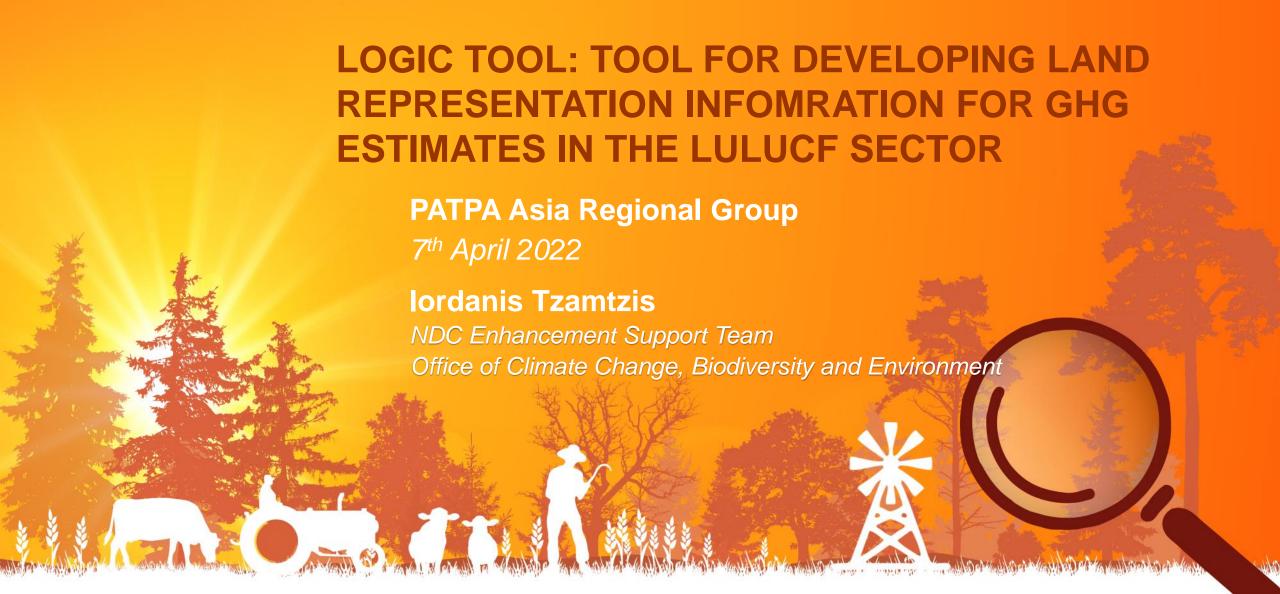


#### FAO and the Enhanced transparency framework



### FAO LoGIc tool (rel.1.2.en.1) | objective

□ The analysis of countries' land area information for the purpose of land representation for national GHG inventories in the LULUCF sector





### FAO LoGIc tool (rel.1.2.en.1) | characteristics

- Beta version
- application which uses a step-by-step approach to guide the user sequentially from uploading the input data to exporting the final results



☐ Utilizes country information as input data obtained with the use of the FAO Collect Earth tool or other software applying similar approaches, namely land-use classification based on sampling approach at a plot level

## FAO LoGIc tool (rel.1.2.en.1) | characteristics

■ Works with any country-specific landuse stratification scheme

One of the main challenges countries face is the collection of land-use information for longer time-series, especially for previous years





■ Built-in functionality for 'backasting'/'forecasting' & gap-filling to ensure a consistent time series (provided that certain requirements are met)



□ all necessary information for land representation to develop the GHG inventory for LULUCF sector & report in CRTs GHGs as adopted at COP26 (dec. 5/CMA.3) (annual area analysis, 20-years area analysis, land-use conversion matrices)





The tool utilizes country information to develop the land representation

However, certain rules & requirements apply to the structure of the input data



The user must ensure that the content of the 'input file' respects specific requirements before being inserted into the tool

It refers to both the format & the content of the input data



- ✓ It is an excel-based tool, therefore the input file should also be in an excel format
- ✓ It has been designed to work with input data on land-use using the FAO Collect Earth tool, or other software applying similar approaches, namely land-use classification based on a sampling approach which provides land-use information at the plot level

	Α	В	С	D	Е	F	G	Н	1.0	J	K	L	M	N	0	Р	Q	R	S	Т	U	V	
1 1	PLOT ID	REGION	SOIL	ECO ZONE	CLIMATE ZONE	AREA	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	
2	1	Abuja	HAC	SCs	1	6	TC-GI																
3	2	Abuja	HAC	SCs	1	6	P-AL	TC-GI	TC-GI	TC-GI													
4	3	Abuja	HAC	SBSh	1	6	P-AP																
5	4	Abuja	HAC	SBSh	1	6	P-AP																
6	5	Abuja	HAC	SBSh	1	6	P-AP																
7	6	Abuja	HAC	SBSh	1	6	TC-GI	TC-OL	TC-OL	TC-OL	TC-OL												
8	7	Abuja	HAC	SBSh	1	6	P-AL																
9	8	Abuja	HAC	SBSh	1	6	AT-																
10	9	Abuja	HAC	SBSh	1	6	P-AL																
11	10	Abuja	HAC	SBSh	1	6	AT-																
12	11	Abuja	HAC	SBSh	1	6	TC-JA																
13	12	Abuja	HAC	SBSh	1	6	AT-																
4	13	Abuja	HAC	SBSh	1	6	P-AL																
15	14	Abuja	HAC	SBSh	1	6	AT-																
16	15	Abuja	HAC	SBSh	1	6	TC-GI																
17	16	Abuja	HAC	SBSh	1	6	TC-JA																
18	17	Abuja	HAC	SBSh	1	6	TC-OL																
19	18	Abuja	HAC	SBSh	1	6	TC-JA																
20	19	Abuja	HAC	SBSh	1	6	P-AL	P-AL	P-AL	TC-GI													
21	20	Abuja	HAC	SBSh	1	6	P-AL	TC-OL															
22	21	Bizerte	HAC	SCs	1	6	TF-PA																
23	22	Abuja	HAC	SBSh	1	6	AT-																
4	23	Abuja	HAC	SBSh	1	6	P-AL	TC-GI															
25	24	Abuja	HAC	SBSh	1	6	P-AL																
6	25	Abuia	HAC	SBSh	1	6	TC-IA	TC-IA	TC-IA	TC-IA	TC-IA	TC-JA	TC-IA	TC-IA	TC-IA	TC-JA	TC-JA	TC-JA	TC-JA	TC-JA	TC-JA	TC-IA	



✓ the 'input file' should contain the information on land use for all plots & for all available years for the area of interest



- ✓ starting year of the GHG inventory period (GHGIP) <= 2005
  </p>
- ✓ number of years for which land-use information is available (at plot level)
  >= 16

(e.g., if 2000 is the starting year, the input file needs to contain land-use information until 2015)

	Α	В	C	D	E	F	G	H	1	J	K	L	M	N	0	P	Q	R	S	T	U	V	١
1	LOT ID	REGION	SOIL	ECO ZONE	CLIMATE ZONE	AREA	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	
	1	Abuja	HAC	SCs	1	6	TC-GI																
	2	Abuja	HAC	SCs	1	6	P-AL	TC-GI	TC-GI	TC-GI													
	3	Abuja	HAC	SBSh	1	6	P-AP																
	4	Abuja	HAC	SBSh	1	6	P-AP																
	5	Abuja	HAC	SBSh	1	6	P-AP																
	6	Abuja	HAC	SBSh	1	6	TC-GI	TC-OL	TC-OL	TC-OL	TC-OL												
	7	Abuja	HAC	SBSh	1	6	P-AL																
	8	Abuja	HAC	SBSh	1	6	AT-																
0	9	Abuja	HAC	SBSh	1	6	P-AL																
1	10	Abuja	HAC	SBSh	1	6	AT-																
2	11	Abuja	HAC	SBSh	1	6	TC-JA																
3	12	Abuja	HAC	SBSh	1	6	AT-																
4	13	Abuja	HAC	SBSh	1	6	P-AL																
5	14	Abuja	HAC	SBSh	1	6	AT-																
5	15	Abuja	HAC	SBSh	1	6	TC-GI																
7	16	Abuja	HAC	SBSh	1	6	TC-JA																
В	17	Abuja	HAC	SBSh	1	6	TC-OL																
9	18	Abuja	HAC	SBSh	1	6	TC-JA																
0	19	Abuja	HAC	SBSh	1	6	P-AL	P-AL	P-AL	TC-GI													
1	20	Abuja	HAC	SBSh	1	6	P-AL	TC-OL															
2	21	Bizerte	HAC	SCs	1	6	TF-PA																
3	22	Abuja	HAC	SBSh	1	6	AT-																
4	23	Abuja	HAC	SBSh	1	6	P-AL	TC-GI															
5	24	Abuja	HAC	SBSh	1	6	P-AL																
5	25	Abuia	HAC	SBSh	1	6	TC-IA	TC-IA	TC-IA	TC-IA	TC-JA	TC-IA	TC-JA	TC-IA	TC-IA	TC-JA	TC-JA	TC-IA	TC-IA	TC-IA	TC-IA	TC-IA	



Same column length

X1:	1	<b>∨</b> : [X			mn struct	.a.o	, 0.0	.0. 0			9 110		, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		, Dict		O G								
					_	_	_								_	-	_	_	_	_					
4	Α	В	С	D	Е	F	G	Н	ı	J	K	L	М	N	0	Р	Q	R	S	Т	U	V	W		
I	PLOT ID	REGION			CLIMATE ZONE	AREA	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015			
2	1	Abuja	HAC	SCs	1	6	TC-GI	TC-GI	TC-GI		TC-GI	TC-GI		TC-GI	TC-GI		TC-GI				TC-GI				
3	2	Abuja	HAC	iCs	1	6	P-AL	P-AL	P-AL	P-AL	P-AL	P-AL	P-AL	P-AL	P-AL	P-AL	P-AL	P-AL	P-AL	TC-GI	TC-GI				
4	3	Abuja			1	6	P-AP	P-AP	P-AP	P-AP	P-AP	P-AP	P-AP	P-AP	P-AP	P-AP	P-AP	P-AP	P-AP	P-AP	P-AP	P-AP			
2 -	4	Abuja	ma	ndato	rv -1	6	P-AP	P-AP	P-AP	P-AP	P-AP	P-AP	P-AP	P-AP	P-AP	P-AP	P-AP	P-AP	P-AP	P-AP	P-AP	P-AP			
7	5	Abuja			1	6	P-AP	P-AP	P-AP	P-AP	P-AP		<u>Colum</u>	n	Na	me		Content							
0	0	Abuja	HAC	SBSh	1	0	TC-GI	TC-GI	TC-GI	TC-GI	TC-GI	-	Α		PLOT II	<b>)</b>	The plot ID								
9	8	Abuja Abuja	HAC	SBSh		0	P-AL	P-AL	P-AL AT-	P-AL AT-	P-AL AT-			_	1 201 11			<u> </u>							
0	9	Abuja	HAC	SBSh	If colun	nne	R-F	AL	P-AL	P-AL	P-AL	_	В		<b>REGIO</b>	N	Th	e admi	inistrat	ive reg	ion th	e plot f	alls in		
1	10	Abuja	HAC	SBSh				r'	AT-	AT-	AT-				COIL		Th	!			falla :				
2	11	Abuja	HAC	SBSh	not ava	ilabl	le →	JA	TC-JA	TC-JA		7	С		SOIL		In	e son z	one th	e plot	raiis in				
3	12	Abuja	HAC	SBSh	random	. vol	luoc		AT-	AT-	AT-		D		ECO ZO	ONE	Th	The ecological zone the plot falls in							
4	13	Abuja	HAC	SBSh	random	ı vai	lues	AL.	P-AL	P-AL	P-AL			_					0		-				
5	14	Abuja	HAC	SBSh	1	6	AT-	AT-			AT-		Ε		CLIMA	IE	Th	The climate zone the plot falls in							
6	15	Abuja	HAC	SBSh	1	6	TC-GI	TC-GI	TC-GI	TC-GI	TC-GI	ī			ZONE			C 0	201		J. 0 C Tai				
7	16	Abuja	HAC	SBSh	1	6	TC-JA	TC-JA	TC-JA			ר					Th	e area	the pl	ot repr	esents	. The u	nit is th		
8	17	Abuja		1		6	TC-OL	TC-OL	TC-OL	_	TC-OL	Т	F		AREA				•	the use					
9	18	Abuja	T M	andato	ry name	6	TC-JA	TC-JA	TC-JA	TC-JA	TC-JA	7			[V=== V		OH	c ucilli	icu by	the use	<u>-</u> 1				
20	19	Abuja	Ι			6	P-AL	P-AL	P-AL	TC-GI	TC-GI	T			[Year X		Th	e land-	use cla	assifica	tion of	f the pl	ot for t		
21	20	Abuja	Ι	tor the	excel	6	P-AL	P-AL	P-AL	P-AL	P-AL	1	G		(startir	ng year									
22	21	Bizerte	∐ eŀ	neet co	ntaining	6	TF-PA	TF-PA	TF-PA	TF-PA	TF-PA	T			of GHG	SIP)]	Sta	rung y	ear or	GHGIP	(e.g.,	2000)			
23	22	Abuja			•	6	AT-	AT-	AT-	AT-	AT-						Th	o land	الدو داء	eccifica	tion of	f the pl	ot for t		
4	23	Abuja	↓ 1	the inp	ut data	6	P-AL	P-AL	P-AL	P-AL	P-AL	_1	H		[Year X	+1]						i the pi	00 101 0		
2.5	24	Abuja		·		6	P-AL	P-AL	P-AL	P-AL	P-AL	_1								g., 200					
6	25		HAC	SBSh	1	6	TC-JA	TC-JA	TC-JA	TC-JA	TC-JA	1			[Voor V	'Lol	Th	e land-	use cla	assifica	tion of	f the pl	ot for t		
4	-	PLOT L	IST	<b>①</b>									•••		[Year X	+nj		ar X+n							

				exa	ict coiu	ımn struct	ure,	, ord	er 8	k nea	adın	g na	ame	, WITI	n nc	) bia	nk c	colui	mns	pet/	veei	1		
X	1		<b>∨</b> ] : [×	$\sqrt{f_x}$																				
1	Δ	4	В	С	D	E	F	G	Н	l I	J	K	L	М		N		(	)	S	Т	U	V	W
1	PLO'	T ID	REGION	SOIL	ECO ZONE	CLIMATE ZONE	AREA	2000	2001	2002	2003	2004	200	171						2012	2013	2014	2015	
2	1	L	Abuja	HAC	SCs	1	6	TC-GI	TC-GI	TC-GI	TC-GI	TC-GI	TC-	AT	_	ΑΊ	<u>-</u>	A'	$T_{-}$	TC-GI	TC-GI	TC-GI	TC-GI	
3	2	2	Abuja	HAC	SCs	1	6	P-AL	P-AL	P-AL	P-AL	P-AL	P-A	711		711	·	71	-	P-AL	TC-GI	TC-GI	TC-GI	
4	3	3	Abuja	HAC	SBSh	1	6	P-AP	P-AP	P-AP	P-AP	P-AP	P-A	P-A	T	P-A	T	$\mathbf{p}_{-}$	AL	P-AP	P-AP	P-AP	P-AP	
5	4	ļ	Abuja	HAC	SBSh	1	6	P-AP	P-AP	P-AP	P-AP	P-AP	P-A	1 -11	-	1 -23		1 -1		P-AP	P-AP	P-AP	P-AP	
6	5	5	Abuja	HAC	SBSh	1	6	P-AP	P-AP	P-AP	P-AP	P-AP	P-A	AT	_	ΑΊ	٦_	A'	$\mathbf{T}_{-}$	P-AP	P-AP	P-AP	P-AP	
7	6	5	Abuja	HAC	SBSh	1	6	TC-GI	TC-GI	TC-GI	TC-GI	TC-GI	TC-	711		711		11	1-	TC-OL	TC-OL	TC-OL	TC-OL	
8	7	7	Abuja	HAC	SBSh	1	6	P-XL	P-AL	P-AL	P-AL	P-AL	P-A	TC	GΙ	TC-	$_{\text{CI}}$	TC	-GI	P-AL	P-AL	P-AL	P-AL	
9	8	3	Abuja	HAC	202		-	AT-	AT-	AT-	AT-	AT-	ΑΊ		J1	10-	O1	10		AT-	AT-	AT-	AT-	
10	9	)	Abuja	HAC	count	ry specific		P-AL	P-AL	P-AL	P-AL	P-AL	P-AZ	P-AL	P-AL	P-AL	P-AL	R-AL	P-AL	P-AL	P-AL	P-AL	P-AL	
11	10	0	Abuja	HAC		•	/I	AT-	AT-	AT-	AT-	AT-	₽Τ-	AT-	AT-	AT-	AT-	A'X-	AT-	AT-	AT-	AT-	AT-	
12	1	1	Abuja	HAC	nomer	nclature fo	L 🔼	TC-JA	TC-JA	TC-JA	TC-JA	TC-JA	TC-JA					1	1	4 4		•	Z-JA AT-	
13	12	2	Abuja	HAC	nlot cla	assificatio	$_{n}$	AT-	AT-	AT-	AT-	AT-	AT-		man	dato	ory to	o se	para	ite th	e m	aın		
14	13	3	Abuja	HAC	piot on			P-AL	P-AL	P-AL	P-AL	P-AL	P-AL	<b>⊥</b> .	and.	.1160	cate	odor	y & 1	ho l	and-	HEA	AL T-	
15	14	4	Abuja	HAC	SBSh	1	6	AT-	AT-	AT-	AT-	XT-	AT-	+										
16	1	5	Abuja	HAC	SBSh	1	6	TC-GI	TC-GI	TC-GI		TC-GI	TC-GI	1	sub	cate	aorv	/ usi	ing a	das	h ("-	·").	⊱GI ⊱JA	
17	10	6	Abuja	HAC	SBSh	1	6	TC-A	TC-JA	TC-JA	TC-JA	TC-JA				•			_		•			
18	1	_	Abuja	HAC	SBSh	1	6	TC-OL	TC-OL	TC-OL		TC-OL		<u>.   1</u>	vitne	out i	eavi	ng a	a spa	ice b	etwe	een	-OL	
19	18	_	Abuja	HAC	SBSh	1	6	TC-JA	TC-JA		TC-JA	TC-JA	TC-JA	יייי	года	10-jA	IV-JA	IV-JA	I IU-JA	юја	года	10-jA	ıċ-JA	
20	19		Abuja	HAC	SBSh	1	6	P. AT	D_AT					TC-GI	TC-GI				TC-GI	_	TC-GI		TC-GI	
21	20		Abuja	HAC	SBSh	1	6	P- TF	lain	LU c	ated	aorie	S <:	= 6 -	P-AL		TC-OL		. TC-OL		TC-OL		TC-OL	
22	2:		Bizerte	HAC	SCs	1	6							1	TF-PA	TF-PA	TF-PA			_	TF-PA		TF-PA	
23	2.	-	Abuja	HAC	SBSh	1	6	AT-	AT-	AT-	AT-	AT-	AT-	AT-	AT-	AT-	AT-	AT-	AT-	AT-	AT-	AT-	AT-	
24	2.		Abuja	HAC	SBSh	1	6	P-AL	P-AL	P-AL	P-AL	P-AL	P-AL	P-AL	P-AL	P-AL	TC-GI	TC-GI			TC-GI	TC-GI	TC-GI	
25	24		Abuja	HAC	SBSh	1	6	P-AL	P-AL	P-AL	P-AL	P-AL	P-AL	P-AL	P-AL	P-AL	P-AL	P-AL	P-AL	P-AL	P-AL	P-AL	P-AL	
26	2	5		HAC	SBSh	1	6	TC-JA	TC-JA	TC-JA	TC-JA	TC-JA	TC-JA	TC-JA	TC-JA	TC-JA	TC-JA	TC-JA	TC-JA	TC-JA	TC-JA	TC-JA	TC-JA	
	( )		PLOT L	IST	<b>(+)</b>											1 9								

## FAO LoGIc tool (rel.1.2.en.1) | built-in functionalities

□ IPCC approach 2 for land representation & 20 years default transition period



- ☐ provides for gap-filling, back-casting & fore-casting
- □ all 3 functionalities are implemented automatically by the tool, as part of the respective step (no need from the user to take any additional action)
- □ all 3 functionalities refer only to the information regarding the plot land-use category/subcategory classification
- □ gap-filling: the input file is 'gap-filled' when it contains gap in the time series between starting & the last year (noting that the '16-year' rule for the minimum time series is respected), e.g. if the input file contains plot information for years from 2000 to 2015 and for the year 2017, 2016 years is gap-filled copying plot information from previous year



## FAO LoGIc tool (rel.1.2.en.1) | built-in functionalities

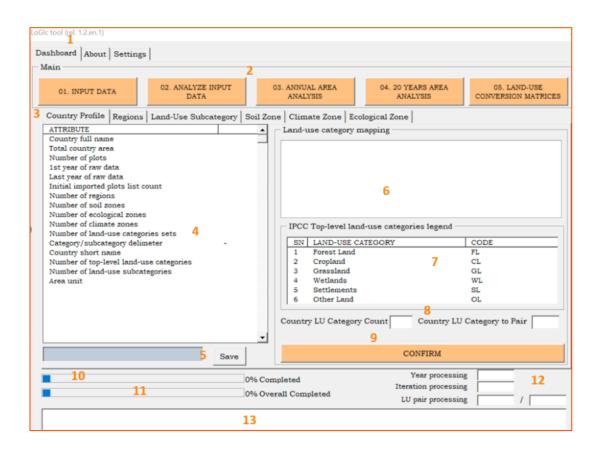
- □ back-casting: develops a plot time series for 20 years prior to the starting year of the GHGIP, e.g. if starting year = 2000, the back-casting is done back to 1980. Consequently, provides a consistent time series of plot information (land-use changes) for the number of years needed (20 years IPCC default) in order to accurately estimate the associated carbon stock changes in the GHGI starting year
- ☐ implemented using a random & iterative approach, plot by plot & year by year, starting from the closest year to the starting year (i.e., X-1)
- ☐ It is based on the type & frequency of the 'land-use status' of the plots as observed in the input file. This analysis is done automatically with the insertion of the input file
- $\Box$  a fixed number of iterations (z) is applied. In the *beta* version z=10

## FAO LoGIc tool (rel.1.2.en.1) | built-in functionalities

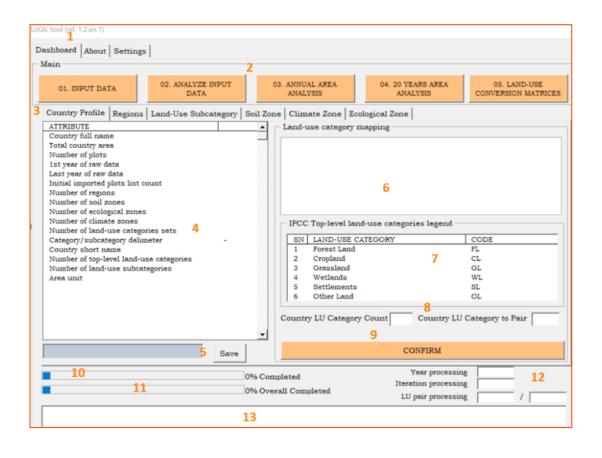
□ each iteration results in an annual area information per land-use category/subcategory change for all possible combinations of land-use categories/subcategories, given the land-use categorization applied by the country



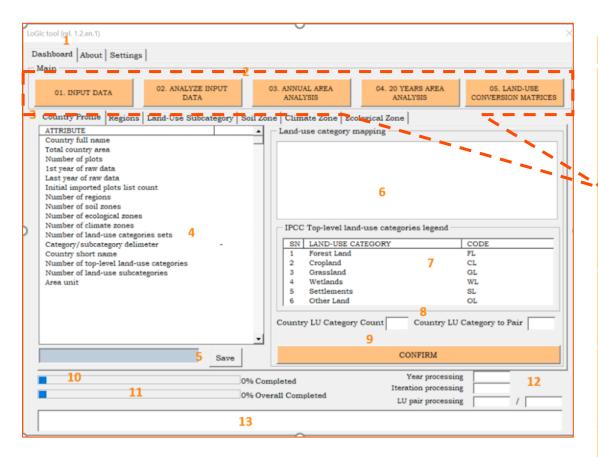
- ☐ finally, the average annual areas of land-use changes for each possible combination of land-use category/subcategory of the 'z' iterations is estimated
- □ Fore-casting: similar to the back-casting. Starting from closest year to the last year of the input file onward. Only difference → fore-casting is done for a period of years in a way that the latest year of the GHGIP is either equal to the 'current year minus two' or equal to the 'last year plus five' (i.e., fore-casted years cannot be more than five), whichever is lower



- (1) Main tool tabs containing different functionalities
- (2) Main buttons to perform each step
- (3) Dashboard's tabs presenting country-specific information based on input data
- (4) Country profile window, with country information
- (5) 'Edit window'/save button for inserting country name & area unit
- (6) 'Mapping' window for mapping the country-specific terms for land-use categories with 6 IPCC default land-use categories (2<sup>nd</sup> step)
- (7) IPCC LU categories window (IPCC main LU categories' coding, for mapping with the country-specific terms)

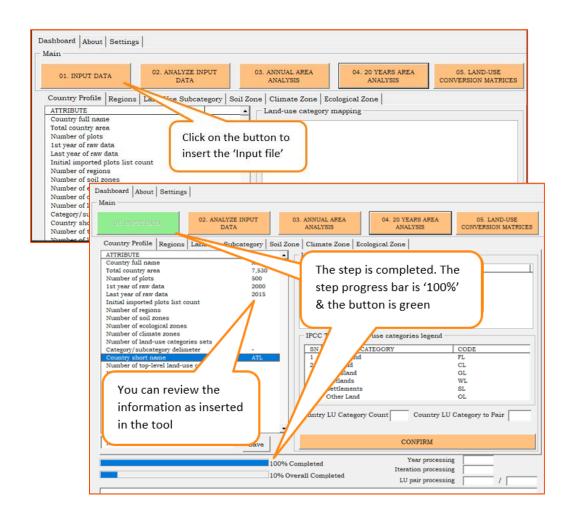


- (8) LU categories mapping counters (categories needed & remaining)
- (9) Confirmation button for final mapping between countryspecific terms & IPCC LU categories
- (10) Step progress bar
- (11) Process progress bar
- (12) Annual area analysis actions counters (3<sup>rd</sup> step)
- (13) Notification window
- ✓ The user starts from 1st step & continues with the rest
  of the steps
- ✓ To start with a new step, the tool firstly must complete
  the previous step

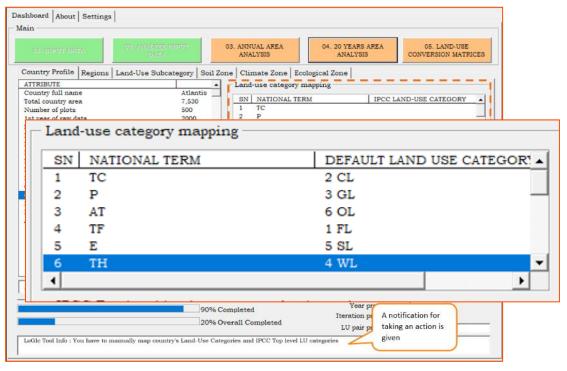


#### **5 STEPS**

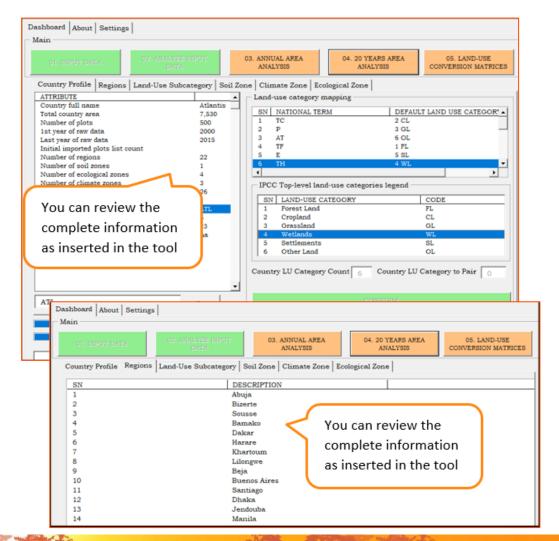
Step	Name	Description
1	INPUT DATA	Inserting input file/data in the tool Necessary automatic control checks on input file structure Gap filling (if necessary)
2	ANALYZE INPUT DATA	Complete analysis & control checks of input data & its structure  Mandatory mapping of LUC country- specific terms with IPCC default LUC
3	ANNUAL AREA ANALYSIS	Development of annual area analysis data, after the application of back-casting & fore-casting
4	20 YEARS AREA ANALYSIS	Development of 20 years area analysis data
5	LU CONVERSION MATRICES	Construction of LU conversion matrices Results with final outputs are exported



- Click step 1 to insert the Input File (orange/green colors indicate steps not completed/completed). The tool does not allow to perform a step unless the previous step is completed
- Wait until the step progress bar gets to 100% & the button of step 1 changes its color to green
- You can review the information 'recognized' by the tool from the input data in this step. However, the complete analysis of the input data is done in step 2
- You can enter country name & area unit
- Continue with step 2



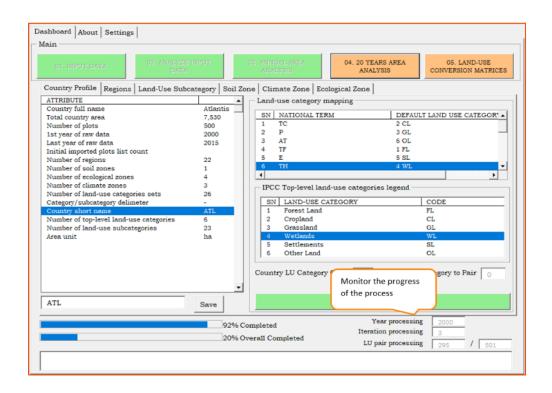
- step 2 requires <u>additional</u> action from the user before completed
- map the national terms for main LUCs with the IPCC LUCs using windows (1) & (2) & click the 'CONFIRM' button (3)
- For the mapping, left click on the national LUC (1) and then left double click on the respective IPCC LUC (2)
- To undo a mapping, left double click on the relevant national LUC (1)
- In the example provided, the mapping is as follows: TF=FL, TC=CL, P=GL, TH=WL, E=SL, AT=OL



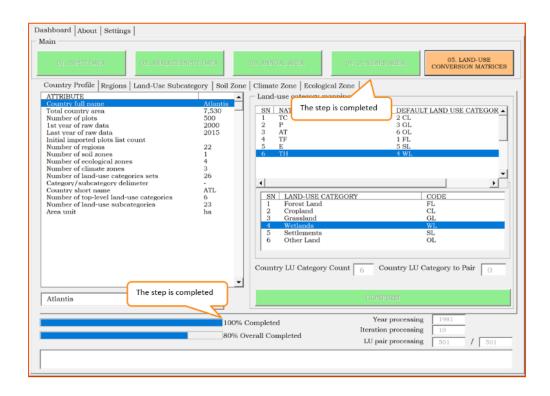
#### Step 2

• The analysis of the input data is completed. You can review the relevant information in the 'Country Profile'

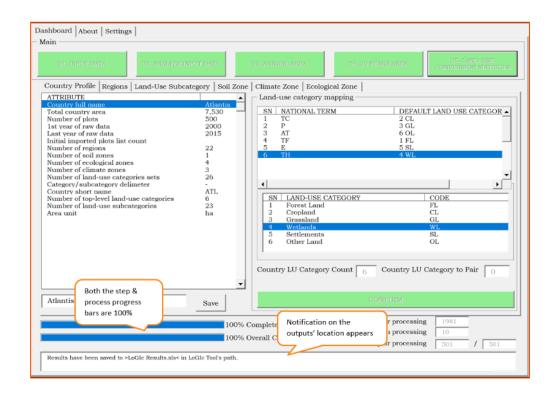
 You can review the complete lists for Regions, Land-Use Subcategory, Soil Zone, Climate Zone & Ecological Zone as they have been produced by the tool based on the input data



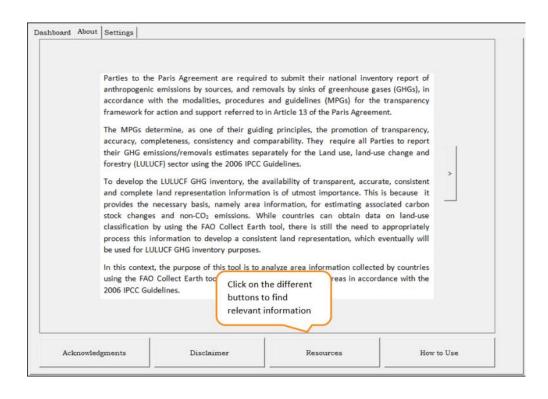
- All actions in this step are automatically performed by the tool & no additional action is required from the user
- You can monitor the progress of the process (years processed, iterations completed) in the bottom right corner
- Back-casting/fore-casting is implemented
- When the step is completed, you can move to step 4



- All actions in this step are automatically performed by the tool & no additional action is required from the user
- Land representation information applying the 20 years
   IPCC default transition period is implemented
- When the step is completed, you can move to step 5



- It is is the last step of the entire process
- All actions in this step are automatically performed by the tool & no additional action is required from the user
- Once the process is completed, the output file is exported



#### **About**

You can find more information related to the tool
 Acknowledgments, Disclaimer, Resources, How to Use



- ☐ The output file contains final results of the land representation for the area of interest
- ☐ They are saved in an excel file & can be used as activity data to develop the GHG inventory for the LULUCF sector as well as to report in the CRTs
- □ This version of the tool does not make any conversion in the units → may be needed to convert the units of the output data for either GHG emissions/removals estimates or for reporting in CRTs (e.g., areas in the CRTs are reported mainly in kilo hectares)

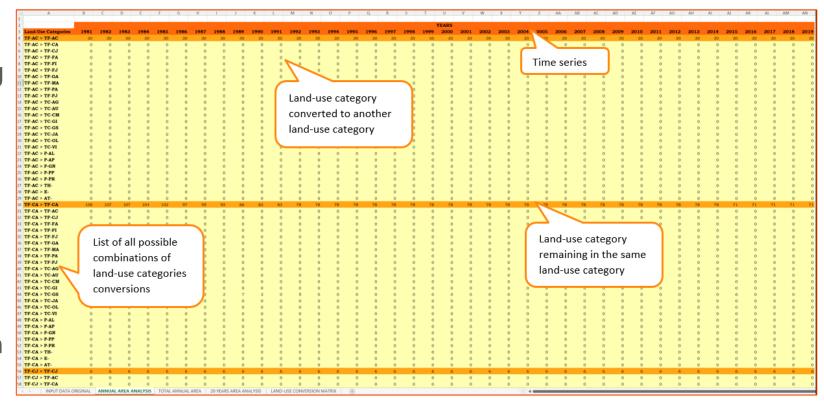
#### INPUT DATA ORIGINAL

➤ It is the input file with the input data, as inserted by the user in the tool

	A	В	C	D	E	F	G	Н	1.	1	K	L	M	N	0	P	Q	R	5	T	U	V
PI	OI TO	REGION			CLIMATE ZONE	_		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	201
Н	1	Abuja	HAC	SC <sub>5</sub>	1	6	TC-GI	TC-GI	TC-GI		TC-GI	TC-GI		TC-GI	TC-GI	TC-GI	TC-GI	TC-GI		TC-GI		
Н	- 2	Abuja	HAC	SCs	1	6	P-AL	P-AL	P-AL	P-AL	P-AL	P.AL	P-AL	P.AL	P.AL	P-AL	P-AL	P.AL	P-AL	TC-G1		
Н	3	Abuja	HAC	SBSh	1	6	P-AP	P-AP	P.AP	P.AP	P.AP	P.AP	P-AP	P.AP	P.AP	P.AP	P-AP	P.AP	P.AP	P.AP	P-AP	P.,
Н	4	Abuja	HAC	SBSh	1 1	. 6	P-AP	P-AP	P-AP	P-AP	P-AP	P-AP	P-AP	P-AP	P-AP	P-AP	P-AP	P-AP	P-AP	P-AP	P-AP	P-2
Н	3	Abuja	HAC	SBSh	1	6	P-AP	P-AP	P-AP	P-AP	P-AP	P-AP	P-AP	P-AP	P-AP	P-AP	P-AP	P-AP	P-AP	P-AP	P-AP	P.,
H	. 6	Abuja	HAC	SBSh	1 1	6	TC.GI	TC-GI	TC-GI	TC-GI	TC.GI	TC-GI	TC-GI	TC:GI	TC-GI	TC-GI	TC-GI	TC-GI	TC-OL	TC-OL	TC-OL	TC.
Н	-	Abuja	HAC	SBSh	1	6	P.AL	P.AL	P.AL	P-AL	P.AL	P.AL	P.AL	P-AL	P.AL	P.AL	P-AL	P.AL	P-AL	P-AL	P-AL	-
ŀ	9	Abuja	HAC	SBSh	1	6	AT-	AT-	AT-	AT-	AT-	AT-	AT-	AT-	AT-	AT-	AT-	AT-	AT-	AT-	AT-	P.
-		Abuja	HAC	SBSh		6	P-AL	P-AL	P-AL	P-AL	P-AL	P-AL	P-AL	P-AL	P-AL	P-AL	P-AL	P-AL	P-AL	P-AL	P-AL	-
Н	10	Abuja	HAC	SBSh		6	AT.	AT-	AT-	AT.	AT-	AT.	AT-	AT.	AT-	AT.	AT-	AT-	AT.	AT.	AT.	A
H	12	Abuja	HAC	SBSh	1	6	TC-JA	TC-JA	AT-	TC-JA	TC-JA	TC-JA	TC-JA	TC-JA	TC-JA	AT-	TC-JA	TC-JA	TC-JA			TC
⊬		Abuja	HAC	SBSh	1	6				AT-		AT-	AT-				AT-	AT-		AT-	AT-	A
H	13	Abuja	HAC	SBSh	1	6	P-AL	P-AL	P-AL	P-AL	P.AL	P.AL	P-AL	P-AL	P-AL	P-AL	P-AL	P-AL	P-AL	P-AL	P-AL	P.,
ŀ	14	Abuja	HAC	SBSb	1	6	AT-	AT-	AT.	AT-	AT-	AT-	AT-	AT-	AT-	AT-	AT-	AT.	AT.	AT-	AT-	A
4	15	Abuja	HAC	SBSh	10	. 6	TC-GI	TC-GI	TC-GI	TC-GI	TC-GI	TC-GI	TC-GI	TC-GI	TC-GI	TC-GI	TC-GI	TC-GI	TC-GI	TC-G1		
H	16	Abuja	HAC	SBSh	1	6	TC-JA	TC-JA	TC-JA	TC-JA	TC-JA	TC-JA	TC-JA	TC-JA	TC-JA	TC-JA	TC-JA	TC-JA	TC-JA	TC-JA		
⊬	17	Abuja	HAC	SBSh	1	6	TC-OL	TC-OL	TC-OL	TC-OL		TC-OL	TC-OL	TC-OL	TC-OL		TC-OL	TC-OL		TC-OL		TC
⊬	18	Abnja	HAC	SBSh	1	- 6	TC-JA	TCJA	TCJA	TC-JA	TC-JA	TC-JA	TC-JA	TC-JA	TC-JA		TC-JA	TC-JA		TCJA		TC
H	19	Abuja	HAC	SBSh	1	6	P-AL	P-AL	P-AL	TC-GI		TC-GI	TC-GI	TC-GI	TC-GI	TC-GI	TC-GI	TC-GI		TC-GI		TC
H	20	Abuja	HAC	SBSh	1	6	P-AL	P-AL	P-AL	P-AL	P-AL	P-AL	P-AL	P-AL	TC-OL		TC-OL	TC-OL			TC-OL	right control
⊩	21	Bizeste	HAC	SCs	-	6	TF-PA	TF-PA	TF-PA	TF-PA	TF-PA	TF-PA	TF-PA	TF-PA	TF-PA	TF-PA	TF-PA	TF-PA	TF-PA	TF-PA	TF-PA	TF.
⊩	22	Ahnja	HAC	SBSh	1	6	AT-	AT-	AT-	AT-	AT-	AT-	AT-	AT-	AT-	AT-	AT-	AT-	AT-	AT-	AT-	A
H	25	Abuja	HAC	SBSh	1 1	6	P-AL	P-AL	P-AL	P-AL	P-AL	P-AL	P-AL	P-AL	P-AL	TC-GI	TC-GI	TC-GI	TC-GI	TC-GI	TC-GI	TC
	24	Abuja	HAC	SBSh	1	- 6	P-AL	P-AL	P-AL	P-AL	P-AL	P-AL	P-AL	P-AL	P-AL	P-AL	P-AL	P-AL	P-AL	P-AL	P-AL	P.,
1	25	Abnja	HAC	SBSh	1	6	TC-JA	TCJA	TCJA	TC-JA	TC-JA	TC-JA	TC-JA	TC-JA	TC-JA	TC-JA	TC-JA	TC-JA	TC-JA	TCJA	TC-JA	TC
H	26	Abuja	HAC	SBSh	1	6	AT-	AT-	AT-	AT-	AT-	AT-	AT-	AT-	AT-	AT-	AT-	AT-	AT-	AT-	AT-	Λ
Ŀ	27	Sousse	HAC	SBSh	2	24	TC-OL	TC-OL	TC-OL		TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL		TC-OL		TC.
	28	Saume	HAC	SBSh	2	24	TC-GI	TC-GI	TC-GI	TC-GI	TC-GI	TC-G1	TC-GI	TC-GI	TC-GI	TC-G1	TC-GI	TC-GI	TC-GI	TC-G1	TC-GI	TC
	29	Source	HAC	SBSh	2	24	P-PP	P.PP	P.PP	P.PP	P.PP	P.PP	P.PP	P.PP	P.PP	P.PP	P.PP	P.PP	P.PP	p.pp	P.PP	P.
Н	30	Sousse	HAC	SBSh	2	24	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC.
	31	Source	HAC	SBSh	2	.24	E-	E-	E-	E-	E-	E-	E-	E-	E-	E-	E-	E-	E-	E.	E-	E
	32	Source	HAC	SBSh	2 -	24	TC-GI	TC-GI	TC-GI	TC-G1	TC.GI	TC-GI	TC-GI	TC-G1	TC-GI	TC-G1	TC-GI	TC-GI	TC-GI	TC-GI		
	33	Bamako	HAC	SBSh	2	24	TC-AU	TC-AU	TC-AU	TC-AU		TC-AU	TC-AU	TC-AU	TC-AU		TC-AU	TC-AU	TC-AU	TC-AU		TC.
	34	Bamako	HAC	SBSh	2	24	TC-OL	TC-OL	TC-OL		TC-OL	TC-OL	TC-OL	TC-OL	TC-OL		TC-OL	TC-OL	TC-OL	TC-Ot.		
	35	Bamako	HAC	SBSh	2	24	TC-OL	TC-OL	TC-OL	TC-OL				TC-OL	TC-OL		TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	
ļ.	36	Bamalco	HAC	SBSh		24	TC-OL	TC-OL	TC-OL	TC-OL		TC-OL		TC-OL	TC-OL		TC-OL	TC-OL		TC-OL		TC.
	37	Dukar	HAC	SCs	2	24	TC-JA	TC-JA	TC-JA	TC-JA	TC-JA	TC-JA	TC-JA	TC-JA	TC-JA		TC-JA	TC-JA	TC-JA	TC-JA		TC
-	38	Daltas	HAC	5Cs	2	24	TC-GI	TC-GI	TC-GI	TC-G1	TC-GI	TC-GI	TC-GI	TC-G1	TC-GI		TC-GI	TC-GI		TC-GI		
	39	Bamako	HAC	SBSh	1 2	24	TC-OL	TC-OL	TC-OL	TC-OL		TC-OL	TC-OL	TC-OL	TC-OL		TC-OL	TC-OL	TC-OL			TC.
	40	Dake	HAC	SBSh	2	24	TC-GI	TC-GI	TC-OL	TC-OL		TC-OL	TC-OL	TC-OL	TC-OL		TC-OL	TC-OL	TC-OL			
	41	Bamako	HAC	SBSty	2	24	TF-AC	TF-AC	TF-AC		TF-AC	TF-AC	TF-AC	TF-AC	TF-AC		TF-AC	TF-AC	TF-AC			TF-
	42	Bamako	HAC	SBSh	2	.24	TC-OL	TC-OL	TC-OL	TC-OL		TC-OL	TC-OL	TC-OL	TC-OL		TC-OL	TC-OL				
Ŀ	43	Bamako	HAC	SBSh	2	24	TC-OL	TC-OL	TC-OL		TC-OL	TC-OL	TC-OL	TC-OL		TC-OL	TC-OL	TC-OL	TC-OL		*******	TC
	44	Bamako	HAC	SBSh	2	24	AT-	AT-	AT-	AT-	AT-	AT-	AT-	AT-	AT-	AT-	AT-	AT-	AT-	AT-	AT-	Α.
3	45	Dulue	HAC	SBSh	2	24	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL		TC-
H	46	Harare	HAC	SBSh	- 2	24	TH-	TH-	TH-	TH-	TH-	TH-	TH-	TH-	TH-	TH-	TH-	TH-	TH-	TH-	TH-	T
	47	Harace	HAC	SBSh	2	.24	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC
1	45	Bamako	HAC	SBSh	2	24	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC
1	49	Duleur	HAC	SBSh	2	24	AT-	AT-	AT-	AT-	AT-	AT-	AT-	AT-	AT-	AT-	AT-	AT-	AT-	AT-	AT-	A
-	50	Bizeste	HAC	SCi	1	6	P-GN	P-GN	P-GN	TF-FJ	TF-F]	TF-FJ	TF-F)	TF-FJ	TF-FJ	TF-FJ	TF-FI	TF-FJ	TF-FJ	TF-FJ	TF-F)	TF
H	51	Harace	HAC	SBSh	2	24	P-AP	P-AP	P-AP	P-AP	P-AP	P-AP	P-AP	P-AP	P-AP	P-AP	P-AP	P-AP	P-AP	P-AP	P-AP	P.
L	52	Dukar	HAC	5BSh	2	.24	P-AP	P-AP	P-AP	P-AP	P-AP	P-AP	P-AP.	P-AP	P-AP	P-AP	P-AP	P-AP	P-AP	P-AP	P-AP	P.
L	53	Dukar	HAC	SBSh	2	24	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC
1	54	Harare	HAC	SBSh	2	24	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	AC-OF	TC-OF	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC
L	55	Dakar	HAC	SBSh	2	24	P-AL	P-AL	P-AL	P-AL	P-AL	P-AL	P-AL	P-AL	P-AL	P-AL	P-AL	P-AL	P-AL	P-AL	P-AL	P.
Ľ	56	Harare	HAC	SBSh	2	24	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC
L	57	Harace	HAC	SB5h	2	24	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL		TC
L	58	Dalas	HAC	SBSh	2	24	P-PP	P-AP	P-AP	P-AP	P-AP	P-AP	P-AP	P-AP	P-AP	P-AP	P-AP	P-AP	P-AP	P-AP	P-AP	P.
	59	Няске	HAC	5BSh	2	.24	TC-OL	TC-OL	TC-OL		TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC
	60	Нягие	HAC	SBSh	2	24	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC
	-61	Harace	HAC	SBSh	2	24	TC-GI	TC-GI	TC-GI	TC-GI	TC-GI	TC-GI	TC-GI	TC-GI	TC-GI	TC-GI	TC-GI	TC-GI	TC-GI	TC-GI	TC-GI	TC
	62	Насасе	HAC	SBSh	2	. 24	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC-OL	TC
	63	Harace	HAC	SBSh	2	24	TH-	TH-	TH-	TH-	TH-	TH-	TH-	TH-	TH-	TH-	TH-	TH-	TH-	TH-	TH-	T
_	64	Hieren	17.15	CRCI.	3	24	70.00	TO CT	TO OIL	THE PLAN	200 00	TO CT	70.01	70 07	We ex	THE PLE	TO OF	***	TO OF	THE COL	TO OIL	Tr

#### **ANNUAL AREA ANALYSIS**

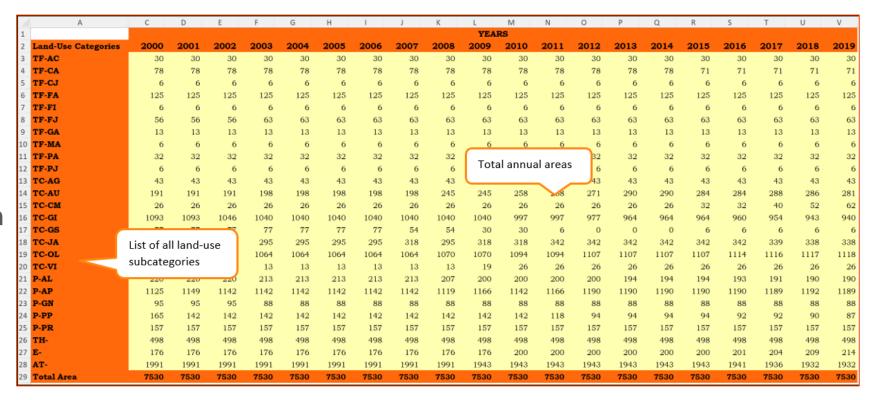
- Annual areas for LUCs remaining in the same LUC & for LUCs converted to another LUC for all possible combinations based on the information provided with the input data
- ➤ It covers the whole GHGIP and the back-casted years
- ➤ It can be used to estimate carbon stock changes associated with annual changes (e.g., initial change in biomass carbon stocks due to land-use change)





#### **TOTAL ANNUAL AREA**

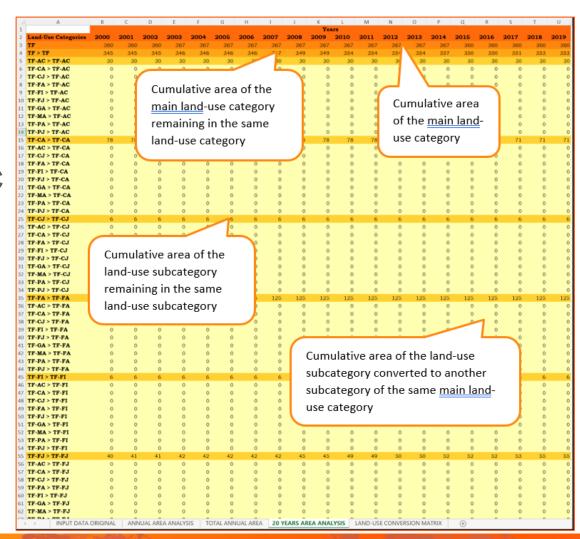
- Total annual areas for all landuse subcategories
- > Covers the whole GHGIP
- ➤ It can be used to report data in CRT4.A 4.F





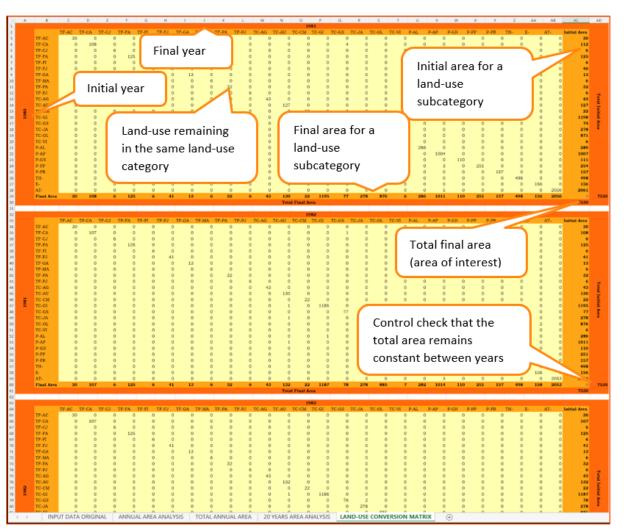
#### **20 YEARS AREA ANALYSIS**

- ➤ Cumulative areas, applying 20 years IPCC default transition period for LUCs converted to another LUC for all possible combinations of LUCs based on the information provided with the input data
- > Covers the whole GHGIP
- ➤ It can be used to estimate carbon stock changes using cumulative areas (e.g., carbon stock changes in biomass pool, soil organic matter pool)
- ➤ It can be used to report data in CRT4.A 4.F



#### **LAND-USE CONVERSION MATRIX**

- ➤ Land-use conversion matrices for the annual changes for all LU subcategories
- > Covers the whole GHGIP & back-casted years
- ➤ It can be used to report in CRT4.1 & in the NID





#### FAO LoGIc tool (rel.1.2.en.1) | next steps



- ➤ Collecting comments from expert review
- > Performing improvements
- ➤ Releasing next version of the LOGIC tool

Contact information iordanis.tzamtzis@fao.org



#### FAO and the Enhanced transparency framework

www.fao.org/climate-change/our-work/what-we-do/transparency/etf@fao.org

