



United Nations Climate Change  
Global Climate Action



# Introduction to the Sectoral **A**ctivity data for **G**reenhouse gas **E**missions calculations (**SAGE**) –

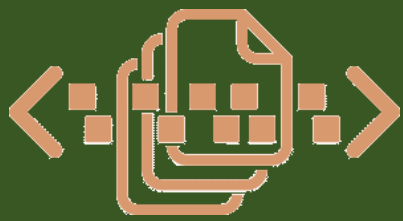
## ***A New Activity Data Platform for GHG MRV systems***

### *Part 2*

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Greenhouse Gas Management Institute*

# SAGE: Recap from Part 1





Recording metadata



Creates time series AD collections for data repository & calculations



Implemented 2006 IPCC methodology



Data analysis



Time series calculations



Data Gaps search & filling



United Nations Climate Change

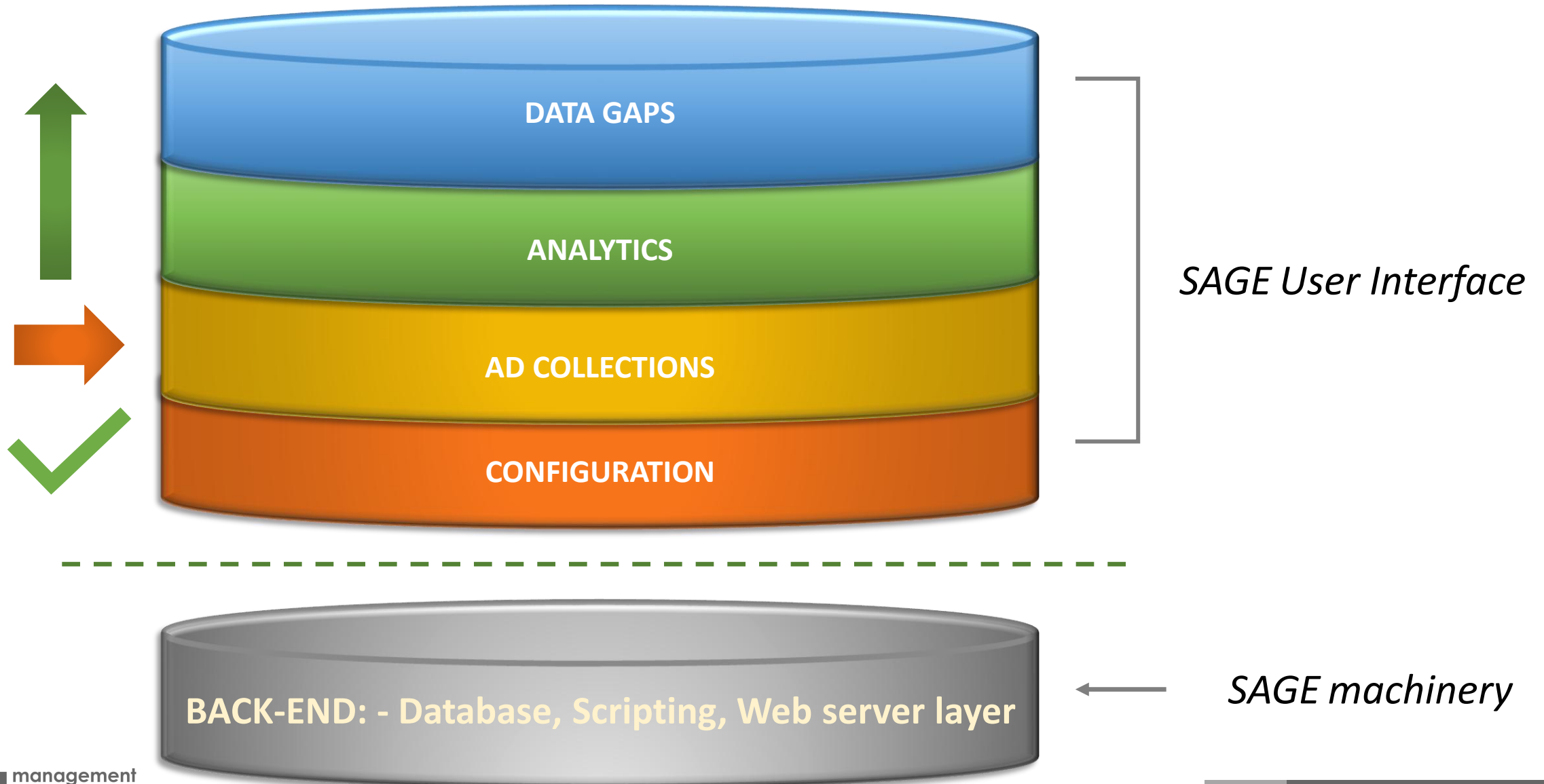
Compatible with UNFCCC/ETF & IPCC categorization



Excel Import/Export Option

Facility of import and export data via Excel files

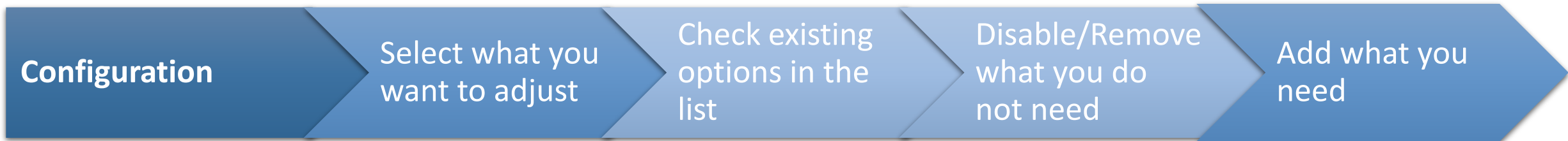
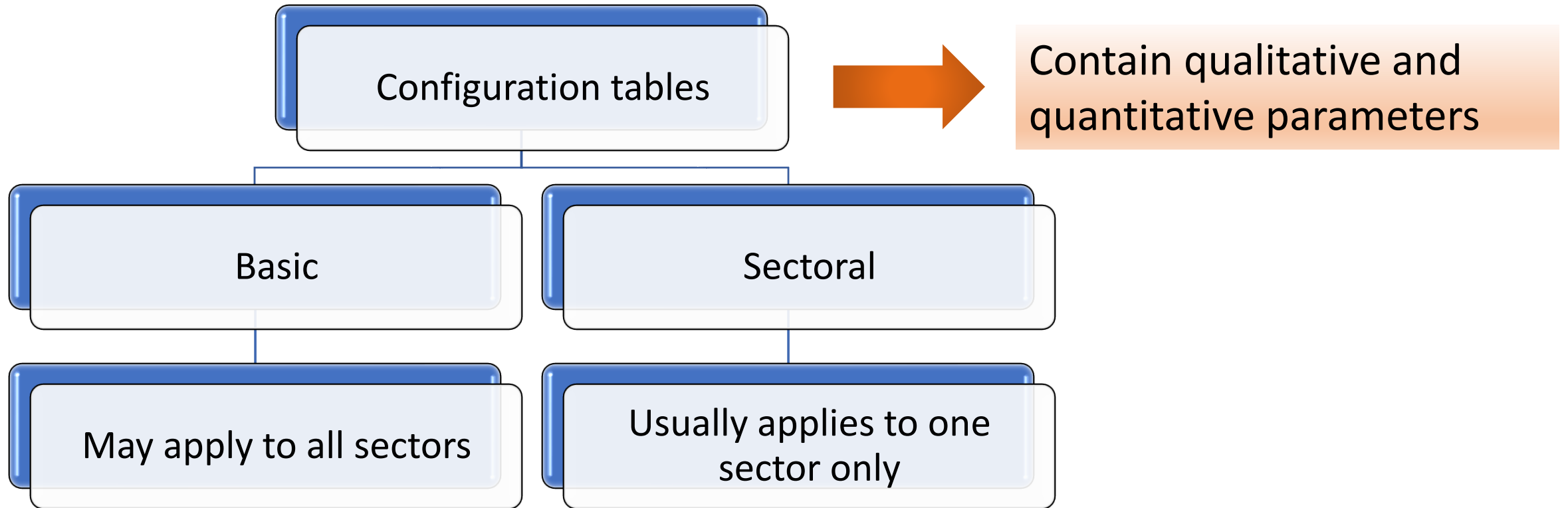
# SAGE: Basic architecture



# Configuration tables (layer)

- A set of tables with information and data that are not likely to change from year to year and reflect the national circumstances of the country-user, for example:
  - Units of measurement
  - Categories
  - Specific technologies
  - List of parameters describing activity data (e.g., fuels, livestock)
  - Specific defaults (but not emission factors) strongly related to the activity data (e.g., MCF)
- Configuration tables can contain both qualitative and quantitative values
- Configuration tables could be general, sector-specific, and category-specific
- Ideally, they should be set up BEFORE starting AD entries and reconsidered/updated every 3 – 5 years (or as needed)
- Configuration tables should be filled in by senior GHG technical experts (tech-expert users)

# Setting configuration tables



# Configuration – Basic: how to get there



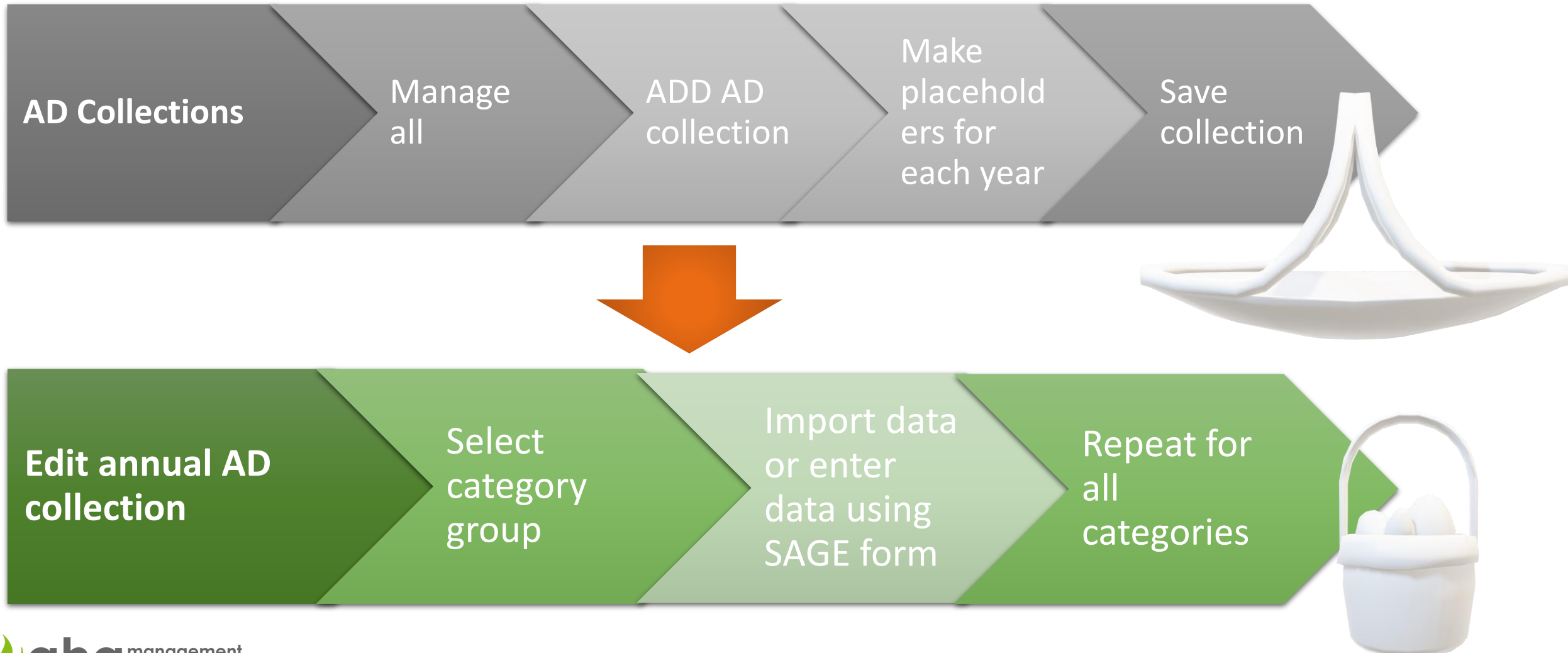
The screenshot shows the Sage GHG Emissions software interface. At the top, the navigation bar includes the Sage logo, 'Sectoral Activity data for GHG Emissions', a 'Energy' button, and several menu items: 'Switch to', 'Configuration', 'AD Collections', 'Analytic', and 'Data Gaps'. An orange arrow points to the 'Configuration' menu item. A dropdown menu is open, showing 'Configuration - Basic' (highlighted with a red box) and 'Configuration - Energy sector'. Below the navigation bar, the 'Sectors' list on the left has '1. Energy' selected. The 'Open' menu on the right lists several options: 'Administration', 'Configuration - Basic' (highlighted with a grey background and an orange arrow pointing to it), 'Configuration - Energy sector', 'AD Collections', 'Analytic', and 'Data Gaps'. A tooltip 'Edit application configuration' is visible next to the 'Configuration - Basic' item.

# Configuration – Sector-specific: how to get there

The screenshot shows the SAGE web application interface. At the top left is the 'sage' logo with the text 'Sectoral Activity data for GHG Emissions' and a 'Energy' button. The top right navigation bar includes a home icon, a 'Switch to' dropdown, a 'Configuration' dropdown, and an 'AD Collections' icon. Below the navigation bar, the main content area is divided into two sections: 'Sectors' and 'Open'. The 'Sectors' section contains four green buttons: '1. Energy' (selected with a blue circle), '2. IPPU', '3. Agriculture', and '4. Waste'. The 'Open' section contains a list of menu items: 'Administration', 'Configuration - Basic', 'Configuration - Energy sector' (highlighted in grey), 'AD Collections', 'Analytic', and 'Data Gaps'. A red box highlights the 'Configuration - Energy sector' item in the top right dropdown menu. An orange arrow points from the top of the page down to the 'Configuration' dropdown. Another orange arrow points from the right towards the 'Configuration - Energy sector' menu item. A tooltip 'Work on application configuration' is visible near the 'AD Collections' menu item.

The method of adding and editing records is EXACTLY the same as for the basic configuration tables (and for the entire SAGE)

# AD collections: Sequence of actions



# Where to find it:

## Welcome to SAGE

### Sectors

1. Energy

2. IPPU

3. Agriculture

4. Waste

### Open

Administration

Configuration - Basic

Configuration - Waste sector

AD Collections

Analytic

Data Gaps

### Re






Sw

Work with Activity Data collections






# AD collections: create collection, then fill it in

 AD Collections

- +  Dashboard
- + Explore
- + Compare
- +  Enter AD (36)
- + **Manage all**
- + Draft (36)
- + Review (0)
- + Approve (0)
- + Publish (0)



 AD Collections

- +  Dashboard
- + Explore
- + Compare
- +  **Enter AD (36)**
- + Manage all
- + Draft (36)
- + Review (0)
- + Approve (0)
- + Publish (0)

SAGE: AD – Waste



# Waste → AD Collections: Create AD collection



The screenshot shows the SAGE web application interface. At the top left is the 'sage' logo with the text 'Sectoral Activity data for GHG Emissions'. A 'Waste' button is highlighted. The top right navigation bar includes a home icon, 'Switch to', 'Configuration', and 'AD Collections'. The main content area is titled 'Welcome to SAGE' and features two columns of menu items: 'Sectors' and 'Open'. The 'Sectors' column lists '1. Energy', '2. IPPU', '3. Agriculture', and '4. Waste' (selected). The 'Open' column lists 'Administration', 'Configuration - Basic', 'Configuration - Waste sector', 'AD Collections' (highlighted with a tooltip 'Work with Activity Data collections'), 'Analytic', and 'Data Gaps'. A right-hand sidebar menu contains 'Dashboard', 'Explore', 'Compare', 'Enter AD (36)', 'Manage all', 'Draft (36)', 'Review (0)', 'Approve (0)', and 'Publish (0)'.

# Waste – adding AD collection

sage Sectoral Activity data for GHG Emissions

**Waste** | Home | Switch to | Configuration | AD Collections | Analytic | Data Gaps | Olia | Logout | Reset

AD Collections

Manage all - List

List | **Add** | Delete | History | Info

show 50 records, starting from # 1 (total 6) Search Clear >< Disable selected Enable selected

<input type="checkbox"/>	id ↓	Time-series AD collection	year	description	drafts	ready	begin date	closing date	state	status	
<input type="checkbox"/>		Waste-test					+	+		Any ▾	
<input type="checkbox"/>	6	WASTE-TEST_2000-2005	2005	xx	0	0	2022-10-14	2023-12-31	draft	enabled	✗
<input type="checkbox"/>	5	WASTE-TEST_2000-2005	2004	xx	14	0	2022-10-14	2023-12-31	draft	enabled	
<input type="checkbox"/>	4	WASTE-TEST_2000-2005	2003	xx	0	0	2022-10-14	2023-12-31	draft	enabled	✗
<input type="checkbox"/>	3	WASTE-TEST_2000-2005	2002	xx	0	0	2022-10-14	2023-12-31	draft	enabled	✗
<input type="checkbox"/>	2	WASTE-TEST_2000-2005	2001	xx	12	0	2022-10-14	2023-12-31	draft	enabled	
<input type="checkbox"/>	1	WASTE-TEST_2000-2005	2000	xx	5	0	2022-10-14	2023-12-31	draft	enabled	

AD Collections

- + Dashboard
- + Explore
- + Compare
- + Enter AD (36)
- + **Manage all**
- + Draft (36)
- + Review (0)
- + Approve (0)
- + Publish (0)

Manage all - Add

List Add Delete History Info

Time-series AD collection code:

Add multiple:

Year:

Copy AD records:

AD collection approach:

Sectoral

Name:

Description:

Open for editing from:

dd-----yyyy

To:

dd-----yyyy

Status:

enabled

State: draft

Add

Cancel

AD Collections

- + Dashboard
- + Explore
- + Compare
- + Enter AD (36)
- + **Manage all**
- + Draft (36)
- + Review (0)
- + Approve (0)
- + Publish (0)

Manage all - Add

List Add Delete History Info

Time-series AD collection code:

My\_Waste\_1990-2024

Add multiple:

Years range:

1990-2024

Copy AD records:

AD collection approach:

Sectoral

Name:

My\_Waste\_1990-2024

Description:

Test version for the Waste sector (web ref)

Open for editing from:

10-Sep-2025

To:

10-Sep-2026

Status:

enabled

State: draft

Add Cancel



# Enter annual AD

Edit annual AD collection

Select category group

Import data or enter data using SAGE form

Repeat for all categories

sage Sectoral Activity data for GHG Emissions **Waste** ▶ 🏠 Switch to 🔧 Configuration 📁 AD Collections 📊 Analytic 👁 Data Gaps ⚙ Olia 🚪 Logout 🔄 Reset

**AD Collections** Enter AD (39) - Edit existing

**Edit existing** **Add missing** **Info** 4.A 4.B 4.C 4.D 4.E

> >> show  records, starting from #  (total 39)

4.C.1 T1,2,3  
4.C.2 T1,2,3

	id	ipcc ↑	ext	tier	Time-series AD collection	state	year	aggreg.	value	val. units	val.type	submitted
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/> + <input type="text"/>
	627	4.A.1		1	Waste_2020-2022	draft	2021	National	6.76	Gg	NA	2025-09-10 14:23:22
	5	4.A.1		1	WASTE-TEST_2000-2005	draft	2001	National	62.66	Gg	NA	2023-02-23 00:00:00
	550	4.A.1		1	WASTE-TEST_2000-2005	draft	2004	National	4.41	Gg	NA	2023-04-11 00:00:00
	609	4.A.1		1	Waste_2020-2022	draft	2020	National	0.00	Gg	NA	2025-09-10 13:41:08
	621	4.A.1		1	Waste_2020-2022	draft	2021	National	0.00	Gg	NA	2025-09-10 14:23:22
	12	4.A.1		1	WASTE-TEST_2000-2005	draft	2001	National	9.95	Gg	NA	2023-02-23 00:00:00
	616	4.A.1		1	Waste_2020-2022	draft	2020	National	6.72	Gg	NA	2025-09-10 13:41:09
	557	4.A.1		1	WASTE-TEST_2000-2005	draft	2004	National	3.15	Gg	NA	2023-04-11 00:00:00
	6	4.A.1		1	WASTE-TEST_2000-2005	draft	2001	National	0.00	Gg	NA	2023-02-23 00:00:00
	551	4.A.1		1	WASTE-TEST_2000-2005	draft	2004	National	4.79	Gg	NA	2023-04-11 00:00:00
	610	4.A.1		1	Waste_2020-2022	draft	2020	National	0.00	Gg	NA	2025-09-10 13:41:08
	622	4.A.1		1	Waste_2020-2022	draft	2021	National	0.00	Gg	NA	2025-09-10 14:23:22

AD Collections

- Dashboard
- Explore
- Compare
- Enter AD (39)
- Manage all
- Draft (39)
- Review (0)
- Approve (0)
- Publish (0)

4.C.1 T1,2,3 - List

List Add Export Import Changes Info

4.A 4.B 4.C 4.D 4.E

show 30 records, starting from # 1 (total 25) Search Clear Delete selected

		id	Time-series ADC	year	ipcc ↑	ext	tier	aggreg.	waste type	site	incineration	weight	practice	waste amount	value type	uncert.	waste, Gg	submitted	state	
<input type="checkbox"/>		4	WASTE-...	2000	4.C.1	bio	1	National	Food wa...		Batch typ...	Wet	collected	1,000.00...	survey	30.00 %	1,000.00	2025-09-10 ...	draft	✗
<input type="checkbox"/>		16	WASTE-...	2000	4.C.1	bio	1	National	Food wa...		Batch typ...	Wet		100.00 t	NA	30.00 %	0.10	2023-03-14 ...	draft	✗
<input type="checkbox"/>		17	WASTE-...	2013	4.C.1	bio	1	National	Total (Bu...		Batch typ...	Wet	Incinerat...	275.00 Gg	survey	5.00 %	275.00	2023-03-30 ...	draft	✗
<input type="checkbox"/>		18	WASTE-...	2015	4.C.1	bio	2	National	Total (Bu...		Batch typ...	Wet	Incinerat...	249.50 Gg	survey	5.00 %	249.50	2023-03-30 ...	draft	✗
<input type="checkbox"/>		434	WASTE-...	2010	4.C.1	bio	2	National	Total (Bu...		Batch typ...	Wet	Incinerat...	344.50 Gg	survey	5.00 %	344.50	2023-03-30 ...	draft	✗
<input type="checkbox"/>		435	WASTE-...	2011	4.C.1	bio	2	National	Total (Bu...		Batch typ...	Wet	Incinerat...	325.50 Gg	survey	5.00 %	325.50	2023-03-30 ...	draft	✗
<input type="checkbox"/>		436	WASTE-...	2012	4.C.1	bio	2	National	Total (Bu...		Batch typ...	Wet	Incinerat...	321.00 Gg	survey	5.00 %	321.00	2023-03-30 ...	draft	✗
<input type="checkbox"/>		437	WASTE-...	2014	4.C.1	bio	2	National	Total (Bu...		Batch typ...	Wet	Incinerat...	321.00 Gg	survey	5.00 %	321.00	2023-03-30 ...	draft	✗
<input type="checkbox"/>		438	WASTE-...	2014	4.C.1	bio	3	National	Waste Oil	Facility I...	Batch typ...	Wet	Incinerat...	25.00 Gg	survey	5.00 %	25.00	2023-03-30 ...	draft	✗
<input type="checkbox"/>		439	WASTE-...	2015	4.C.1	bio	3	National	Waste Oil	Facility I...	Batch typ...	Wet	Incinerat...	22.00 Gg	survey	5.00 %	22.00	2023-03-30 ...	draft	✗
<input type="checkbox"/>		440	WASTE-...	2013	4.C.1	bio	3	National	Waste Oil	Facility I...	Batch typ...	Wet	Incinerat...	28.00 Gg	survey	5.00 %	28.00	2023-03-30 ...	draft	✗
<input type="checkbox"/>		441	WASTE-...	2012	4.C.1	bio	3	National	Waste Oil	Facility I...	Batch typ...	Wet	Incinerat...	16.00 Gg	survey	5.00 %	16.00	2023-03-30 ...	draft	✗
<input type="checkbox"/>		442	WASTE-...	2011	4.C.1	bio	3	National	Waste Oil	Facility I...	Batch typ...	Wet	Incinerat...	18.00 Gg	survey	5.00 %	18.00	2023-03-30 ...	draft	✗

# SAGE- live example: creating the Waste sector AD collection

## IMPORTANT!

*Check if the configuration tables for the Waste sector have been set up by your senior technical expert for both*

**GENERAL and SECTOR-SPECIFIC tables**

The plan for data entry for 4.C.1 category waste incineration/clinical):

- ✓ Checking category-specific 4.C parameters:
  - ✓ CO<sub>2</sub>:
    - ✓ Carbon in in dry content fraction
    - ✓ Dry matter content fraction
    - ✓ Fossil carbon fraction
    - ✓ Oxidation factor
- ✓ Agree on assumption (wet or dry waste weight)
- ✓ Create collection (if waste sector collection is not created yet)
- ✓ Enter the AD

SAGE: AD – Agriculture



# Configuration setting – a reminder

## Configuration

Dashboard

Categories

Livestock

Land use

Region

Climate zones

3.A parameters

Feeding class

MMS types

MCF for MMS

Parameter types

Calculation parameters

Changes

Info

Configuration - Basic

Configuration - Agriculture sector

No additional info provided for these pages.

Cross-category tables

Category - specific tables

The need in parameters depends on:

- Methodological tier (T1, T2 simplified, T2 detailed)
- Animal type
- Gas
- Category

# Example of Parameter types list in SAGE (3.A category)

sage Sectoral Activity data for GHG Emissions

Agriculture

Switch to Configuration AD Collections Analytic Data Gaps Olia

Configuration - Basic

Configuration - Agriculture sector

Configuration

Dashboard

Categories

Livestock

Land use

Region

Climate zones

**3.A parameters**

Feeding class

MMS types

MCF for MMS

**Parameter types**

Calculation parameters


Parameter types - List


List Export Info

> >> show 30 records, starting from # 1 (total 37) Search Clear <<

Disable selected Enable selected

<input type="checkbox"/>	id	code	name 1	variable name	units
<input type="checkbox"/>	5	activ-coef	Activity coefficient (MJ/day/kg)	Ca	number
<input type="checkbox"/>	103	n-excretion-year	Annual N excretion rate	Nex	kg
<input type="checkbox"/>	22	wool-prod	Average annual wool production per head		kg
<input type="checkbox"/>	12	birth-females	Birth females %		%
<input type="checkbox"/>	107	n-consumed-animal	Daily N consumed per animal	Nintake_spec	kg
<input type="checkbox"/>	102	n-excretion-day	Daily N excretion rate per animal weight (as kg N/1000kg animal	Nrate	kg
<input type="checkbox"/>	104	n-retained	Daily N retained per animal	Nretention	kg
<input type="checkbox"/>	3	digest-energy	Digestible energy	DE	%
<input type="checkbox"/>	25	dry-matter-int	Dry matter intake	DMI	kg
<input type="checkbox"/>	28	dry-matter-int-tam	Dry matter intake percent of TAM	DMI_TAM	%

 Configuration

- +  **Dashboard**
- + Categories
- + Livestock
- + Land use
- + Region
- + Climate zones
- **3.A parameters**
  - + Feeding class
  - + MMS types
  - + MCF for MMS
  - + Parameter types
  - + **Calculation parameters**
    - + 3.C.1 parameters
    - + 3.C.2 parameters
    - + 3.C.4 parameters
    - + 3.C.5 parameters
    - + 3.C.6 parameters
    - + 3.C.12 Aquaculture

**Calculation parameters - Add**

List Add Export Import Changes Info Record #133 Record #21

Year (leave empty for any):

Any

Aggregation:

Any

Climate zone:

Any

Feeding class and diet:

Any

Feeding situation:

Any

Show parameter types only for:

IPCC animal type: Select

Tier: Select

Name: Type part of the type or variable name

Livestock type:

Select

Parameter:

Select

Parameter value : (empty)

Parameter value uncertainty : (empty)

Add Cancel

# Example of required configuration parameters for 3.A (tier 1)

For Tier 1			
Configuration table type	Parameter needed	Livestock Category	
		3.A.1 (Enteric fermentation)	3.A.2 (Manure Management)
Configuration - basic	Aggregation	needed	needed
Agriculture sector – cross-sectoral	Climate zone	needed	needed
	Livestock (type, optional – subdivision)	needed	needed
Agriculture category-specific	Typical animal mass (TAM)	needed	needed
	Number of days alive (DA)	needed	needed
	Manure Management system (MMS)	NOT needed	needed
	Daily N excretion rate per animal weight	NOT needed	needed

# Order of entries - summary

Technical experts or a System Admin/ National Compiler

Sectoral data entry expert

**Step 1**

**Step 2**

**Step 3**

**Step 4**

Configuration - Basic tables

Aggregations

Institutions

General Agriculture configuration tables

Regions

Climate zones

Livestock

Land use

Category-specific configuration tables

3.A

3.C.1

3.C.2

3.C.3

3.C.4

3.C.5

3.C.6

3.C.7

3.C.12

Data entry forms (if using manual entries)

3.A

3.C.1

3.C.2

3.C.3

3.C.4

3.C.5

3.C.6

3.C.7

3.C.12

Basic configuration data

Configuration - Agriculture sector

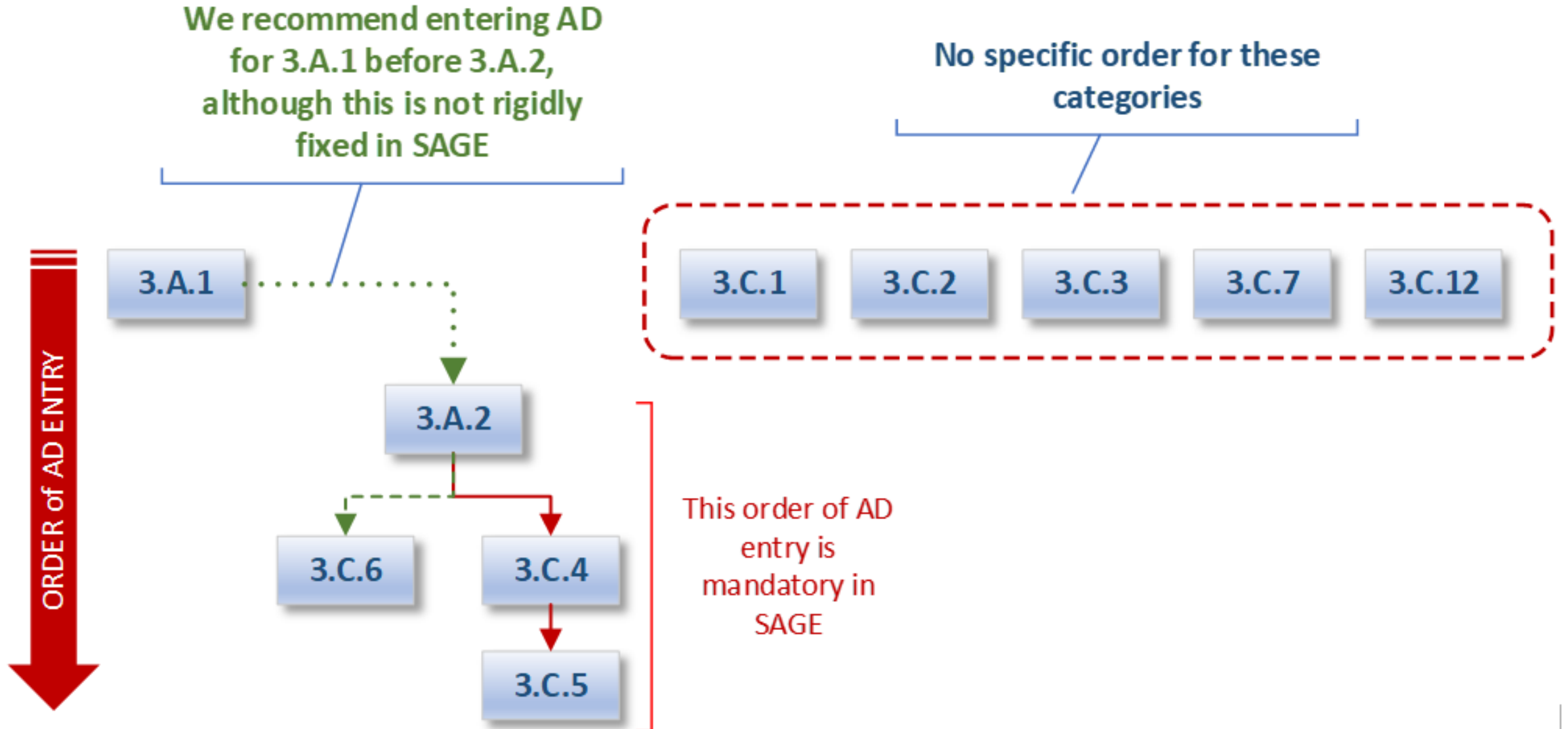
AD Collections → Annual AD

# Agriculture → AD Collections: Create AD collection



The screenshot shows the SAGE web application interface. At the top left is the 'sage' logo with the text 'Sectoral Activity data for GHG Emissions' and a 'Agriculture' button. The top right navigation bar includes a home icon, a 'Switch to' dropdown, a 'Configuration' dropdown, and an 'AD Collections' dropdown menu. The main content area is titled 'Welcome to SAGE' and is divided into two columns: 'Sectors' and 'Open'. The 'Sectors' column contains four buttons: '1. Energy', '2. IPPU', '3. Agriculture' (which is selected with a blue circle), and '4. Waste'. The 'Open' column contains a list of menu items: 'Administration', 'Configuration - Basic', 'Configuration - Agriculture sector', 'AD Collections' (highlighted in grey with a tooltip that says 'Work with Activity Data collections'), 'Analytic', and 'Data Gaps'. On the right side, there is a vertical sidebar menu with the following items: 'Dashboard', 'Explore', 'Compare', 'Validate', 'Enter AD (12)', 'Manage all', 'Draft (12)', 'Review (1)', and 'Approve (1)'.

# Recommended order of category entries in SAGE



# Agriculture – adding AD collection (Manage all!)

**AD Collections**

- + Dashboard
- + Explore
- + Compare
- + Validate
- + Enter AD (12)
- + **Manage all**
- + Draft (12)
- + Review (1)
- + Approve (1)
- + Publish (0)

## Manage all - List

List Add Delete History Info

show 50 records, starting from # 1 (total 14) Search Clear ><

Disable selected Enable selected

<input type="checkbox"/>	id ↓	Time-series AD collection	year	description	drafts	ready	begin date	closing date	state	status
<input type="checkbox"/>										Any
<input type="checkbox"/>	14	AG_2020-2021	2021	xx	0	1	2024-04-22	2024-12-22	draft	enabled
<input type="checkbox"/>	13	AG_2020-2021	2020	xx	0	1	2024-04-22	2024-12-22	draft	enabled
<input type="checkbox"/>	12	AD_Test_2020-2021	2021	xx	0	1	2024-04-22	2024-04-23	review	enabled
<input type="checkbox"/>	11	AD_Test_2020-2021	2020	xx	0	1	2024-04-22	2024-04-23	approve	enabled
<input type="checkbox"/>	10	AG_UNFCCC_2020-2025	2025		1	0	2024-04-15	2025-04-15	draft	enabled
<input type="checkbox"/>	9	AG_UNFCCC_2020-2025	2024		2	0	2024-04-15	2025-04-15	draft	enabled
<input type="checkbox"/>	8	AG_UNFCCC_2020-2025	2023		2	0	2024-04-15	2025-04-15	draft	enabled
<input type="checkbox"/>	7	AG_UNFCCC_2020-2025	2022		2	0	2024-04-15	2025-04-15	draft	enabled
<input type="checkbox"/>	6	AG_UNFCCC_2020-2025	2021		2	0	2024-04-15	2025-04-15	draft	enabled
<input type="checkbox"/>	5	AG_UNFCCC_2020-2025	2020		2	0	2024-04-15	2025-04-15	draft	enabled

AD Collections

- + Dashboard
- + Explore
- + Compare
- + Validate
- + Enter AD (12)
- + **Manage all**
- + Draft (12)
- + Review (1)
- + Approve (1)
- + Publish (0)

Manage all - Add

List Add Delete History Info

Time-series AD collection code:

Add multiple:

Year:

Copy AD records:

AD collection approach:

Sectoral

Name:

Description:

Open for editing from:

dd----yyyy

To:

dd----yyyy

Status:

enabled

State: draft

Add

Cancel

AD Collections

Manage all - Add

- List
- Add
- Delete
- History
- Info

Time-series AD collection code:

Ag\_2020-2022

Add multiple:

Years range:

2020-2022

Copy AD records:

AD collection approach:

Sectoral

Name:

Ag\_2020-2022

Description:

xxx

Open for editing from:

10-Sep-2025

To:

10-Sep-2026

Status:

enabled

State: draft

Add Cancel



# Enter annual AD

Edit annual AD collection

Select category group

Import data or enter data using SAGE form

Repeat for all categories

**sage** Sectoral Activity data for GHG Emissions

**Agriculture** | Switch to | Configuration | AD Collections | Analytic | Data Gaps | Olia | Logout | Reset

### Enter AD (12) - Edit existing

show  records, starting from

3.A ▾ 3.C ▾  
 3.A.1  
 3.A.2

Enteric fermentation

	id	ipcc ↑	ext	tier	Time-series AD collection	state	year	agg.	value	val. units	val.type	submitted
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/> + <input type="text"/>
	94	3.A.1.a.i		2	AG_2020-2021	ready	2020	National	1000000.00	number	NA	2024-04-23 10:05:15
	74	3.A.1.a.i		2	AG_UNFCCC_2020-2025	draft	2021	National	1038970.00	number	NA	2024-04-15 03:19:04
	77	3.A.1.a.i		2	AG_UNFCCC_2020-2025	draft	2024	National	1132522.00	number	NA	2024-04-15 03:19:52
	9	3.A.1.a.i		1	AG_TEST_2020-2023	ready	2020	Bottom region	5000000.00	number	NA	2024-04-23 10:04:01
	76	3.A.1.a.i		2	AG_UNFCCC_2020-2025	draft	2023	National	1102500.00	number	NA	2024-04-15 03:19:41
	95	3.A.1.a.i		2	AG_2020-2021	ready	2021	National	1038970.00	number	NA	2024-04-23 10:04:59
	73	3.A.1.a.i		2	AG_UNFCCC_2020-2025	draft	2020	National	1000000.00	number	NA	2024-04-19 22:43:33
	10	3.A.1.a.i		2	AG_TEST_2020-2023	draft	2020	Middle region	1000000.00	number	NA	2023-11-14 00:00:00
	75	3.A.1.a.i		2	AG_UNFCCC_2020-2025	draft	2022	National	1072571.00	number	NA	2024-04-15 03:19:14
	56	3.A.1.a.i		1	AG TEST 2020-2023	draft	2023	National	1000000.00	number	NA	2024-03-30 02:14:05

- AD Collections
- Dashboard
- Explore
- Compare
- Validate
- Enter AD (12)**
- Manage all
- Draft (12)
- Review (1)
- Approve (1)
- Publish (0)

3.A.1 - Add

- List
- Add
- Export
- Import
- Changes
- Info
- Record #94

3.A 3.C

ID:

Annual AD collection:  
Select

Category:  
Select

Aggregation:  
National

Statistics quality:  
Unknown

Tier:  
T1

Data collection period (months):  
12

Climate zone:  
Select

Feeding class and diet:  
Any

Feeding situation:  
Any

State:  
draft

Provide correct values for the above fields to continue editing (press Update if needed) ...

- Add
- Update
- Cancel

# SAGE- live example: recording the Agriculture sector AD

## IMPORTANT!

*Check if the configuration tables for the Ag sector have been set up by your senior technical expert for cross-category and category-specific tables*

The plan for data entry for 3.A.2 category manure management/other cattle/mature T2 (MM)/T2 simplified (EF):

- ✓ Checking cross-category tables, at least:
  - ✓ Livestock
  - ✓ Climate zones
- ✓ Checking category-specific 3.A parameters (all):
  - ✓ Calculated parameters:

TAM

Digestible energy

Feed energy density

Volatile solid excretion per day (kg/day/animal)

Urinary Energy Fraction

Feed ash content

Annual N excretion rate

Milk production

Milk fat

Percent of protein in milk

Daily N consumed per animal

Percent crude protein in diet

- ✓ Create collection (if the Agriculture sector collection is not created yet)
- ✓ Enter the AD #X for 3.A.1 (T2 simplified)
- ✓ Edit the record starting with 10000000X in 3.A.2 (it grabs the data from 3.A.1)

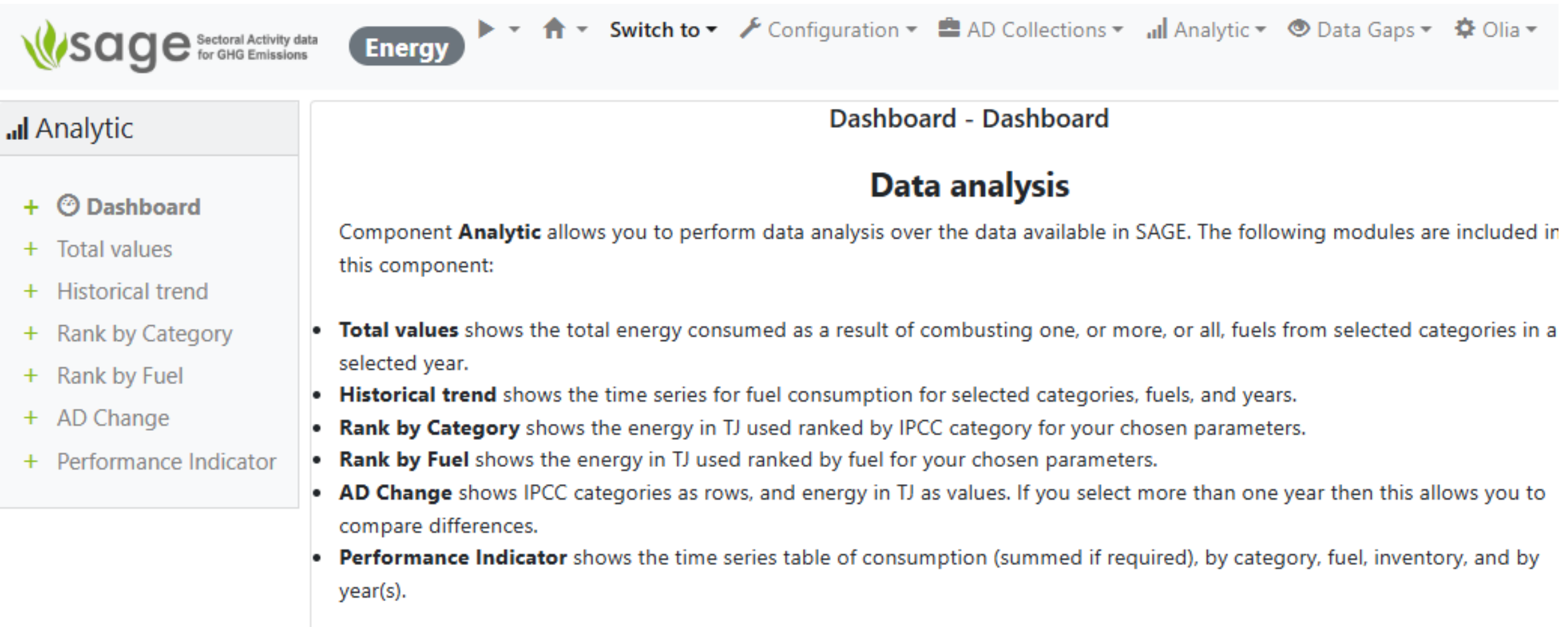
# SAGE: Data analysis



# Analytic: how to get there

The screenshot displays the SAGE web application interface. At the top, the logo for 'sage Sectoral Activity data for GHG Emissions' is visible, along with a navigation bar containing 'Energy', 'Switch to', 'Configuration', 'AD Collections', 'Analytic', and 'Data Gaps'. The main content area is titled 'Welcome to SAGE' and features a vertical menu of options: Administration, Configuration - Basic, Configuration - Energy sector, AD Collections, Analytic, and Data Gaps. The 'Analytic' option is highlighted in grey, and an orange arrow points to it from the right. A tooltip below the 'Analytic' option reads 'Explore and analyse data collections'. To the left of the main menu, there is a 'Sectors' section with four options: 1. Energy (selected), 2. IPPU, 3. Agriculture, and 4. Waste. On the right side, a dropdown menu is open, listing various analytical features: Dashboard, Total values, Historical trend, Rank by Category, Rank by Fuel, AD Change, and Performance Indicator.

# Select what you want to analyse



The screenshot displays the SAGE (Sectoral Activity data for GHG Emissions) dashboard. The top navigation bar includes the SAGE logo, a home icon, a 'Switch to' dropdown, a 'Configuration' dropdown, 'AD Collections', 'Analytic', 'Data Gaps', and 'Olia'. The left sidebar shows the 'Analytic' component expanded, listing sub-modules: Dashboard, Total values, Historical trend, Rank by Category, Rank by Fuel, AD Change, and Performance Indicator. The main content area is titled 'Dashboard - Dashboard' and 'Data analysis'. It explains that the 'Analytic' component allows for data analysis over available data in SAGE and lists the following modules:

- **Total values** shows the total energy consumed as a result of combusting one, or more, or all, fuels from selected categories in a selected year.
- **Historical trend** shows the time series for fuel consumption for selected categories, fuels, and years.
- **Rank by Category** shows the energy in TJ used ranked by IPCC category for your chosen parameters.
- **Rank by Fuel** shows the energy in TJ used ranked by fuel for your chosen parameters.
- **AD Change** shows IPCC categories as rows, and energy in TJ as values. If you select more than one year then this allows you to compare differences.
- **Performance Indicator** shows the time series table of consumption (summed if required), by category, fuel, inventory, and by year(s).

Enter the category, collection, years (if applicable) → **Calculate**

- 📊 Analytic
- + 🏠 Dashboard
- + Total values
- + **Historical trend**
- + Rank by Category
- + Rank by Fuel
- + AD Change
- + Performance Indicator

### Historical trend - 1.B.1.a Coal

- 1.A
- 1.B.1.a Coal**
- 1.B.2.a Oil
- 1.B.2.b Gas
- Info

Data categories: (all) ▼

Time-series AD collection:

Years (leave empty for all):

Trend:  
no data found for current category selection

**Calculate** **Clear**



# Data analysis – Historical trend - results

## Analytic

- Dashboard
- Total values
- Historical trend**
- Rank by Category
- Rank by Fuel
- AD Change
- Performance Indicator

## Historical trend - 1.B.1.a Coal

1.A 1.B.1.a Coal 1.B.2.a Oil 1.B.2.b Gas Info

Data categories: (all)

Time-series AD collection:

GAPS\_TEST\_2000-2010

Years (leave empty for all):

2000-2005

Trend:

Analytic

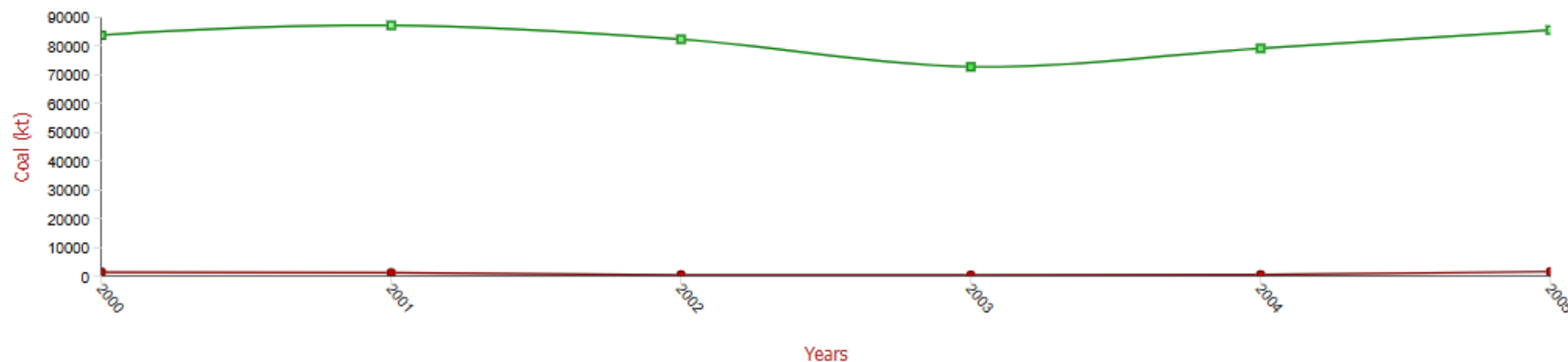
Historical trend

Select category group

Fill the form

Calculate

ipcc/year	2000	2001	2002	2003	2004	2005
1.B.1.a.i	1,454.75	1,289.77	517.40	454.06	589.38	1,637.43
1.B.1.a.ii	83,663.70	87,063.10	82,248.80	72,681.60	79,086.60	85,424.20



1.B.1.a.i  1.B.1.a.ii

Calculate

Clear

# SAGE- live example: Analytic

# SAGE: Data gaps



# Data gaps: how to get there

The screenshot shows the SAGE web application interface. At the top left is the 'sage' logo with the text 'Sectoral Activity data for GHG Emissions' and a 'Energy' button. The top right contains navigation icons and dropdown menus for 'Switch to', 'Configuration', 'AD Collections', 'Analytic', 'Data Gaps', and 'Oli'. The main content area is titled 'Welcome to SAGE' and is divided into two columns: 'Sectors' and 'Open'. The 'Sectors' column lists '1. Energy', '2. IPPU', '3. Agriculture', and '4. Waste'. The 'Open' column lists 'Administration', 'Configuration - Basic', 'Configuration - Energy sector', 'AD Collections', 'Analytic', and 'Data Gaps'. The 'Data Gaps' item is highlighted in grey. A tooltip box points to 'Data Gaps' with the text 'Model missing activity data with provided gap filling techniques'. On the right side, a dropdown menu is open, listing options: 'Dashboard', 'Find', 'Aggregate', 'Inter./Extrapolate', 'Surrogate', 'Average value', and 'First value'.

# Find the gaps first!

**sage** Sectoral Activity data for GHG Emissions

**Energy** ▶ ▾ 🏠 ▾ Switch to ▾ 🔧 Configuration ▾ 📁 AD Collections ▾ 📊 Analytic ▾ 👁 Data Gaps

👁 Data Gaps

- + 🗄 Dashboard
- + 🔍 Find ←
- + Aggregate
- + Inter./Extrapolate
- + Surrogate
- + Average value
- + First value

### Dashboard - Info

**Info** Modeling log

No additional info provided for these pages.

S.A.G.E - version: 1.2.88. DB (is2000\_unfccc\_dct) req.version: 2.66. Suit: sage. Env: main. Mode: production

Enter the category, collection, years (if applicable) → **Search**

👁 Data Gaps

+ 🏠 Dashboard

+ 🔍 Find

+ Aggregate

+ Inter./Extrapolate

+ Surrogate

+ Average value

+ First value

### Find - Data Gaps 1.A

**Data Gaps 1.A**

Data Gaps 1.B.1.a Coal

Data Gaps 1.B.2.a Oil

Data Gaps 1.B.2.b Gas

Info

Data categories: (all) ▼

Fuels: (all) ▼

*Time-series AD collection:*

Select ▼

*Year(s):*

2010-2020

*Data series with gaps (select one to proceed):*

No gaps found for given conditions

Search

Clear

# Gaps found! The “Eye” time now



- [Data Gaps](#)
- + [Dashboard](#)
- + [Find](#)
- + [Aggregate](#)
- + [Inter./Extrapolate](#)
- + [Surrogate](#)
- + [Average value](#)
- + [First value](#)

## Find - Data Gaps 1.A

- Data Gaps 1.A**
- Data Gaps 1.B.1.a Coal
- Data Gaps 1.B.2.a Oil
- Data Gaps 1.B.2.b Gas
- Info

Data categories: (selected - 1.A.1, 1.A.1.a, 1.A.1.a.i, 1.A.1.a.ii, 1.A.1.a.iii, 1.A.1.b, 1.A.1.c, 1.A.1.c.i, 1.A.1.c.ii) ▾

Fuels: (all) ▾

Time-series AD collection:

Year(s):

Data series with gaps (select one to proceed):

	id	ipcc/fuel	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
	<b>187/288</b>	1.A.1.a/Natural Gas (TJ)	74,695.20	70,960.80	67,412.64	64,042.08	60,840.00	57,797.76	58,695.83	53,363.92	50,474.75	47,585.58	*
	<b>187/273</b>	1.A.1.a/Anthracite (TJ)	5,340.00	5,607.00	5,887.35	6,181.72	6,490.80	6,815.34	*	540.57	*	*	*
	<b>98/258</b>	1.A.1.b/Gas/Diesel Oil (TJ)	10,633.90	10,952.92	11,281.52	11,619.93	11,968.53	12,327.58	12,649.43	*	*	*	*

# SAGE- live example: Data gaps

# SAGE: Deployment options



# TEMPORARY Free access – testing web page

**FREE of CHARGE but you have the access for a limited time and must submit the testing results to GHGMI**

Your team sends a message to the UNFCCC secretariat or to GHGMI directly ([info@ghginstitute.org](mailto:info@ghginstitute.org))

GHGMI prepares a testing webpage, access credentials, the user manual, and testing materials

The process takes approximately 10 working days

# Free installation package as is

Your team sends a message to the UNFCCC secretariat or to GHGMI directly ([info@ghginstitute.org](mailto:info@ghginstitute.org))

GHGMI sent back the IP/disclaimer form for you to fill in and sign

Form is signed and returned to GHGMI

GHGMI sends you the installation package that includes all necessary files, installation instructions, and the User manual

The process takes approximately 10 working days

# How to learn more about it and acquire it?

<https://ghginstitute.org/sage/>

<https://unfccc.int/process-and-meetings/transparency-and-reporting/support-for-developing-countries/ghg-support#eq-4>

# Thank you!

