UK PACT

Climate change and the Climate Change Act

GHG Inventory training (Session 4):

Additional explanation of land area data collection



28 July 2026

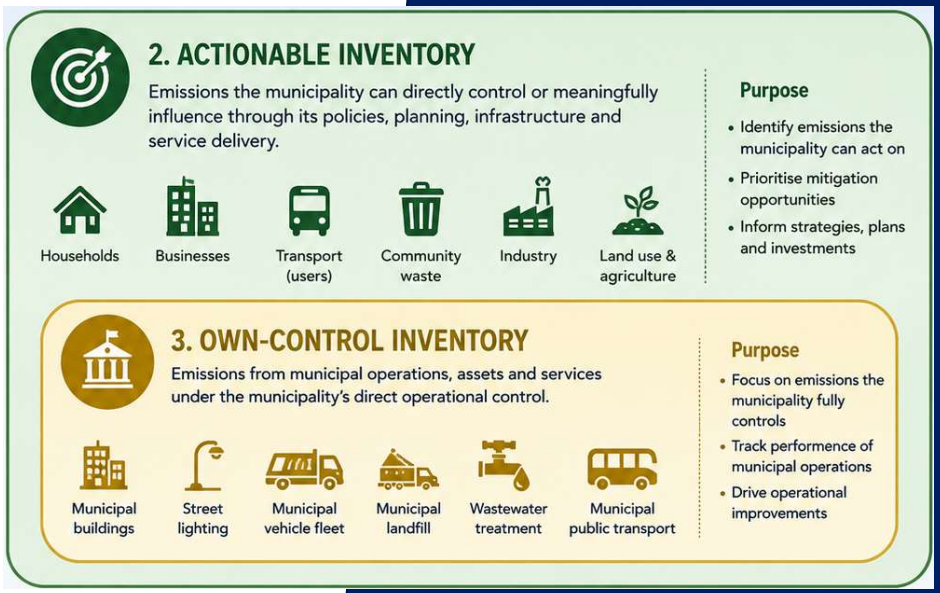
Land use activity data

- In the session 4 training the land component to emission inventories was introduced
- The most important activity data for this sector is the land areas of the different land types
- In session 4 two different data entries were discussed and the land change matrix was introduced
  - Due to time constraints this section was covered quite quickly so this additional presentation aims to provide more detail on the land activity data required
  - In addition the data collection templates discussed have been adjusted slightly to improve the flexibility of the inputs



Land use activity data

- The data collection template allows for:
  - Input of own-control (i.e. government owned land) inventory input and actionable (i.e. all land area within the jurisdiction) inventory input
    - See the session 4 presentation for more detail on own-control and actionable inventories
  - Two types of input (per year areas or land change matrix data) depending on the type of data available



For more information, visit www.ukpact.co.uk

Approaches for land input to data collection template

As mentioned in session 4 training, land emissions occur when there is land change

- This means that two years worth of data is required in order to determine land change rates
  - It is useful if the final year is the year of the inventory but it is not essential

Data entry using Approach 1:

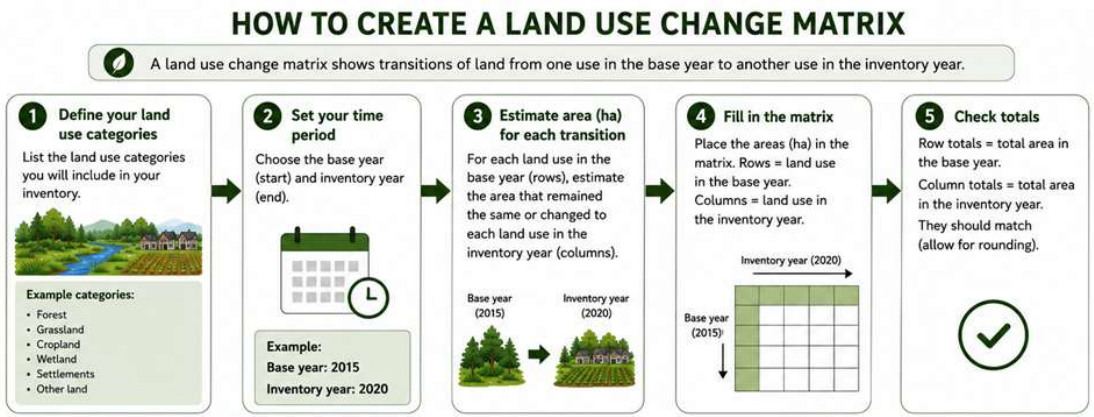
- This approach is used if
  - one has data on the land areas in a particular year or two
  - data is only available for certain land classes or degradation classes
- With this approach change can be seen but the actual land conversions (i.e. what is causing the decline of the forest area) are not know
  - For example, on the right we can see forest land declined between 2018 and 2025 but the data does not show exactly what the forest land was converted to

EXAMPLE data entry for land use by year			Enter the year below	Enter the year below	Enter the year below
			2018	2022	2025
Land type *(Please select main land type from the drop-down list)*	**Sub-category** *(Please select from drop-down list)*	**Name of managed area (Optional)** *(Column for providing the name of any government owned land within the jurisdiction, e.g. the name of a park or government facility. This is optional and is purely for ease of tracking the land types.)*	**Enter the land areas for the above year (ha)**	**Enter the land areas for the above year (ha)**	**Enter the land areas for the above year (ha)**
Forest land	Woodland		1 500	1 400	1 381
Degraded forest	Woodland		126	226	213
Cropland	Annual crops (Harveste		3 780	3 800	3 856
Grassland	Total		1 743	1 700	1 653
Degraded grassland	Total		980	1 003	1 022
Wetland	Non-woody wetland		120	110	103
Degraded wetland	Non-woody wetland		0	10	12
Settlement	Total residential		2 400	2 400	2 435
Other land	Total		674	674	648

Approaches for land input to data collection template

Data entry using Approach 2:

- This data entry requires more detailed data in that the input is in the form of a land change matrix
  - A land change matrix is developed by overlaying two spatial land maps and determining what conversions occur and where they occur on the map
  - This data is then output into a detailed land change matrix
- This approach is more likely to be used if
  - Spatial maps are available for more than one year (and the method for developing these maps was the same)
  - An actionable or reporting inventory is being developed



EXAMPLE LAND USE CHANGE MATRIX (area in hectares)

Land Use in Base Year (2015)	Inventory Year (2020)						
	Forest	Grassland	Cropland	Wetland	Settlements	Other land	Row Total (2015)
Forest	42,350	850	1,250	300	150	100	45,000
Grassland	3,650	31,200	2,800	200	900	250	39,000
Cropland	800	1,600	27,450	150	1,400	600	32,000
Wetland	150	350	100	4,400	50	150	5,200
Settlements	50	100	150	20	4,680	0	5,000
Other land	100	150	450	100	100	4,100	5,000
Column Total (2020)	47,100	34,250	32,200	5,170	7,280	5,200	131,200

For more information, visit www.ukpact.co.uk

Reading the land change matrix

- An example of a land change matrix is shown on the right
  - In the example we are saying the start year is 2018 and the end year is 2022
  - The green, purple and orange blocks would actually be filled with land areas data
- Blocks in the diagonal are land areas that don't show any change between 2018 and 2022
- Green blocks represent areas that are converted from other lands (in 2018) to forest lands in 2022
- Purple blocks are areas which were forest land in 2018 and these have now become other land uses in 2022

		Land use at end of inventory cycle 2022					
		Forest Land	Cropland	Grassland	Wetlands	Settlements	Other
Land use at start of inventory cycle 2018	Forest Land	Forest Land remaining Forest Land	Forest Land converted to Cropland	Forest Land converted to Grassland	Forest Land converted to Wetlands	Forest Land converted to Settlements	Forest Land converted to Other Land
	Cropland	Cropland converted to Forest Land	Cropland remaining Cropland	Cropland converted to Grassland	Cropland converted to Wetlands	Cropland converted to Settlements	Cropland converted to Other Land
	Grassland	Grassland converted to Forest Land	Grassland converted to Cropland	Grassland remaining Grassland	Grassland converted to Wetlands	Grassland converted to Settlements	Grassland converted to Other Land
	Wetlands	Wetlands converted to Forest Land	Wetlands converted to Cropland	Wetlands converted to Grassland	Wetlands remaining Wetlands	Wetlands converted to Settlements	Wetlands converted to Other Land
	Settlements	Settlements converted to Forest Land	Settlements converted to Cropland	Settlements converted to Grassland	Settlements converted to Wetlands	Settlements remaining Settlements	Settlements converted to Other Land
	Other	Other Land converted to Forest Land	Other Land converted to Cropland	Other Land converted to Grassland	Other Land converted to Wetlands	Other Land converted to Settlements	Other Land remaining Other Land

Forest Land remaining Forest Land

Non-Forest Land converted to Forest Land

Forest Land converted to Non-Forest Land

Non-Forest Land remaining Non-Forest Land on which changes to trees on Non-Forest Land are tracked

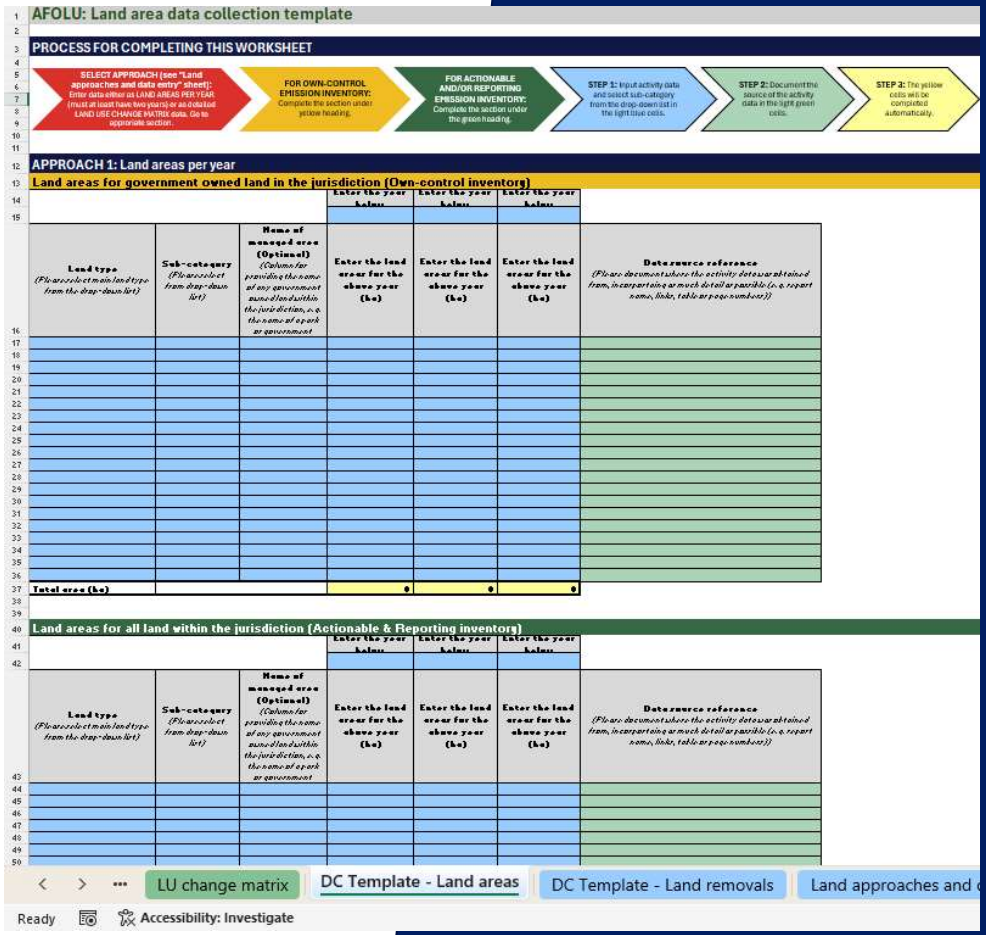
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Land data collection template

Process for entering data explained at the top

Approach 1 data entry for own-control inventory

Approach 1 data entry for actionable inventory



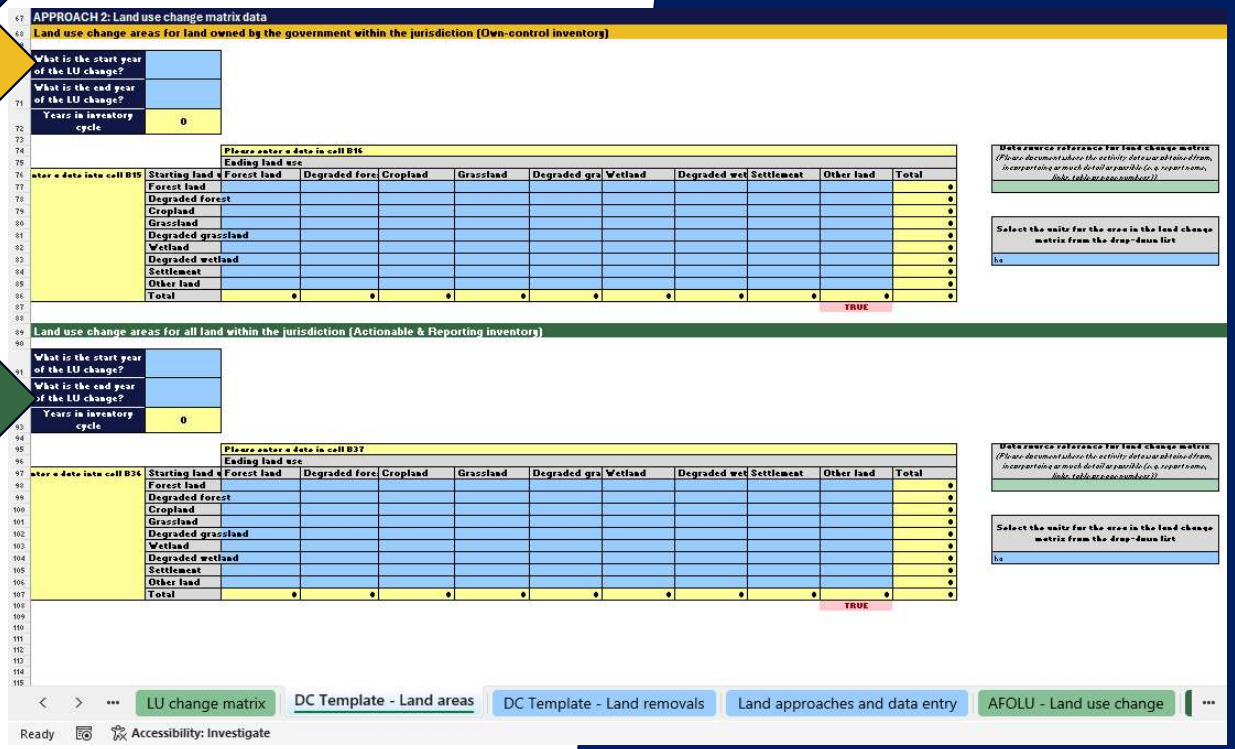
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Land data collection template

Below Approach 1 is Approach 2 data entry

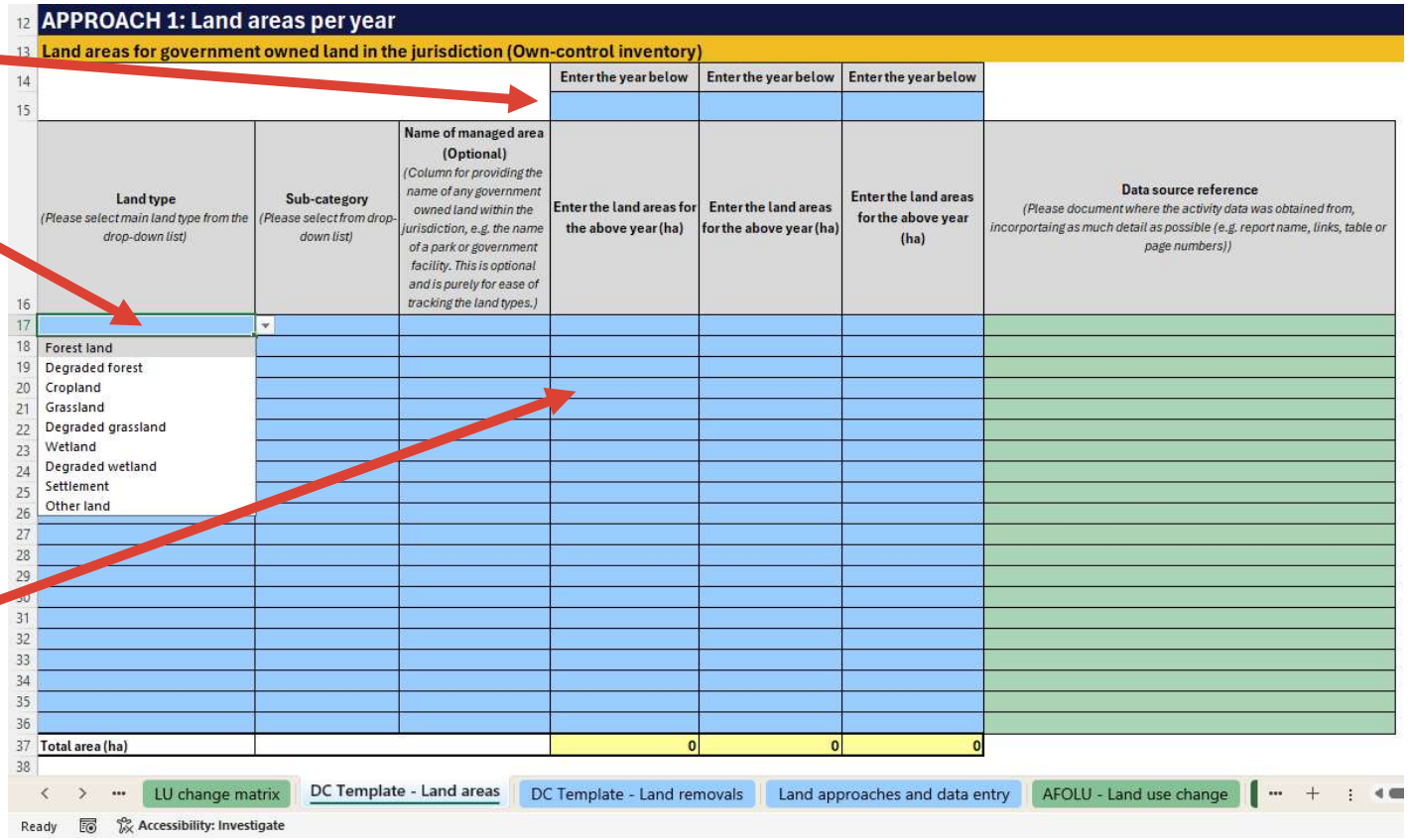
Approach 2 data entry for own-control inventory

Approach 2 data entry for actionable inventory



Data entry for approach 1

- First enter the year of the data in row 15
- Select the main land type from the drop-down list (described in session 4) in column A
- Then select the sub-category from the drop-down list in column B
- Column C is optional and is added to try and make it easier to track the government owned areas by name
- Now enter the land area (in hectares) in the relevant year columns
- Write down the source of the data in the green cells

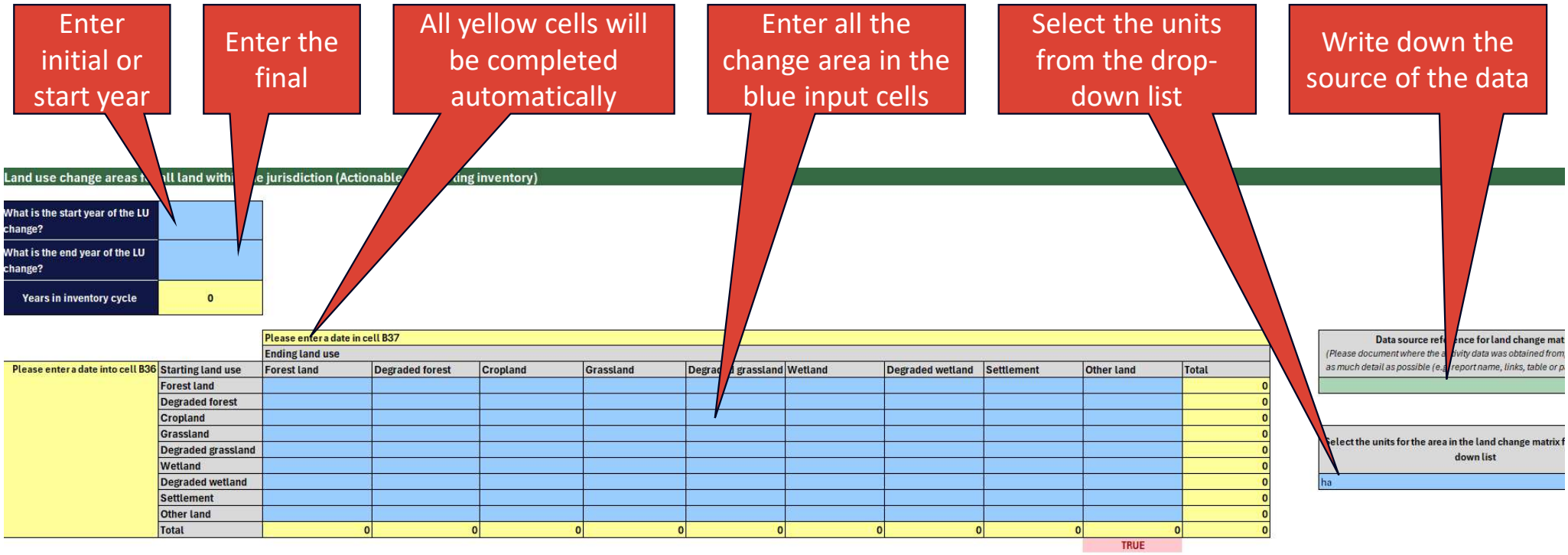


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Example of approach 1 data entry

EXAMPLE data entry for land use by year			Enter the year below	Enter the year below	Enter the year below
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Degraded wetland	Non-woody wetland		0	10	12
Settlement	Total residential		2 400	2 400	2 435
Other land	Total		674	674	648
Total area (ha)			**11 323**	**11 323**	**11 323**

Data entry for approach 2



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Example of approach 2 data entry

Entering the above data into the land change matrix data entry form

What is the start year of the LU change?	2018
What is the end year of the LU change?	2020
Years in inventory cycle	2

		2020									
		Ending land use									
2018	Starting land use	Forest land	Degraded f	Cropland	Grassland	Degraded g	Wetland	Degraded w	Settleme	Other land	Total
	Forest land	2 622 783		10 314	139 129	146	2 349		4 303	1 697	**2 780 722**
	Degraded forest										**0**
	Cropland	17 106		1 332 966	1 214	0	194		4 197	20	**1 355 697**
	Grassland	244 779		38 578	2 454 677	508	4 709		8 317	10 988	**2 762 556**
	Degraded grassland	895		11	893	2 177	11		5	0	**3 991**
	Wetland	2 955		1 909	5 488	6	352 056		1 087	1 131	**364 632**
	Degraded wetland										**0**
	Settlement	2 451		1 448	13 542	30	1 314		295 784	51	**314 620**
	Other land	13 188		1 048	28 289	21	2 749		446	21 774	**67 513**
	Total	**2 904 156**	**0**	**1 386 274**	**2 643 231**	**2 887**	**363 383**	**0**	**314 140**	**35 661**	**7 649 732**
										TRUE	

Data source reference for land change matrix

(Please document where the activity data was obtained from, incorporating as much detail as possible (e.g. report name, links, table or page numbers))

Mpumalanga Province Land Change matrix from the SANLC data (https://ww

Select the units for the area in the land change matrix from the drop-down list

ha

LU change matrix | DC Template - Land areas | DC Template - Land removals | Land approaches and data entry | AFOLU - Land use change

Accessibility: Investigate

For more information, visit www.ukpact.co.uk

Land homework

- Go to the training platform (https://ukpact.lateral.co.za/) and download the land data collection templates from todays session
  - These will also be emailed to the champions in the next week
- Land:
  - Source the land area and land removal data required (for own-control and actionable/reportable inventory)
    - For land areas the data could be from years earlier than 2025, but try to get the latest data possible
    - For land removals data for 2025 is required
  - Enter the data into the template using the approach 1 data entry
  - If a land change matrix is available (SANLC provides it at provincial level) then try entering data using the approach 2 (provincial example is provided in the data collection template)
- Put your data into a presentation and bring it to the next session and tell us about the data sources and any challenges you may have experienced



Open door sessions

- If you are experiencing challenges or are not sure what to do please join one of the upcoming “Open door” sessions so we can work through the issues:
  - Thursday 6th Aug 11am-12pm
  - Wednesday 12th Aug 2-3pm



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THANK YOU

Stay in touch:



www.ukpact.co.uk



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