



Technical support for Greenhouse Gases Inventory improvements

29 May 2019

Prepared for:
JRC workshop - Varese

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1. Task 1: objectives, timeline and outputs
2. Task 2: objectives, timeline and outputs
3. Preliminary issues identified via Questionnaire
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“Trouble creates a capacity to handle it.”

Oliver Wendell Holmes

Task 1:

Bilateral support on the establishment of Forest Reference Levels (FRL)



Support for the Capacity Building in MS to implement FRLs and improvements of GHGI as requested by the LULUCF Regulation

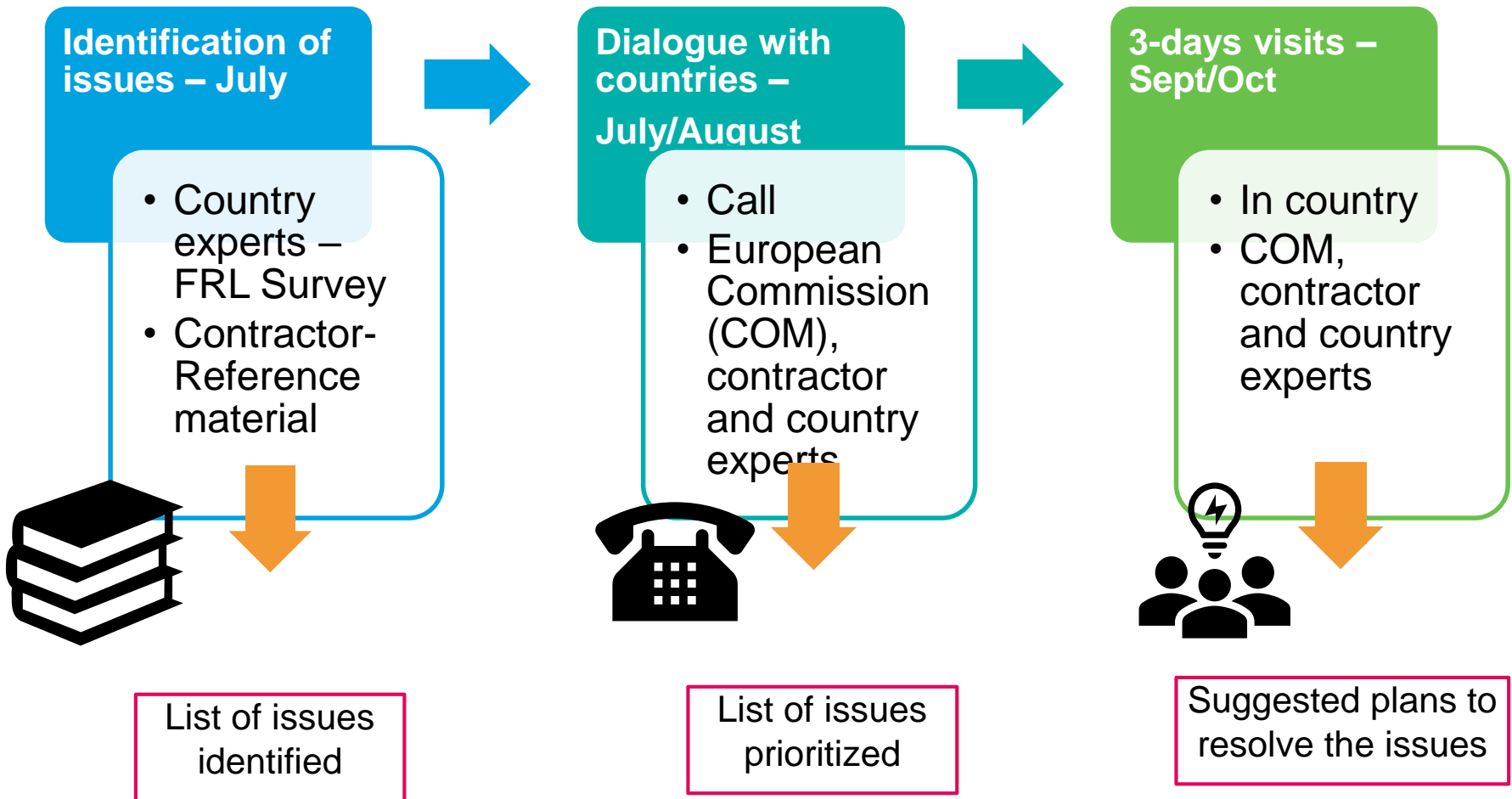
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Objectives

- **Provide bilateral** technical support to specific Member States (MS)+Iceland in the preparation of the NFAPs and FRLs for the period of 2021 to 2025
- Help to **identify technical solutions and practical** approaches that the country can use to develop the FRL
- Help to **strengthen the capacity within** the country for undertaking the requirements of the new LULUCF Regulation

Timeline of task 1 – FRL support: 2018



Outputs of task 1



Delivered to 10 Countries in August/September 2018

Technical Guidance Package and preliminary Capacity Building Plan for [insert Member State]

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To be discussed during the visit



Outputs of task 1

Delivered to 9 Countries in
October/November 2018



Visit Report and Final Capacity Building Plan for Country

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Description, Recommendations, Timeframe, Status, Resources



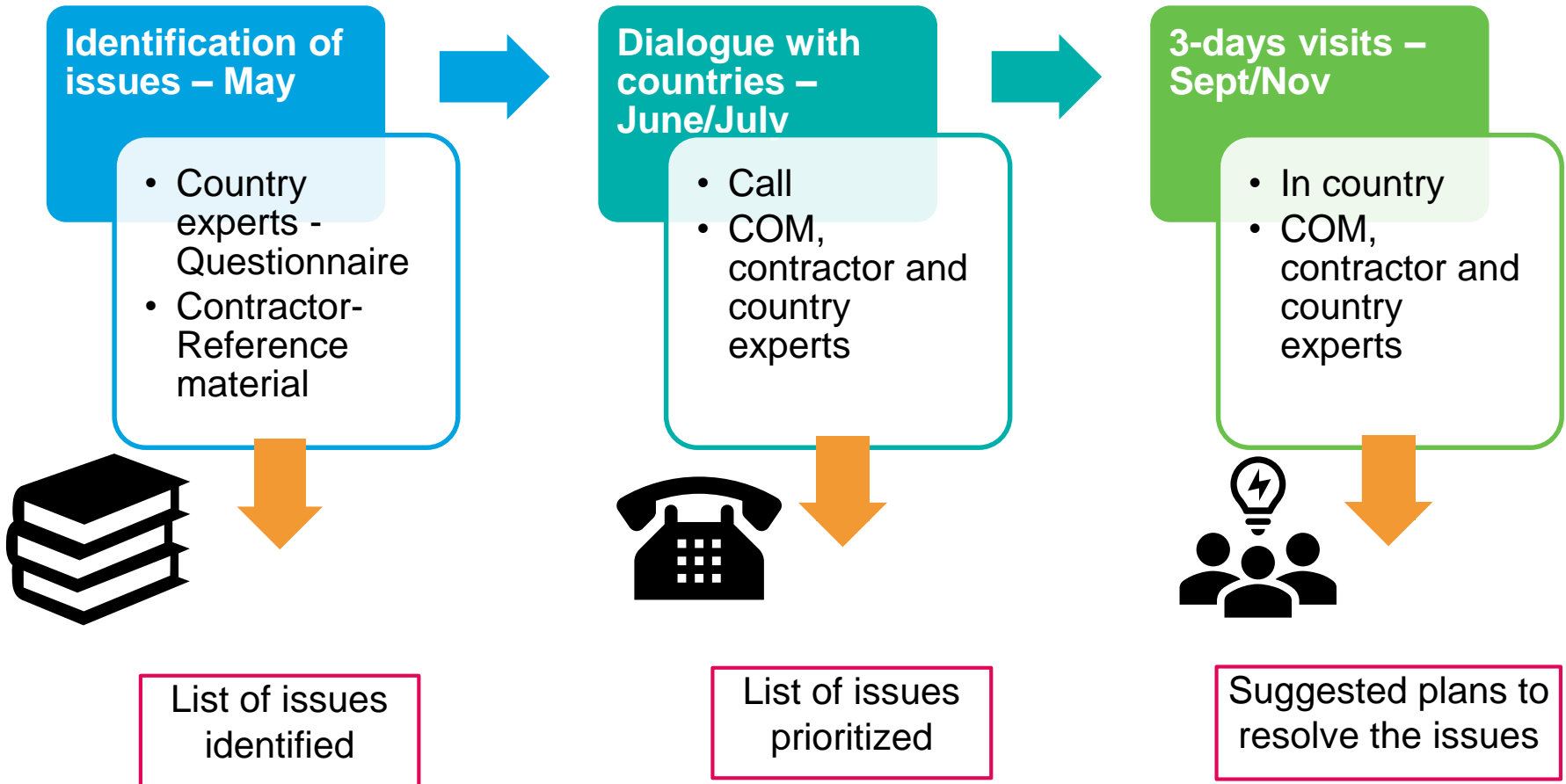
Task 2:

Assistance to the improvement of land-based reporting in the LULUCF greenhouse gas inventory

Objectives

- **Provide bilateral** technical support to specific MS+Iceland for improvements in GHG LULUCF Inventory
- Help to **identify technical solutions and practical approaches** that the country can use to improve GHG inventories
- Help to **strengthen the capacity** within country for undertaking the requirements of the new LULUCF Regulation geographically explicit approach

Timeline of task 2 – LULUCF GHGI support - 2019



Final outputs of task 2: for each country



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Capacity Building Plan for Country

for the purpose of providing technical support to Country in the preparation of National Forestry Accounting Plans & Forest Reference Levels for 2021 – 2025 and of GHG inventories of emissions and removals needed for accounting under the new LULUCF Regulation

Preliminary issues identified and described via Questionnaire

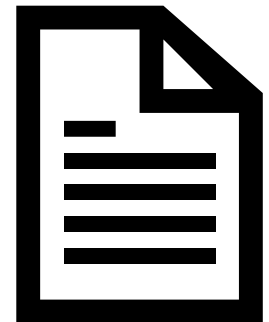
“A problem well put is half solved.”
— John Dewey

Questionnaire to identify specific needs related to the LULUCF GHG Inventories

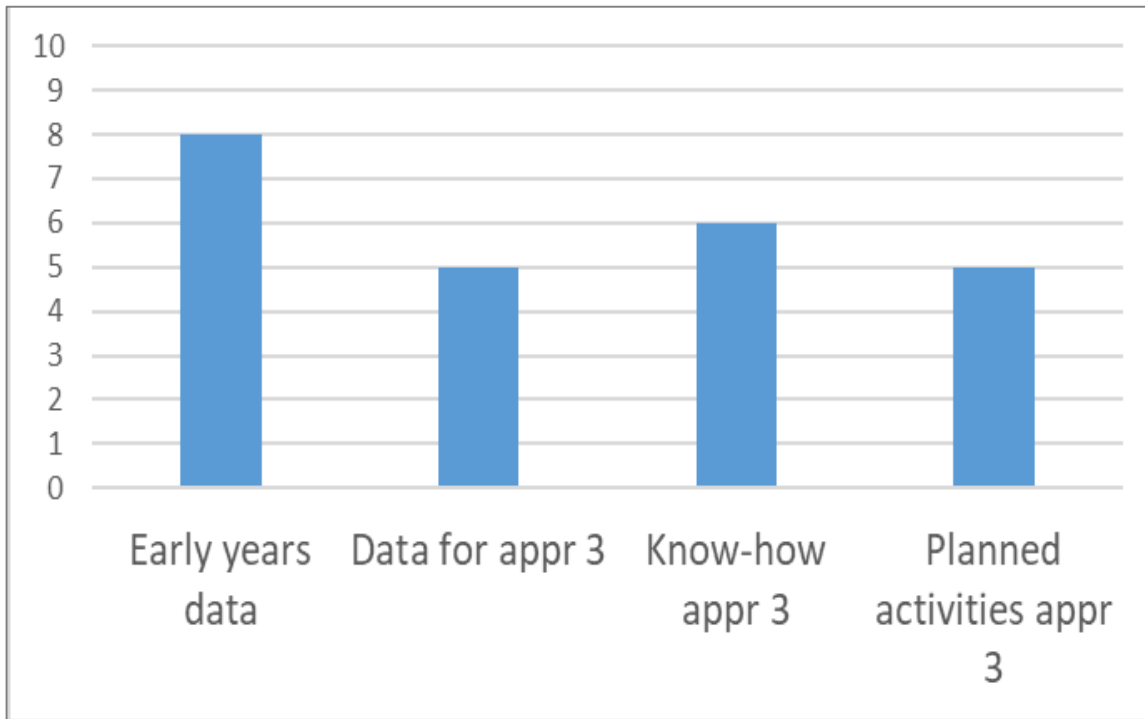
1. The LULUC transition matrix based on geographically explicit information

2. Estimating and reporting LULUCF emissions and removals

- National GHGI system
- Crosscutting issues
- Land categories and Carbon pools specific issues
- Other GHG source categories



The LULUC transition matrix based on geographically explicit information: challenges



LPIS USE:

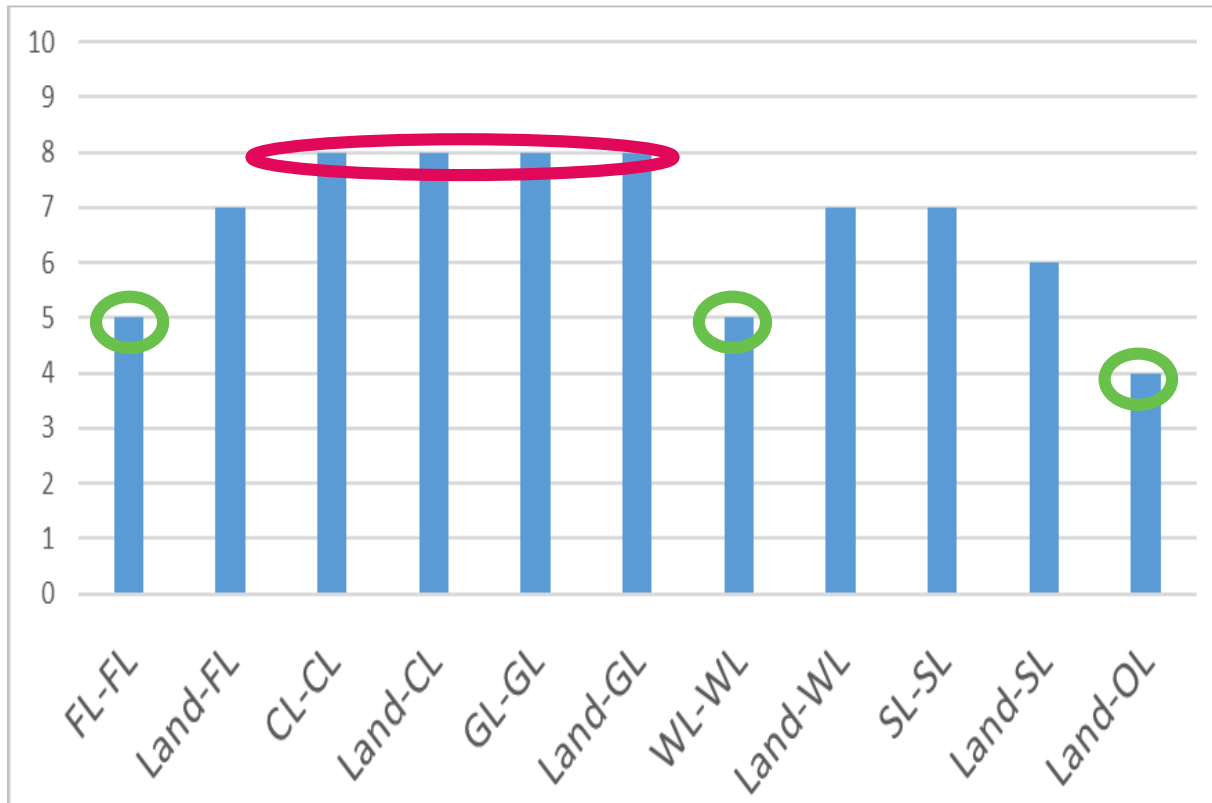
- 2 MS use it for CL↔GL
- But incomplete, not accessible, no management practices, how to harmonize with other data

- 8 countries identified challenges with data for early years: lack or inconsistencies.
- Countries have identified potential data for Approach 3 (CLC, CS databases, LPIS), but they face difficulties with their use (e.g. harmonization with statistics)
- 6 countries have not planned activities to implement approach 3

NOTE: Questions used for the graph in previous slide

- Do you lack data for the early years of the historical period? Do you have consistency issues in your time series?
- Have you identified georeferenced data which can be used in your country for a georeferenced tracking of land use categories as in Approach 3? If so, please list them. Are there sectors or variables for which you need data?
- Is there in the inventory team the know-how in terms of geospatial analyses and data processing necessary to carry out Approach 3 land use tracking?
- Do you plan activities towards geographically explicit LULUC matrix estimation?
- Do you already use LPIS datasets for the identification of areas under Managed Cropland and Managed Grassland? If not, have you considered its use? Did you identify any difficulty with its use (for example, incompatible definition of reference parcels, lack of information on land use / land cover types, lack of accessibility, incomplete time series)?

Geographically explicit identification of land: challenges



APPROACHES

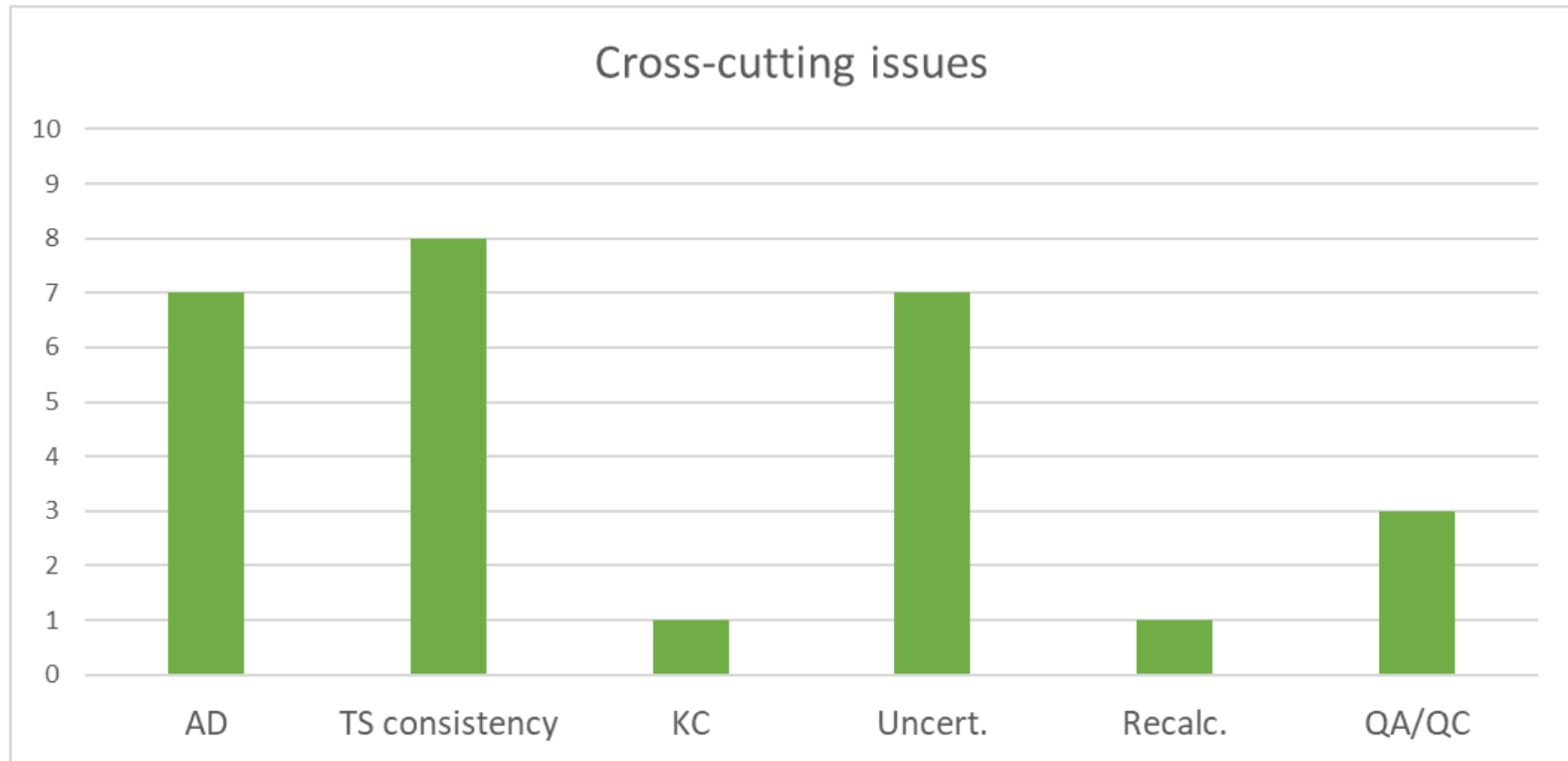
- Combinations of approaches 1-2-3 are widely used
- 3 countries use approach 2 for all LU categories

- CL, GL: challenges are connected with the use of CLC data (managed and set-aside CL, accuracy of perennial, mixed categories). Conversions might be temporary
- Particular geodata for FL
- WL is small and protected. Land OL is too small as well → not a challenge

Estimating and reporting: National GHGI system challenges

- **General:**
 - Reliance on personal commitments rather than institutional arrangements
 - Need to improve internal coordination between different agencies
- **Team capacity: a challenge for most countries**
 - Few people involved...
 - ...on a permanent basis
- **Data collection: not a main issue**
 - Need to improve collaboration with research and academic institutions
 - Difficult to make progress for the less significance emission sources
- **Improvement plan:** most countries have developed plans, but they might be not officially adopted and **resources** have not always been allocated. Some plans includes external assistance.

Estimating and reporting: Crosscutting challenges



- Activity data and Timeseries consistency: best data available only for late years
- Uncertainties: of land uses changes in maps is not well understood, uncertainty information is not accompanying the data
- Identifying Key categories (KC) is not an issue!
- QA/QC (Quality Assurance/Quality control) can be improved

Estimating and reporting: Land categories and C pools specific challenges

Country specific parameter or data on management practices are **not available**.

LU category	Pools						
	Living biomass		Dead organic matter		SOC	HWP	
	AGB	BGB	DW	IT			
FL-FL	3	2	6	6	6	1	24
Land-FL	3	3	2	3	4	0	15
CL-CL	2	3	2	2	4	0	13
Land-CL	3	4	2	2	2	0	13
GL-GL	3	4	2	2	5	0	16
Land-GL	2	3	2	2	2	0	11
WL-WL	0	0	0	0	1	0	1
Land-WL	1	1	1	1	1	0	5
SL-SL	3	3	0	0	0	0	6
Land-SL	2	3	2	2	2	0	11
Land-OL	1	2	2	2	1	0	8
	23	28	21	22	28	1	

Estimating and reporting: Other GHG source categories

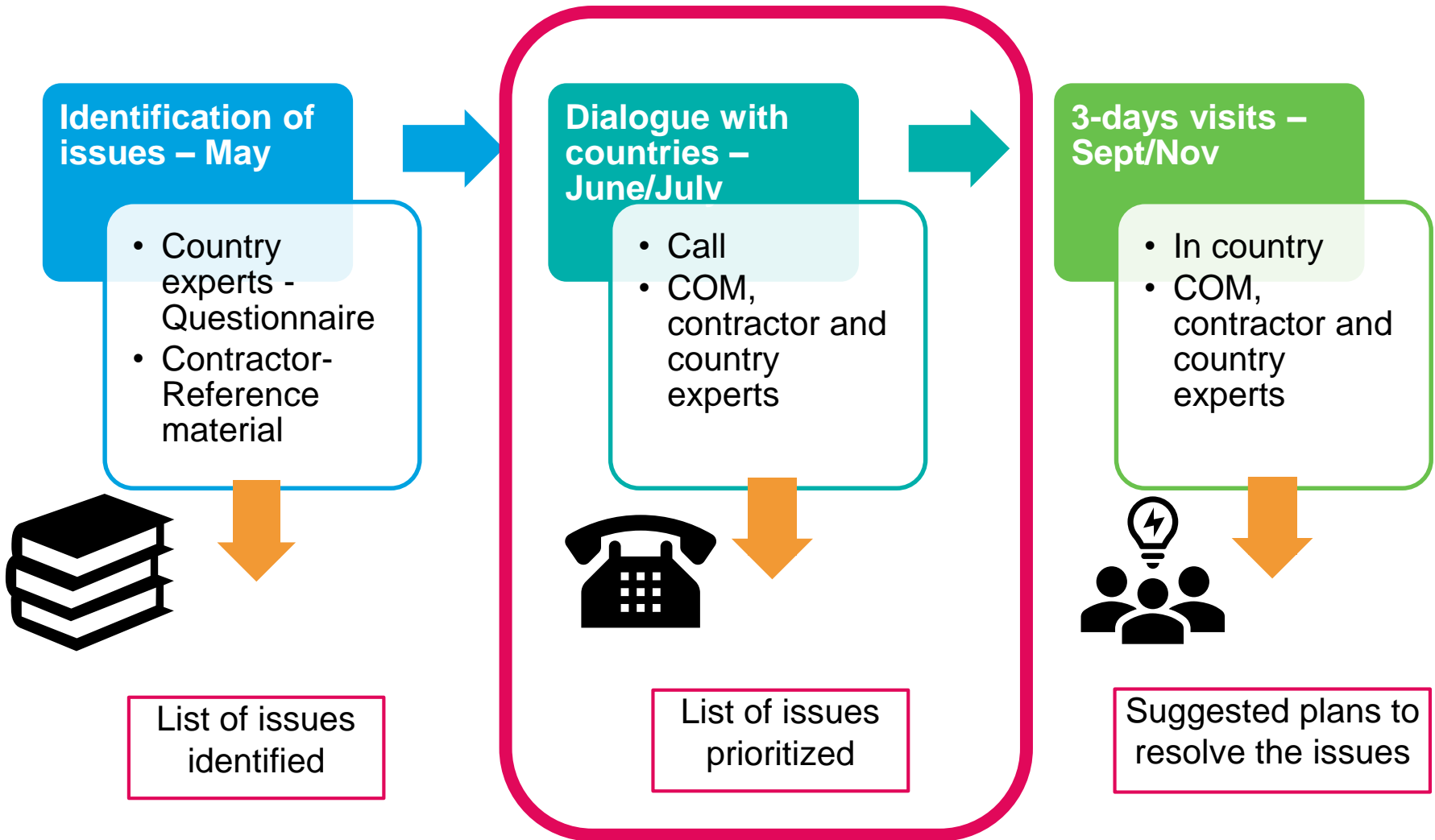
- **N₂O** emissions from **Nitrogen inputs** to managed soils and **N mineralization**/immobilization associated with loss/gain of soil organic matter
- **Drainage and rewetting** of soils
- **Biomass Burning**

- **Very few issues identified by the countries, but some are Not Estimates.**

- **Biomass burning:**

TS Consistency → Gaps in times series → Not data available at all

Next step before summer holidays



Geodatabases report: OVERALL REVIEW OF THE CONTRIBUTION THAT MAY POTENTIALLY BE MADE BY THE COPERNICUS PROGRAMME AND OTHER GEO-SPATIAL DATASETS

1. INTRODUCTION
 2. GEODATABASES DESCRIPTION
 3. GEODATABASES
 - 3.1. FOREST COVER MAP 1990 (FOREST project – FISE)
 - 3.2. EUROPEAN FOREST FIRE INFORMATION SYSTEM - EFFIS
 - ▷ 3.3. FOREST TYPE – STATUS MAPS (COPERNICUS High Resolution Layers)
 - ▷ 3.4. GRASSLANDS – STATUS MAPS (COPERNICUS High Resolution Layers)
 - 3.5. CORINE LAND COVER PLUS, CLC+
 - 3.6. CROPLAND
 - 3.7. WETLANDS
 - ▷ 3.8. LPIS
 4. METHODOLOGICAL STEPS TOWARDS A UNIFIED LULUCF SPATIAL DATASET
 5. THE ROLE OF SENTINEL IN LULUCF
- REFERENCES
- ANNEX I

- **It will be shared with the countries under this project**

Thank you!

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NOTE: Abbreviations used in this presentation

- AGB: Above Ground Biomass
- BGB: Below Ground Biomass
- C: carbon
- CL: Cropland
- CLC- Corina Land Cover
- CS: country specific
- DW: Dead Wood
- FL: Forest land
- GL: Grassland
- HWP: Harvested Wood Products
- LPIS: Land Parcel Identification System
- LT: Litter
- LU: land use
- OL: Otherland
- SL: Settlements
- SOC: Soil Organic Carbon
- WL: Wetlands