see below)				
4276	1. Take a photo from transect start (looking towards transect end): GRASS_TransectStart (1/6 sky, 5/6 land cover)				
4277	2. Take a photo from transect end (looking towards transect start): GRASS_TransectEnd (1/6 sky, 5/6 land cover)				
4282	3. Take a photo fo the transect from above: GRASS_TransectAbove (from 1,5 m height downwards to a typical patch of vegetation for the transect)				
4280	4. Take a photo of the flower posy GRASS_POSY				
	5. Take a photo of the vigour against White linen tool (WLT) GRASS_Vigour				

## 14.8 GRASSLAND VEGETATION LAYERS (transect)

### 14.8.1 Vigour of vegetation

142	<b>Vigour of vegetation:</b> 1 <input type="checkbox"/> 1 2 <input type="checkbox"/> 1.5 3 <input type="checkbox"/> 2 4 <input type="checkbox"/> 2.5 5 <input type="checkbox"/> 3 6 <input type="checkbox"/> 3.5 7 <input type="checkbox"/> 4 8 <input type="checkbox"/> 4.5 9 <input type="checkbox"/> 5 <input type="checkbox"/> N.R.	4280	<b>Photo:</b> Take a photo of the vigour against white linen tool: GRASS_Vigour
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### 14.8.2 Grass-forb-ratio (sum 100, e.g. 20:80, 60:40) (transect)

771	<b>Grassland-forb ratio*:</b> <input type="checkbox"/> Grass : Forb = 100 : 0 <input type="checkbox"/> Grass : Forb = 90 : 10 <input type="checkbox"/> Grass : Forb = 80 : 20 <input type="checkbox"/> Grass : Forb = 70 : 30 <input type="checkbox"/> Grass : Forb = 60 : 40 <input type="checkbox"/> Grass : Forb = 50 : 50 <input type="checkbox"/> Grass : Forb = 40 : 60 <input type="checkbox"/> Grass : Forb = 30 : 70 <input type="checkbox"/> Grass : Forb = 20 : 80 <input type="checkbox"/> Grass : Forb = 10 : 90 <input type="checkbox"/> Grass : Forb = 0 : 100  * Rounding up applies: if there is e.g. 4 % forb cover it's still 100:0%, if there is 6 % forb cover it's 90:10%
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### 14.8.3 Layer components

**Herbaceous layer + Bare layer + Woody layer = 100 %**

14 3	<b>Herbaceous layer* on grass transect (%) :</b> Possible values: 1 <input type="checkbox"/> 0 % 2 <input type="checkbox"/> >0 - 3 % 3 <input type="checkbox"/> >3 - 8 % 4 <input type="checkbox"/> >8 - 15 %	144	<b>Bare layer** on grass transect (%) :</b> Possible values: 1 <input type="checkbox"/> 0 % 2 <input type="checkbox"/> >0 - 3 % 3 <input type="checkbox"/> >3 - 8 % 4 <input type="checkbox"/> >8 - 15 %	145	<b>Woody layer on grass transect (%): (only features that touch the ground or are &lt; 1 m in height)</b> Possible values: 1 <input type="checkbox"/> 0 % 2 <input type="checkbox"/> >0 - 3 % 3 <input type="checkbox"/> >3 - 8 %
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5 <input type="checkbox"/> >15 - 25 % 6 <input type="checkbox"/> >25 - 40 % 7 <input type="checkbox"/> >40 - 60 % 8 <input type="checkbox"/> >60 - 80 % 9 <input type="checkbox"/> >80 – 100 % * = graminoids, forbs and mosses /lichens (except mosses and lichens on stones / rocks)	5 <input type="checkbox"/> >15 - 25 % 6 <input type="checkbox"/> >25 - 40 % 7 <input type="checkbox"/> >40 - 60 % 8 <input type="checkbox"/> >60 - 80 % 9 <input type="checkbox"/> >80 – 100 % ** = pure soil, sand, stones, rocks, and dead leaves on the ground	4 <input type="checkbox"/> >8 - 15 % 5 <input type="checkbox"/> >15 - 25 % 6 <input type="checkbox"/> >25 - 40 % 7 <input type="checkbox"/> >40 - 60 % 8 <input type="checkbox"/> >60 - 80 % 9 <input type="checkbox"/> >80 – 100 %
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	<b>Woody layer components (crown coverage*)</b> <b>(on <u>enlarged</u> grass transect)</b> <b>(Sum of percentages max. 100 %, if from birds eye perspective no grass cover can be seen on the ground))</b>  * estimate the coverage of woody plants as seen from the birds eye perspective	<b>Percentage</b> 1 <input type="checkbox"/> 0 % 2 <input type="checkbox"/> >0 - 3 % 3 <input type="checkbox"/> >3 - 8 % 4 <input type="checkbox"/> >8 - 15 % 5 <input type="checkbox"/> >15 - 25 % 6 <input type="checkbox"/> >25 - 40 % 7 <input type="checkbox"/> >40 - 60 % 8 <input type="checkbox"/> >60 - 80 % 9 <input type="checkbox"/> >80 – 100 %
157	Orchards	Tick boxes
158	Old trees	
159	Shrubs	
160	Dwarf shrubs	
161	Other wooded	

#### 14.9 GRASSLAND HEIGHT (transect)

<b>772</b>	<b>Average height of the grassland (cm)</b>

#### 14.10 GRASSLAND FLOWERS (transect)

173	<b>Number of species of flowering forbs:</b> <b>Possible values: 0, 1, 2, 3 ... 33, &gt;33</b> <b>It is not necessary to count the exact number if there are more than 33 plants.</b>	174	<b>IV Flower density (all flowers):</b> 1 <input type="checkbox"/> (0) None 2 <input type="checkbox"/> (1) Very few (hardly any flowers in the transect) 3 <input type="checkbox"/> (1.5) Very few to few 4 <input type="checkbox"/> (2) Few (a few scattered flowers) 5 <input type="checkbox"/> (2.5) Few to medium 6 <input type="checkbox"/> (3) Medium (regular flowering but not dense flowering) 7 <input type="checkbox"/> (3.5) Medium to dense 8 <input type="checkbox"/> (4) Dense (many flowers, but not a flower carpet) 9 <input type="checkbox"/> (4.5) Dense to very dense
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			10 <input type="checkbox"/> (5) Very dense (flower carpet) <input type="checkbox"/> N.R.
428 2	<b>Photo:</b> Take a photo of a posy of all flowers: GRASS_Posy		

#### 14.11 FLOWER COLOURS (transect)

773	<b>Flower colours:</b> <input type="checkbox"/> White <input type="checkbox"/> Yellow <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Magenta <input type="checkbox"/> Violet <input type="checkbox"/> Blue <input type="checkbox"/> Green <input type="checkbox"/> Brown <input type="checkbox"/> Mixed
774	
775	
776	
777	
778	
779	
780	
781	
782	

783	Show number of flower colours ticked	XY
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#### 14.12 GRASSLAND KEY SPECIES / SPECIES GROUP RICHNESS (transect)

	<b>Key species richness</b> (multiple choice):	<b>Number of plants for each of the 12 species groups relevant for the region</b> Classification: 0, 1-2, 3-10, >10
179	Apiaceae	Tick boxes
184	Campanula spp.	
185	Centaurea spp., Serratula tinctoria	
187	Cirsium spp., Carduus spp., Carlina spp.	
198	Juncus spp.	
201	Myosotis spp.	
202	Orchidaceae spp.	
209	Scabiosa spp., Knautia spp., Succisa spp.	
210	Silene spp., Lychnis flos-cuculi, Dianthus spp. (red flowering)	
214	Trifolium spp. (red flowering)	
215	Trifolium spp., Medicago spp., Lotus spp., Coronilla (yellow flowering)	
217	Vicia spp., Lathyrus spp., Astragalus spp. (blue or purple flowering)	

4284	<b>Photos:</b> Take photos of rare or unknnon species: GRASS_RareSpecies	
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	(multiple photos possible)
2180	<b>Rare or unknown species [structured comments / other] free text with photo ID and species name, if available. (GO99)</b>

#### 14.13 GRASSLAND STRUCTURAL CHARACTERISATION (enlarged transect)

	<b>Structural species/species groups (dominant species for characterisation):</b> (multiple choice)	<b>Percentage for each present structural species/species groups:</b> Classification: 1 <input type="checkbox"/> 0 % 2 <input type="checkbox"/> >0 - 3 % 3 <input type="checkbox"/> >3 - 8 % 4 <input type="checkbox"/> >8 - 15 % 5 <input type="checkbox"/> >15 - 25 % 6 <input type="checkbox"/> >25 - 40 % 7 <input type="checkbox"/> >40 - 60 % 8 <input type="checkbox"/> >60 - 80 % 9 <input type="checkbox"/> >80 - 100 %
221	Shrub/ Brushwood/ Bramble	Tick boxes...
223	Thistles (Carduus spp, and others)	
225	Docks (Rumex obtusifolius, and others)	
227	Rushes (Juncus spp.)	
228	Sedges (Carex spp.)	
230	Wood small-reed (Calamagostis)	

#### 14.14 GRASSLAND LEGUME COVER (transect)

236	<b>Total cover of legumes (part of the forbs, list of legume species see C1-document) (%):</b> Classification: 1 <input type="checkbox"/> 0 % 2 <input type="checkbox"/> >0 - 3 % 3 <input type="checkbox"/> >3 - 8 % 4 <input type="checkbox"/> >8 - 15 % 5 <input type="checkbox"/> >15 - 25 % 6 <input type="checkbox"/> >25 - 40 % 7 <input type="checkbox"/> >40 - 60 % 8 <input type="checkbox"/> >60 - 80 % 9 <input type="checkbox"/> >80 - 100 %
2190	<b>Comments on legumes: GL99</b>
2200	<b>Other Grassland comments [structured comments / other]: (GP01, GG99)</b>

4286	<b>Photos:</b> Take any other grassland photo as needed: GRASS_Other (multiple photos possible)
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**15 LANDSCAPE FEATURES**

**15.1 MAIN INFORMATION TO BE COLLECTED FOR EACH LUCAS POINT SUBJECT TO LANDSCAPE FEATURE ASSESSMENT (to be collected first in the PI office and then in the field)**

Prefilled from DB

R	<b>Landscape feature module point:</b> 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No
---	---

**Main information (PI in office and in field)**

790 791	<b>Landscape feature survey possible?*</b> 1 <input type="checkbox"/> Yes (PI office) <input type="checkbox"/> Yes (field assessment) 2 <input type="checkbox"/> No (PI office) <input type="checkbox"/> No (field assessment) <input type="checkbox"/> N.R.
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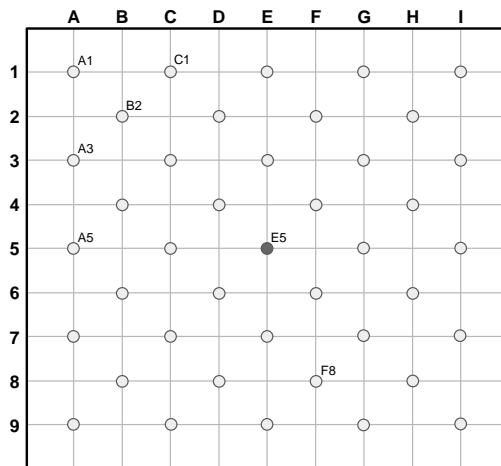
\*If Field 791 – Landscape features survey possible is NO skip the module and go to the next module (if PI is not possible, field assessment might still be possible)

If the orthophoto is all covered by clouds the field survey cannot be done because the sub-points cannot be located.

If the landscape feature survey is not possible, please add a comment explaining why and skip the rest of the fields of this module.

If the landscape feature module is possible

- for each sub-point max. 2 landscape features can be collected, the main one (LF1), and if relevant a secondary one (LF2).
- 41 sub-points per LUCAS point: 41 sub-points disposed 5 in a row, every second row shifted half to the right and contains only 4 sub-points (see figure below). Rows are 10 m apart from each other.



ID	PI – feature 1 (default value: No LF)	PI – feature 2 (default value “No LF”)	Comment LF PI	Field – feature 1 (pre-filled with PI values, if PI not possible fill with “NA”)	Field – feature 2 (pre-filled with PI values, if PI not possible fill with “NA”)	Comment LF FS
A1	Feature X	Feature y		Feature X	Feature y	
A2	Feature Z	No LF		Feature Z	No LF	
A3	No LF	No LF		No LF	No LF	
...	Feature X	Feature Z		NA	NA	
I9						

General comments (see list below).

- Sub-points are identified through LUCAS point ID and sub-point ID (e.g. ID for sub-s points for row and column A1, A3, A5, A7, A9, B2, B4, .....
- Subpoint IDs should be visible on the map
- The information can either be collected through an interactive map or using a table with IDs for each sub-point
- The results of the PI assessment have to be visible for the survey in the field and they are also displayed as default value in the fields to be filled during the in-situ survey, including the comments made by the photointerpreter.
- Typology of landscape features: Woody vegetation (W), Permanent grass/herbaceous (G), Temporary herbaceous (T), Ditches and streams (D), Small ponds and wetlands (P), Stone walls, cairns and terraces (S), Cultural features (C)
- The allowed combinations of LF1 and LF2 are:

		LF2								
		No LF	W	G	T	D	P	S	C	NA
LF1	No LF	2	0	0	0	0	0	0	0	0
	W	2	0	0	0	2	2	2	2	0
	G	2	0	0	0	0	0	0	2	0
	T	2	0	0	0	0	0	0	1	0
	D	2	0	0	0	0	0	0	0	0
	P	2	0	0	0	0	0	0	0	0

<b>S</b>	2	0	0	0	0	0	0	0	1	0
<b>C</b>	0	0	0	0	0	0	0	0	0	0
<b>NA</b>	0	0	0	0	0	0	0	0	0	2

- If there is no Landscape Feature, select “No LF”
- if the LF cannot be assessed then the surveyor will have to select the option “NA”

**15.2 ADDITIONAL INFORMATION PER LUCAS POINT (to be collected in the field)**

\*Skip in case of PI

976	<b>Office PI confirmed? (after the PI assessment)</b> 1 <input type="checkbox"/> Yes, office PI is confirmed 2 <input type="checkbox"/> No, field situation different, edit sub-points. (default value)	977	<b>After editing:</b> 1 <input type="checkbox"/> Confirm changes (default value) 2 <input type="checkbox"/> Close without changes
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978	<b>Orthophot outdated within the quadrant?</b> 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No
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979	<b>Additional walking needed in the field?</b> 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No
-----	---

2450	<b>Comment about the Landscape Features [structured comments / other] (LF01, LF02, LF03, LF04, LF05, LF06, LF99)</b>  <b>General structured comments:</b> <ul style="list-style-type: none"> <li>Code LF01 LF office PI not possible because appropriate orto-photos are not available (LF office PI)</li> <li>Code LF02 LF field survey not possible because the quadrat is inaccessible (field survey)</li> <li>Code LF03 LF assessment is entirely impossible for any other reason + free text (LF office PI, field survey)</li> </ul> <b>Sub-point comments:</b> <ul style="list-style-type: none"> <li>Code LF04: LF type of subpoint is impossible to determine/verify + ID sub-point(s) + free text (LF office PI, field survey)</li> <li>Code LF05: LF visible on the orto-photo is missing in the field due to removal + ID sub-point(s) + free text (field survey)</li> <li>Code LF06: LF present in the field is not visible on orthophoto + ID sub-point +photo ID (iterate if necessary) (field survey)</li> <li>Code LF99: Other issue with LF identification LF + free text (optional: ID sub-point(s) +photo ID (LF office PI, field survey)</li> </ul>
4290	<b>Photos:</b> Take photo of the LF not visible on the orthophoto: LF_NotOnOrtho (multiple photos possible)
4295	Take any other photo as needed: LF_Other (multiple photos possible)



## 16 SOIL\*

\* Skip soil module in case of PI

(In principle SOIL should not be required on points with OBS\_TYPE 7 (conditions for the sample points), but if points are changed at the beginning of the survey, what happens? I think soil points get transferred on other points, so OBS\_TYPE 7 should not appear with SOIL)

\*Only collect soil samples if the point is part of the soil module and if one of the following 2 cases applies:

- observation type = 1 (the point is observed at less than 100 m) and the location reached by the surveyor is in the same land cover and use as the LUCAS point (ideally also in the same field).

- the LUCAS point cannot be reached (e.g. mature crops), but the soil sample can be collected from the same field (provided the land cover and use are the same as the target location), being as close as possible to the LUCAS point, but not exceeding a distance of 300 m.

K	<b>Soil point?</b> 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No				
L		<b>Bulk point (multiple choice):</b>		P	<b>BIO point:</b> 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No
		M	1 <input type="checkbox"/> Yes (0 - 10) 2 <input type="checkbox"/> No		
		N	1 <input type="checkbox"/> Yes (10 - 20) 2 <input type="checkbox"/> No		
		O	1 <input type="checkbox"/> Yes (20 - 30) 2 <input type="checkbox"/> No		
980	<b>Can you do the soil assesement?</b> 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No				
2455	<b>Comment if soil assessment not possible: SA09</b>				

### 16.1 LOCATION OF SOIL SITE

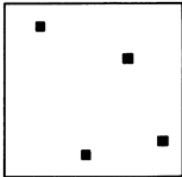
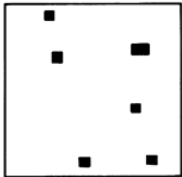
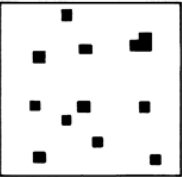
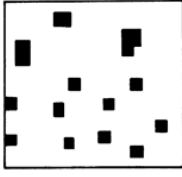


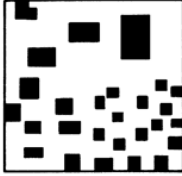





982	<b>Point latitude:</b> (N.R. = 88,888888)			984	<b>Point longitude:</b> (N.R. = 88,888888)
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2460	<b>Comment if problems with GPS: BEXX</b>
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985	<b>Only for soil samples in woodland sites: Litter sample taken?</b> 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> Not possible		Litter layer depth: (N.R. = 88,888888)	986	<b>Label on litter bag (if sample taken)</b> (N.R. = 888888 – should match Soil label) <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
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4300	<b>Photo:</b> <b>Take photo SOIL_Litter</b>
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## 16.2 SOIL SITE

341	<p><b>Stones on the surface (% related to the area of the circular sampling zone of 2-m radius, possible values 0-100):</b> Final classification (%): 0-25%, 25-50%, 50-75%, 75-100%</p> <p>Charts for estimating proportions of stones in surface (each fourth of any one square has the same amount of black).</p> <div style="display: flex; flex-wrap: wrap; justify-content: space-around;"> <div style="text-align: center;"> 1 %</div> <div style="text-align: center;"> 2 %</div> <div style="text-align: center;"> 3 %</div> <div style="text-align: center;"> 5 %</div> <div style="text-align: center;"> 7 %</div> <div style="text-align: center;"> 10 %</div> <div style="text-align: center;"> 15 %</div> <div style="text-align: center;"> 20 %</div> <div style="text-align: center;"> 25 %</div> <div style="text-align: center;"> 30 %</div> <div style="text-align: center;"> 40 %</div> <div style="text-align: center;"> 50 %</div> </div> <p>Source: <a href="http://www.kgs.ku.edu/Publications/Bulletins/212/">http://www.kgs.ku.edu/Publications/Bulletins/212/</a></p>
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## 16.3 SOIL BIODIVERSITY

343	<p><b>Biodiversity sample taken?</b></p> <p>1 <input type="checkbox"/> Yes</p> <p>2 <input type="checkbox"/> Not possible</p> <p><input type="checkbox"/> N.R.</p>	344	<p><b>Biodiversity label (if sample taken)</b> (N.R. = 888888)</p> <div style="display: flex; gap: 10px;"> <input style="width: 30px; height: 30px;" type="text"/> <input style="width: 30px; height: 30px;" type="text"/> <input style="width: 30px; height: 30px;" type="text"/> <input style="width: 30px; height: 30px;" type="text"/> <input style="width: 30px; height: 30px;" type="text"/> <input style="width: 30px; height: 30px;" type="text"/> </div>	345	<p><b>Biodiversity expedition date</b></p>
2470	<p><b>Comment about the biodiversity soil sample [structured comments / other]</b> (e.g. why it is not possible to take the biodiversity sample) (SA01, SA02, SA04, SA05, SA06, SA07, SC99)</p>				
4310 4320	<p><b>Photos:</b> Take photo SOIL_BioLabel, Take photo SOIL_BagHoles_Bio</p>				

## 16.4 SOIL BULK DENSITY

347	<p><b>Bulk (0-10 cm) sample taken?</b></p> <p>1 <input type="checkbox"/> Yes</p> <p>2 <input type="checkbox"/> Not possible</p> <p><input type="checkbox"/> N.R.</p>	349	<p><b>Bulk (10-20 cm) sample taken?</b></p> <p>1 <input type="checkbox"/> Yes</p> <p>2 <input type="checkbox"/> Not possible</p> <p><input type="checkbox"/> N.R.</p>	351	<p><b>Bulk (20-30 cm) sample taken?</b></p> <p>1 <input type="checkbox"/> Yes</p> <p>2 <input type="checkbox"/> Not possible</p> <p><input type="checkbox"/> N.R.</p>
348	<p><b>Bulk (0-10 cm) label (if sample taken)</b> (N.R. = 888888)</p>	350	<p><b>Bulk (10-20 cm) label (if sample taken)</b> (N.R. = 888888)</p>	352	<p><b>Bulk (20-30) label (if sample taken)</b> (N.R. = 888888)</p>



2490	<b>Comment about the soil sample [structured comments / other]</b> SA01, SA02, SA04, SA05, SA06, SA07, SA08, SA99
4370 4380	<b>Photos:</b> Take Photo SOIL_StdBagHoles Take Photo SOIL_StdLabel
4390	<b>Photos:</b> Take photo SOIL_NoSample
4400	<b>Photos:</b> Take other photos as needed « SOIL_Other »

#### 16.6 LAND OWNER DETAILS (soil sample results)

408	<b>Land owner requested soil results?</b> 1 <input type="checkbox"/> Yes 2 <input type="checkbox"/> No <input type="checkbox"/> N.R.	409	<b>Land owner name</b>	410	<b>Land owner address (street/number/postal code/city/country)</b>
		411	<b>Land owner phone</b>	412	<b>Land owner e-mail</b>

#### 17 COMMENTS

See the comment fields in the respective sections

<b>Comments on survey duration: BFXX</b> <b>Any other comment: XX99</b>
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#### 18 PHOTOS – REVIEW LIST MANDATORY/OPTIONAL (see excel sheet)

2500	<b>Comment about the photos [structured comments / other] FA01, FA02, FA03, FA04, FA05, FA06, FA07, FA08, FA22, FA99, BH01, BH02, BH03</b>
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List of main photos:

ACCESS\_Other  
OBS\_Conflict  
OBS\_Distance  
LCLU\_Point  
LCLU\_North  
LCLU\_East  
LCLU\_South  
LCLU\_West  
OBS\_LTNE  
OBS\_LTNE\_LC

OBS\_Other  
LCLU\_CropLC1  
LCLU\_CropLC2  
LCLU\_Other  
INSPIRE\_Other  
FAO\_Other  
LANDMNG\_Other  
REMARK\_Other  
GULLY\_Biggest  
GULLY\_Other  
WATERMNG\_Other  
COPERNICUS\_LC  
COPERNICUS\_Other  
TREEWITH\_Other  
EXTGRASS\_Other  
GRASS\_UnclearAge  
GRASS\_TransectStart  
GRASS\_TransectEnd  
GRASS\_TransectAbove  
GRASS\_Vigour  
GRASS\_Posy  
GRASS\_RareSpecies  
GRASS\_Other  
SOIL\_Litter  
SOIL\_BioLabel  
SOIL\_BagHoles\_Bio  
SOIL\_BulkNoSample  
SOIL\_BulkNoSub

SOIL\_BulkLabel

SOIL\_BulkBagHoles

SOIL\_StdBagHoles

SOIL\_StdLabel

SOIL\_StdNoSample

SOIL\_Other

LF\_NotOnOrtho

LF\_Other