

Data curation LPIS Flanders

I. Geometric transformation

CRS transformation from Belgian Lambert 72 to WGS84 (EPSG: 4326) using QGIS (gdal_translate).

II. Data filtering

All records involving indoor agricultural activities (e.g. greenhouses, containers, crops covered by plastic) were removed from the shapefile. This was done based on the attribute 'GESp_PM' of the original dataset. In case the value of this attribute contained "SER", "SGM" or "PLA", the record was removed.

III. Conversion of legend

The crop type legend of the Flemish LPIS files was directly converted to the WorldCereal crop type legend using the key as described in detail in Annex A. Based on the resulting crop type codes, associated land cover codes were derived using the WorldCereal legend. Additionally, some non-crop types present in the LPIS data were labeled with the correct land cover code (see tab "LC" in Excel file mentioned earlier).

IV. Definition of other data attributes

ValidityTime

This attribute was set to the first of June of the associated year for all records. This date was chosen as it is part of all major growing seasons in Belgium.

Split

Before splitting the data into CAL, VAL and TEST sets, crop types which occurred less than 10 times in the dataset were assigned to the "other crops" (code 9900) class.

The actual split of the data was performed using a stratified random split, where crop type served as the stratification level and the following splitting fractions were used: 70% CAL, 20% VAL and 10% TEST.

Annex A

LPIS code	CT	LC	Crop type
0	0	0	unkown
1	0	60	agricultural infrastructure
2	0	60	stables
3	0	70	water
4	0	30	hedgerows
6	9120	13	pasture
8	0	10	allotment gardens
9	0	50	soil
10	0	40	tree row
11	0	60	stables
12	0	60	warehouse
13	0	60	building
14	0	60	residence
15	0	60	building
16	0	60	other building
34	1700	11	oats
35	1910	11	triticale
36	1910	11	spelt
37	1900	11	buckwheat
39	1900	11	other cereals
42	4380	11	sunflower
43	4100	11	soybeans
44	4390	11	oil seeds
45	4390	11	oil flax
51	7700	11	peas
52	7100	11	beans
53	7600	11	lupine
60	9120	13	grassland
63	9120	13	grass - herbaceous mixture
71	8100	11	fodder beets
81	0	10	fallow
82	0	10	fallow almost no activity
85	9900	10	other crops
89	0	10	fallow almost no activity
91	8100	11	sugar beets
94	7200	11	haricot
96	9900	10	horticultural crops
98	9520	12	fodder mixture
99	0	10	unknown crop
201	1200	11	maize
202	1200	11	maize
311	1110	11	winter wheat
312	1120	11	spring wheat
321	1510	11	winter barley
322	1520	11	spring barley

LPIS code	CT	LC	Crop type
323	1500	11	barley
331	1610	11	winter rye
332	1620	11	spring rye
341	1700	11	oats
342	1700	11	oats
381	1400	11	sorghum
382	1900	11	quinoa
383	1900	11	millet
384	9120	12	canary seed
541	9998	11	mixture winter wheat and leguminous crops
542	9998	11	mixture cereal and leguminous crops
601	9120	12	grass seeds
602	3300	12	grape seedlings
603	1900	11	cereals - seed
604	4390	11	oil crops - seed
605	2900	11	vegetables - seeds
606	9120	12	fodder crops - seeds
638	9120	12	festulolium
639	1610	11	rye
643	4330	11	yellow mustard
644	7600	11	lupine
645	9310	11	phacelia
646	9510	12	tagetes
647	9510	11	non-leguminous cover crop
648	7900	11	leguminous cover crop
649	4340	11	nyger seed
651	4350	11	nut-sweet rapeseed
652	6219	11	cucumber herb
653	1920	12	sudan grass
654	2150	11	sword herd
655	4330	11	sarepta mustard
656	9510	11	radish
657	9120	13	grass
658	7900	12	mixture leguminous cover crops
659	9510	12	mixture non-leguminous cover crops
660	7900	12	alfalfa
661	7900	10	leguminous crops
700	7900	12	grass clover
721	7900	12	annual clover
722	7900	12	perennial clover
723	7900	12	red clover
731	7900	12	annual alfalfa
732	7900	12	perennial alfalfa
741	2190	11	fodder cabbages
742	2310	11	fodder carrots
743	9100	10	other fodder crops
744	7900	10	mixture leguminous crops

LPIS code	CT	LC	Crop type
745	9120	12	mixture grass + leguminous crops
746	2320	11	fodder turnips
747	7900	12	vetch
831	7700	11	peas
832	7100	11	beans
856	2900	10	other herbs
859	6219	11	parsley
860	6229	12	chervil
863	6219	11	parsley
864	6219	11	basil
865	6219	11	chives
872	9213	11	hemp
881	9920	12	# engelwortel
882	9510	11	milk thistle
883	9920	12	short cycle forestry
884	9120	12	miscanthus
894	0	40	forestry
895	0	40	trees
897	0	40	trees
898	9998	10	permaculture
901	5100	11	potatoes
902	5100	11	potatoes
904	5100	11	early potatoes
905	5100	11	potatoes
906	5200	11	sweet potatoes
921	9213	11	flax (fibre)
922	9213	11	hemp (fibre)
931	7700	11	peas
932	7100	11	beans
951	2900	11	other vegetatbles
954	9520	12	non-woody ornamental plants
955	9120	13	grass
956	2900	10	herbs
957	9300	10	aromatic herbs
959	6219	11	parsley
960	6219	11	chervil
961	6219	11	parsley
962	9920	12	christmas trees
963	9920	12	willows
964	6219	11	basil
965	6219	11	chives
972	3900	11	other annual fruit
983	9920	12	# engelwortel
999	9900	10	other crops
4111	4351	11	winter rapeseed
4112	4351	11	winter rapeseed
4121	4352	11	spring rapeseed

LPIS code	CT	LC	Crop type
4122	4352	11	spring rapeseed
8409	2390	11	parsnip
8410	7100	11	stem green beans
8411	7200	11	haricot
8412	7100	11	flageolets
8456	2260	11	butternut
8511	2120	11	asparagus
8512	2130	11	brussels sprouts
8513	2340	11	sjalots
8514	2340	11	onions
8515	2170	11	chicory
8517	2190	11	rhubarb
8518	2150	11	lettuce
8519	2160	11	spinach
8523	2140	11	cauliflower
8524	2130	11	cabbage
8525	2140	11	brocoli
8526	2130	11	chinese cabbage
8527	2130	11	red cabbage
8528	2320	11	kohlrabi
8529	2130	11	kohlrabi
8530	2320	11	turnip
8531	2390	11	radish
8532	2390	11	red beet
8533	6219	11	salsify
8534	6212	11	fennel
8535	2310	11	carrot
8537	2190	11	endive
8538	2350	11	leek
8539	2190	11	celery
8540	2130	11	white cabbage
8541	2290	11	zucchini
8542	2150	11	lettuce
8543	2390	11	celeriac
8544	2150	11	iceberg lettuce
8545	2150	11	rucola
8546	2130	11	savoy cabbage
8548	2190	11	green celery
8550	2390	11	radish
8551	2190	11	celery
8552	2230	11	tomatoes
8553	2290	11	peppers
8555	2220	11	eggplant
8556	2260	11	pumpkins
8557	2150	11	other lettuce
8559	2900	11	other vegetables
8563	2340	11	onions

LPIS code	CT	LC	Crop type
8564	2310	11	carrots
8586	2110	11	artichokes
8620	2130	11	other cabbages
8910	0	40	forestry
8911	0	40	forestry
8912	0	41	forestry (coniferous)
8915	0	40	forestry
9201	3640	12	hazelnuts
9202	3660	12	walnuts
9409	2390	11	parsnip
9410	7100	11	stem green beans
9412	7100	11	flageolets
9456	2260	11	butternut
9511	2120	11	asparagus
9512	2130	11	brussels sprouts
9513	2340	11	sjalots
9514	2340	11	onions
9515	2170	11	chicory
9516	3450	11	strawberries
9517	2150	11	lettuce
9518	2150	11	lettuce
9519	2160	11	spinach
9523	2140	11	cauliflower
9524	2130	11	cabbage
9525	2140	11	brocoli
9526	2130	11	chinese cabbage
9527	2130	11	red cabbage
9528	2320	11	kohlrabi
9529	2130	11	kohlrabi
9530	2320	11	turnip
9531	2390	11	radish
9532	2390	11	red beet
9533	6219	11	salsify
9534	6212	11	fennel
9535	2310	11	carrots
9536	0	60	mushroom (in warehouses)
9537	2190	11	endive
9538	2350	11	leek
9539	2190	11	celery
9540	2130	11	white cabbage
9541	2290	11	zucchini
9542	2150	11	lettuce
9543	2390	11	celeriac
9544	2150	11	iceberg lettuce
9545	2150	11	rucola
9546	2130	11	savoy cabbage
9547	9520	11	chrysanthemum

LPIS code	CT	LC	Crop type
9548	2190	11	green celery
9550	2390	11	radish
9551	2190	11	celery
9552	2230	60	tomatoes (greenhouses)
9553	2290	60	peppers (greenhouses)
9554	2210	60	cucumber (greenhouses)
9555	2220	60	eggplant (greenhouses)
9556	2260	11	pumpkins
9557	2150	11	lettuce
9560	9920	12	trees
9561	2170	11	chicory
9563	2340	11	onions
9564	2310	11	carrots
9565	9500	10	ornamental plants
9566	9500	10	ornamental plants
9568	2900	11	leguminous vegetables
9569	2900	11	other vegetables
9570	9520	12	azalea
9571	9520	12	begonias
9572	9520	12	flower bulbs
9573	9500	10	indoor plants
9574	9500	10	flowering indoor plants
9575	9520	12	cut plants
9576	9520	12	cut roses
9577	9520	12	cut flowers
9578	9920	12	annual flowering plants
9580	9520	12	perennials
9581	9920	12	ornamental trees and shrubs
9582	9520	12	roses
9583	9520	12	shrubs
9584	9520	12	evergreen ornamental plants
9585	9520	12	cut flowers > 5 years
9586	2110	11	artichokes
9587	9520	12	cut flowers > 5 years
9589	9520	12	shrubs, non flowering
9590	0	12	solitary trees
9602	9920	12	young fruit trees
9603	9920	12	young ornamental trees
9604	9920	12	young trees
9620	2130	11	other cabbages
9710	3510	12	appels
9711	3550	12	pears
9713	3560	12	plums
9714	3900	12	other perennial fruit
9715	3300	12	grapes
9716	3300	12	grapes
9717	3440	12	raspberry

LPIS code	CT	LC	Crop type
9718	3490	12	red berries
9719	3420	12	gooseberries
9720	3490	12	black currants
9721	3490	12	blackberries
9722	3460	12	blueberries
9723	3490	12	other berries
9724	3450	12	strawberries
9725	3530	12	cherry
9726	3530	12	cherry
9727	3530	12	cherry
9728	3540	12	peach
9729	3430	12	kiwi berries
9730	3510	12	appels
9731	3550	12	pears
9811	2170	11	chicory
9812	2170	11	chicory
9821	9600	11	tobacco
9822	9520	12	hop
9823	9120	13	pasture
9825	0	30	heathland
9827	9120	13	pasture
9828	9120	13	grassland
9829	9120	13	grassland
9831	9500	12	flower mixture
9832	9500	12	flower mixture