Regional Training Seminar part 3 on National Systems for GHG inventories (and projections)

Merged Sub-task 3.2.2.B and 3.2.3A and 3.2.3B related to regional technical training seminars on GHG inventory **national systems in the framework of the MMR/Minimum legal and institutional requirements**

Financed by the TAIEX Instrument

in the Framework of the implementation of the

Environment and Climate Regional Accession Network

Enviroment and Climate Regional Accession Network ECRAN

Venue :

Hotel Aurel,

Bulevar Josipa Broza Tita bb, Stari Aerodrom

Podgorica, Montenegro

28-29 June 2016

Beneficiaries :

Albania, Bosnia and Herzegovina, Croatia, the former Yugoslav Republic of Macedonia, Kosovo*, Montenegro, Serbia and Turkey

Justin Goodwin

Day 1: Tuesday 28 June 2016

Enviroment and Climate Regional Accession Network ECRAN

Topic: National Systems for GHG estimation

Chair and Co-Chair: Imre Csikós, Justin Goodwin

Start	Finish	Topic	Speaker
08:30	**09:00**	***Registration***	
09:00	09:15	Welcome and Introduction to WG2 NS workshop.	Imre Csikós, Moderator
09:15	10.15	- Introductions (Round table) - Overview of Homework progress	Justin Goodwin, ECRAN
10:15	10.45	2016 MMR reporting, Estonia experience	Merilyn Möls, Estonia
10.45	11.15	2015 MMR National System development Croatian experience	- Tatjana Obucina, Vlatka Palcic, Tatjana Antolic, Croatia
11:15	**11:30**	***Coffee Break***	
11.30	12.00	2016 MMR reporting, Austrian experience	Elisabeth Rigler, UBA
12:00	13:15	Presentation beneficiary 3 countries: (20 min each) plus 15 minutes discussion/questions = 75 min)	- Montenegro - Kosovo* - Serbia
13:15	**14:40**	***Lunch Break & Administration***	
14:40	15:30	Presentation beneficiary 2 countries: (20 min each) plus 10 minutes discussion/questions = 50 min)	- The former Yugoslav Republic of Macedonia - Turkey
15:30	**15:45**	***Coffee Break***	
15:45	16:35	Presentation beneficiary 2 countries: (20 min each) plus 10 minutes discussion/questions = 50 min)	- Bosnia and Herzegovina - Albania
16:35	17:00	Panel discussion on donor involvement in follow up: Facilitated by Imre Csikós	• Elisabeth Rigler, UBA • Dubravka Bosnjak, GIZ
17:00	17:30	Wrapping up Day 1	Justin Goodwin

Day 2: Wednesday 29 June 2016

Topic: National Systems for GHG estimation

Chair and Co-Chair: Imre Csikós, Justin Goodwin

Start	Finish	Topic	Speaker
08:30	**09:00**	**Registration**	
09:00	09:30	Summary of Day 1 & priorities for Workshop Discussion	Justin Goodwin
09:30	10:30	Closer look at emerging solutions and successes.	Justin Goodwin with support from: Tinus Pulles, Suvi Monni, Emma Salisbury Elisabeth Rigler, Merylin Mols, Detelina Petrova, Croatian expert team
10.30	***11.00***	***Coffee Break***	
11:00	11:15	Progression Clinics Introductions	Justin Goodwin
11:15	13:00	Progression Clinics: Session 1: Working on activities and plans/country fiches etc.	Lead by: Tinus Pulles, Suvi Monni, Emma Salisbury, Elisabeth Rigler, Merylin Mols, Detelina Petrova, Croatian expert team
13.00	***14.00***	***Lunch Break***	
14:00	15:00	Progression Clinics: Session 2:	As above
15:00	15:30	Reporting back, sharing views/progress	Country representatives
15.30	***15.45***	***Coffee Break***	
15:45	16:30	Introduction to peer review and analysis activities.	Justin Goodwin/Suvi Monni
16:15	17:00	Wrap-up & close	Justin Goodwin/ Imre Csikós

Enviroment and Climate Regional Accession Network ECRAN

But first.. Brexit

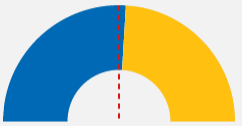
Enviroment and Climate Regional Accession Network ECRAN

Brexit ☹

Results

UK votes to **LEAVE** the EU

Leave
51.9%
17,410,742 VOTES



0 results left to declare

Remain
48.1%
16,141,241 VOTES

LEAVE UK votes to **LEAVE** the EU

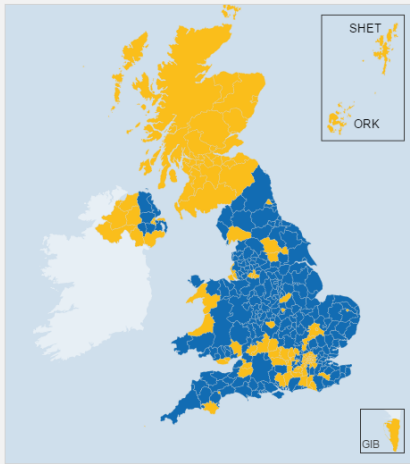
Electorate	46,501,241
Turnout	72.2%
Rejected ballots	26,033

How results are calculated

Enviroment and Climate Regional Accession Network ECRAN

Find local results

Enter a postcode, council name or NI constituency



Key:
Majority leave
Majority remain
Tie
Undeclared

Nation results

England

Leave **53.4%** 15,188,406 VOTES
Remain **46.6%** 13,266,996 VOTES
Counting complete
Turnout: 73.0%

Northern Ireland

Leave **44.2%** 349,442 VOTES
Remain **55.8%** 440,707 VOTES
Counting complete
Turnout: 62.7%

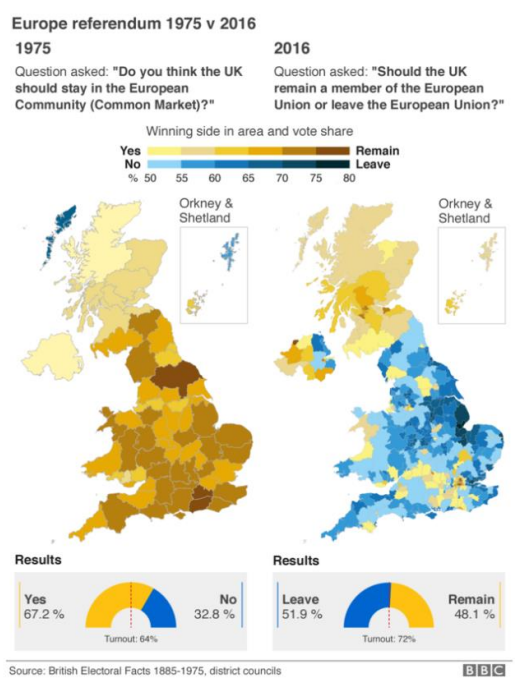
Scotland

Leave **38.0%** 1,018,322 VOTES
Remain **62.0%** 1,661,191 VOTES
Counting complete
Turnout: 67.2%

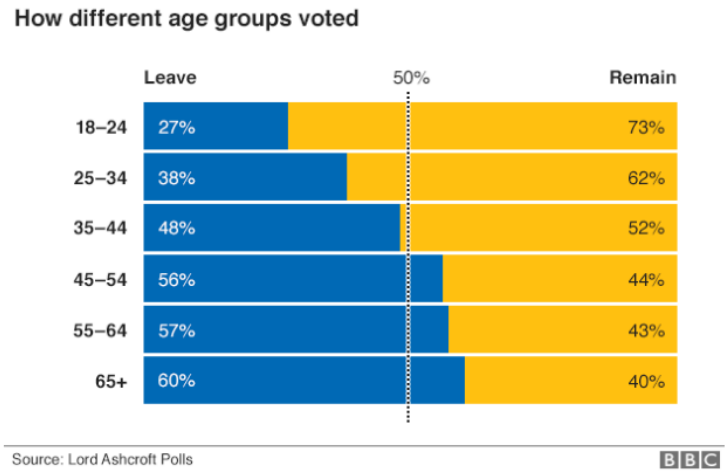
Wales

Leave **52.5%** 854,572 VOTES
Remain **47.5%** 772,347 VOTES
Counting complete
Turnout: 71.7%

Enviroment and Climate Regional Accession Network ECRAN



Enviroment and Climate Regional Accession Network ECRAN



But turnout in areas with a higher proportion of younger residents tended to be lower.

Enviroment and Climate Regional Accession Network ECRAN

ECRAN/Workshop Objectives

- The improvement of national systems and institutional arrangements.
  - strong institutional platform to build technical capacity in compiling GHG estimates
- Building confidence in developing Methods, Data sources and Assumptions.
- Setting priorities for country-specific short and long-term GHG inventory improvements. (Fiches/Activities)

Enviroment and Climate Regional Accession Network ECRAN

Overview of ECRAN WG2: National Systems

- Participants and roles
- Activities and Actions
- National System Progress
  - Status of estimates and General

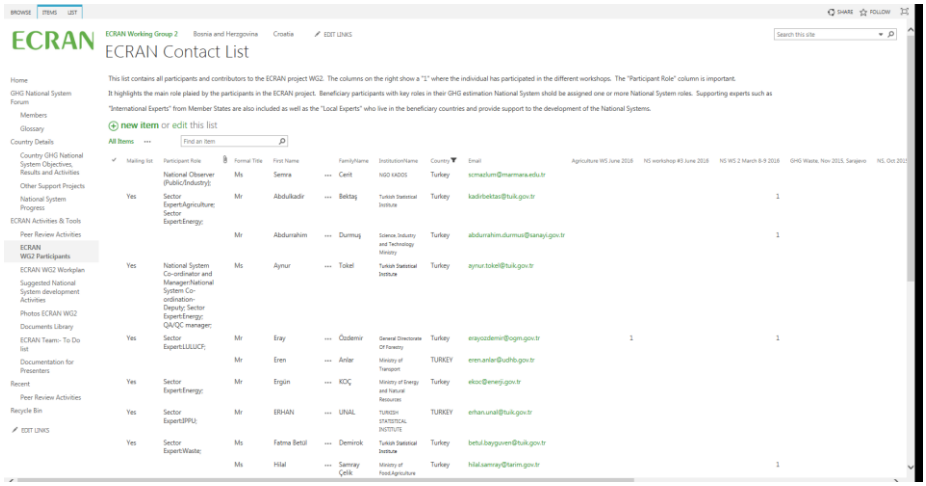
Enviroment and Climate Regional Accession Network ECRAN

NS Knowledge Sharing Portal

- https://aetherltd.sharepoint.com/sites/ECRAN-WG2

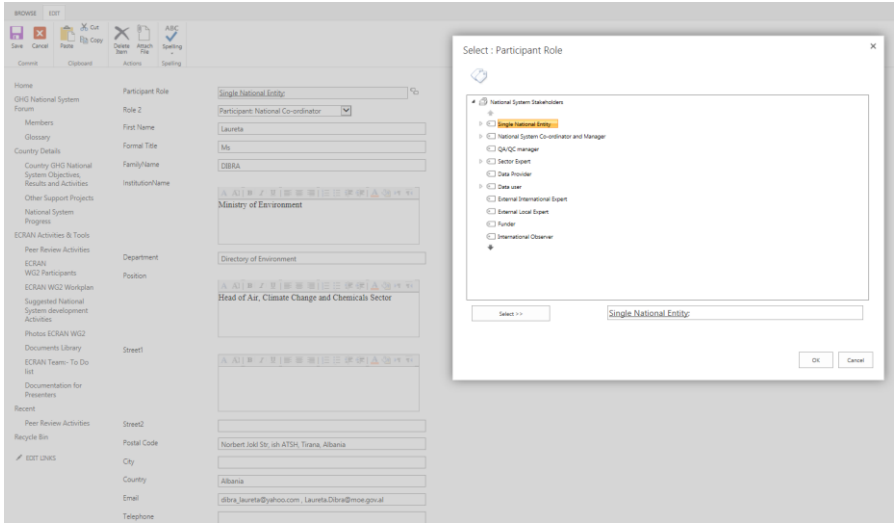
Enviroment and Climate Regional Accession Network ECRAN

NS Knowledge Sharing Portal: NS Participants



Enviroment and Climate Regional Accession Network ECRAN

ECRAN Participant Roles



Enviroment and Climate Regional Accession Network ECRAN

ECRAN WG2 NS roles Identified.

- Roles
- Number of People

National System Role (and Number of people)	Kosovo*	Albania	Turkey	Bosnia and Herzegovina	Serbia	former Yugoslav Republic of Macedonia	Montenegro	Capacity Engaged with ECRAN
#Single National Entity	1	1			1		1	4
#Single National Entity Deputy					2			2
#Legal Advisor							1	1
#National System Co-ordinator and Manager				1	1	1	1	4
#National System Co-ordination- Deputy			1		1			2
#QA/QC manager			1			1		2
#Sector Expert	2		1		1	4	3	11
#Sector Expert:Agriculture	2		2					4
#Sector Expert:Energy	1		5		1			7
#Sector Expert:IPPU	2		2		2			6
#Sector Expert:LULUCF	2		3					5
#Sector Expert:Waste			1	1	3			5
#Data Provider						5	1	6
#National Observer (Public/Industry)		1	1					2
#External Local Expert	1	1		1	1	1	1	6
#Unknown	14	21	6	16	3		2	62
Capacity Engaged with ECRAN	**25**	**24**	**23**	**19**	**16**	**12**	**10**	**129**

Enviroment and Climate Regional Accession Network ECRAN

ECRAN WG2 Participants

- Participating in 1 or more workshops

National System Role (and Number Participants)	Albania	Bosnia and Herzegovina	Kosovo*	Turkey	former Yugoslav Republic of Macedonia	Serbia	Montenegro	Capacity Engaged with ECRAN
#Single National Entity	1		1			0	1	3
#Single National Entity Deputy						1		1
#Legal Advisor							1	1
#National System Co-ordinator and Manager		1			0	1	1	3
#National System Co-ordination- Deputy				0.3		1		1.33
#QA/QC manager				0.3	1			1.33
#Sector Expert			2	0.5	4	1	3	10
#Sector Expert:Agriculture			1	0.5				1.5
#Sector Expert:Energy			1	2.3		0		2.83
#Sector Expert:IPPU			1	1		0		2
#Sector Expert:LULUCF			1	1				2
#Sector Expert:Waste		1		1		2		4
#Data Provider					3		1	4
#National Observer (Public/Industry)	1			1				2
#External Local Expert	1	1	1		1	0	1	5
#Unknown	17	12	8	3		2	0	42
Capacity Engaged with ECRAN	**20**	**15**	**15**	**11**	**9**	**8**	**8**	**86**

Enviroment and Climate Regional Accession Network ECRAN

ECRAN Participant Leaders

Place	Name	InstitutionName	Country	Role	Participatic
1	Ms Ranka Radic	Republic Hidrometeorological Service	Bosnia and Herzegovina	#National System Co-ordinator and Manager	9
	Ms Svjetlana Stupar	Republic Hydrometeorological Service	Bosnia and Herzegovina	#Unknown	9
2	Ms Almira Kapetanovic	FMOiT	Bosnia and Herzegovina	#Unknown	6
	Ms Irena Tadic	EPA Montenegro	Montenegro	#Sector Expert	6
	Ms Ivana Dukic	Serbian Environmental Protection Agency	Serbia	#Sector Expert	6
	Ms Pelin Buzluk	Ministry of Energy and Natural Resources	Turkey	#Sector Expert:Energy	6
	Ms Enkeleda Shkurta	National Environmental Agency	Albania	#Unknown	6
3	Ms Jonila Haxhillari	Ministry of Environment	Albania	#Unknown	5
	Ms Merima Karabegović	JP Elektroprivreda BIH	Bosnia and Herzegovina	#Unknown	5
	Mr Enis Krečinić	Federal hydrometeorogical Institute	Bosnia and Herzegovina	#Unknown	5
	Mr Rizah Hajdari	Kosovo Environmental Protection Agency	Kosovo*	#Unknown	5
	Ms Ivana Antonovic	Serbian Environmental Protection Agency	Serbia	#National System Co-ordination- Deputy	5
	Ms Ranka Zarubica	Environmental Protection Agency	Montenegro	#Sector Expert	5
	Mr Afrim Berisha	Kosovo Environmental Protection Agency	Kosovo*	#Sector Expert:Agriculture; #Sector Expert:LULUCF	5

Agriculture WS June 2016
NS workshop #3 June 2016
NS WS 2 March 8-9 2016
GHG Waste, Nov 2015, Sarajevo
NS, Oct 2015, Zagreb
ALOFU, Apr 2015, Sarajevo
CRF, Mar 2014. Zagreb
CRF, Nov 2014, Zagreb
CRF, Jul 2014, Podgorica

Enviroment and Climate Regional Accession Network ECRAN

Overview National Systems Actions

- https://aetherltd.sharepoint.com/sites/ECRAN-WG2/_layouts/15/start.aspx#/Lists/Objectives%20and%20Results/Summary.aspx

- Share progress and highlight successes and remaining problems.
- Developing (Action Documents) for future larger country specific projects under IPA or other support activities.

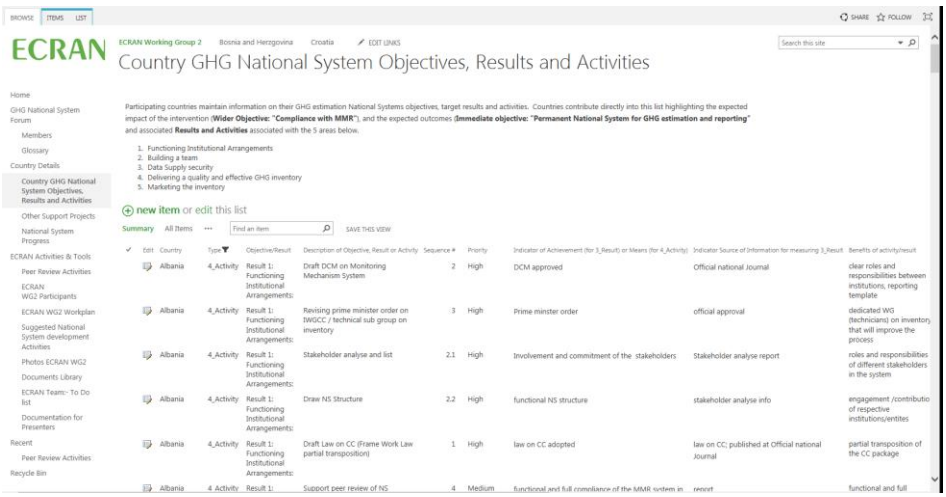
Enviroment and Climate Regional Accession Network ECRAN

NS Knowledge Sharing Portal

- https://aetherltd.sharepoint.com/sites/ECRAN-WG2

Enviroment and Climate Regional Accession Network ECRAN

NS Knowledge Sharing Portal: Country Plans

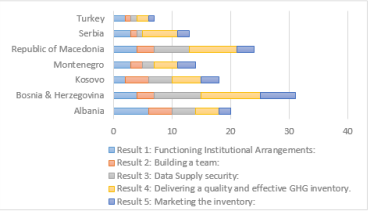


Enviroment and Climate Regional Accession Network ECRAN

Overview National Systems Actions

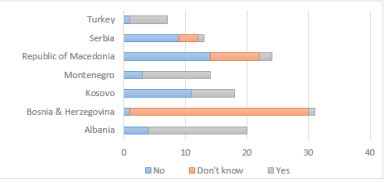
Number and Distribution of Activities

Count	Column					
Row Labels	Result 1:	Result 2:	Result 3:	Result 4:	Result 5:	Grand Total
Albania	6	4	4	4	2	20
Bosnia & Herzegovina	4	3	8	10	6	31
Kosovo	2	4	4	5	3	18
Montenegro	3	2	2	4	3	14
Republic of Macedonia	4	3	6	8	3	24
Serbia	3	1	1	6	2	13
Turkey	2	1	1	2	1	7
Grand Total	**24**	**18**	**26**	**39**	**20**	**127**



Level of Support Required for Activities

Count	Column		
Row Labels	No	Don't know	Yes
Albania	4		16
Bosnia & Herzegovina	1	29	1
Kosovo	11		7
Montenegro	3		11
Republic of Macedonia	14	8	2
Serbia	9	3	1
Turkey	1		6
Grand Total	**43**	**40**	**44**

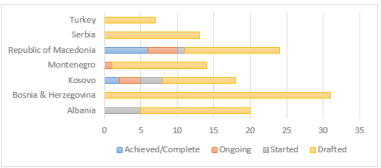


Enviroment and Climate Regional Accession Network ECRAN

Overview National Systems Actions

Status of Activities

Count	Column			
Row Labels	Achieved	Ongoing	Started	Drafted
Albania			5	15
Bosnia & Herzegovina				31
Kosovo	2	3	3	10
Montenegro		1		13
Republic of Macedonia	6	4	1	13
Serbia				13
Turkey				7
Grand Total	**8**	**8**	**9**	**102**



Completeness of Information

	Albania	Bosnia &	Croatia	Kosovo	Montene	Republic	Serbia	Turkey
Count of Activities	**20**	**31**	**8**	**18**	**14**	**24**	**13**	**7**
Count of Priority	20	31	8	18	14	24	13	7
Count of Indicator of Achievement (for :	20	13	3	18	14	12	2	7
Count of Indicator Source of Informatior	20			8	14	3		7
Count of Benefits of activity/result	20	4			12	10	1	
Count of Target completion date	20	3			12	2		
Count of External assistance?	20	31	8	18	14	24	13	7
Count of Linked projects	17	2		9	12		2	

This row indicates the number of activities present

If the information has been completed (e.g. Indicator of Achievement) then the count of that row will equal the count in the top row.

Enviroment and Climate Regional Accession Network ECRAN

Overview National Systems Actions

Summary of Linked Projects

Row Labels	Count
Albania	**17**
EU project	2
EU/IPA/TAIEX	1
EU/TAIEX/IPA	1
IBECA - IPA 2013	4
MoE (Sector on CC)	1
Taiex	1
TAIEX/Twining program	2
Taiex/Twining projects	1
Twining project (IPA)	2
Twining projects (IPA)	2
Bosnia & Herzegovina	**1**
Third national communication	1
Montenegro	**6**
TNC	1
TNC, SBUR	5
Grand Total	**24**

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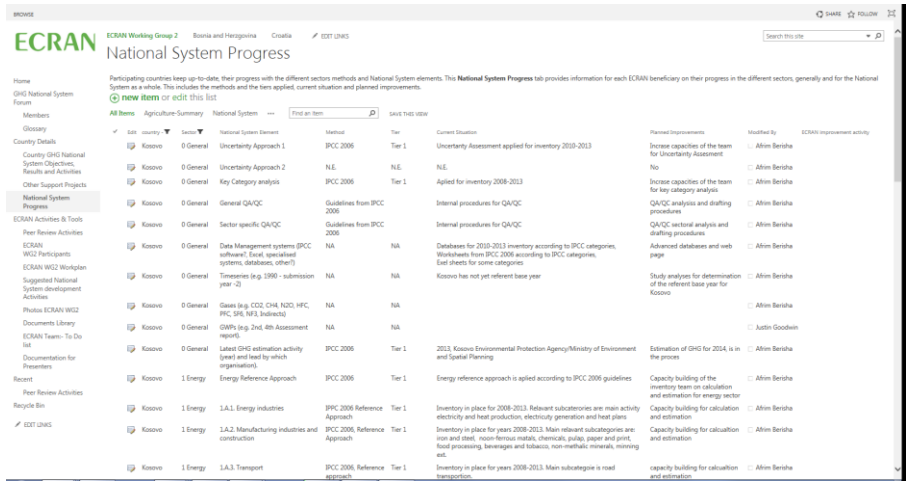
NS Knowledge Sharing Portal

- https://aetherltd.sharepoint.com/sites/ECRAN-WG2

Enviroment and Climate Regional Accession Network ECRAN

NS Knowledge Sharing Portal: Country Progress



Enviroment and Climate Regional Accession Network ECRAN

Country National System Progress

- National System should know the Status of progress.
- Indicator of ECRAN engagement with NS
- Starting point for Actions/Activities & informal review.

Country	0 General	0 National System	1 Energy	2 IPPU	3 Agriculture	4 LULUCF	5 Waste	6 Other	Memo	% complete
Serbia	100%	75%	100%	100%	100%	100%	100%	100%	100%	97%
Kosovo	90%	75%	100%	88%	100%	100%	100%	100%	13%	85%
Montenegro	100%	0%	100%	100%	100%	100%	20%	0%	100%	69%
Republic of Macedonia	80%	75%	100%	100%	80%	0%	20%	0%	13%	52%
Turkey	0%	0%	0%	0%	100%	0%	0%	0%	0%	11%
Albania	0%	0%	0%	0%	90%	0%	0%	0%	0%	10%
Bosnia & Herzegovina	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	53%	**32%**	**57%**	**55%**	**81%**	**43%**	**34%**	**29%**	**32%**	**46%**

- https://aetherltd.sharepoint.com/sites/ECRAN-WG2/_layouts/15/start.aspx#/Lists/CountryMethods/AllItems.aspx

Enviroment and Climate Regional Accession Network ECRAN

Country National System: Information on Progress (General)

	Albania	Bosnia & Herzegovina	Kosovo	Montenegro	Republic of Macedonia	Serbia	Turkey
Data Management systems (IPCC software?, Excel, specialised systems, databases, other?)			Own DB	IPCC 2006 software	IPCC 2006 software	IPCC 2006 software	
Gases (e.g. CO2, CH4, N2O, HFC, PFC, SF6, NF3, Indirects)				CO2,CH4, N2O, HFC		CO2,CH4, N2O, HFC	
General QA/QC			Own System	Part of BUR	Part of BUR	Own System	
Sector specific QA/QC			Own System	BUR		Own System	
GWPs (e.g. 2nd, 4th Assessment report).				AR2		AR4	
Key Category analysis			Tier 1	Tier 1	Tier 1	Tier 1	
Latest GHG estimation activity (year) and lead by which organisation).			EPA	EPA		EPA	
Timeseries (e.g. 1990 - submission year -2)			2013	1990-2013	1990 - 2012	1990-2014	
Uncertainty Approach 1			Approach 1	Approach 1		Approach 1	
Uncertainty Approach 2					Approach 2		

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Country National System: Information on Progress (Energy - Agriculture)

		Albania	Bosnia & Herzegovina	Kosovo	Montenegro	Republic of Macedonia	Serbia	Turkey
1 Energy	1.A.1. Energy industries			2006:- T1	2006:- T2	2006:- T2	2006:- T1	
	1.A.2. Manufacturing industries and construction			2006:- T1	2006:- T1	2006:- T1	2006:- T1	
	1.A.3. Transport			2006:- T1	2006:- T1	2006:- T1	2006:- T2/3	
	1.A.4. Other sectors			2006:- T1	2006:- T1	2006:- T1	2006:- T1	
	1.A.5. Other			NO:-	2006:- T1	2006:- T1	2006:- T1	
	1.B.1. Solid fuels			2006:- T1	2006:- T1		2006:- T1	
	1.B.2. Oil and natural gas and other emissions from energy production			NO:-	2006:- T1	2006:-	2006:- T1	
	1.C. CO2 Transport and storage			NO:-			NO:-	
	Energy Reference Approach			2006:- T1	2006:- T1	2006:-	2006:- T1	
2 IPPU	2.A. Mineral industry			2006:- T2	2006:- T1	2006:- T1/2	2006:- T1	
	2.B. Chemical industry			NO:-		2006:- T1	2006:- T1	
	2.C. Metal industry			NO:-	2006:- T1/2	2006:- T1/2	2006:- T1	
	2.D. Non-energy products from fuels and solvent use			2006:- T1	2006:- T1		2006:- T1	
	2.E. Electronic industry			NO:-			NO:-	
	2.F. Product uses as substitutes for ODS			2006:- T1	2006:- T1		2006:- T1	
	2.G. Other product manufacture and use			NO:-	2006:- T1		2006:- T1	
	2.H. Other(3)			NO:-			NO:-	
3 Agriculture	3.A. Enteric fermentation	1996:- T1		2006:- T1	2006:- T1	2006:- T1	2006:- T1	2006:- T1
	3.B. Manure management	1996:- T1		2006:- T1	2006:- T1	2006:- T1	2006:- T1	2006:- T1
	3.C. Rice cultivation			NO:-	NO:-	2006:- T1	NO:-	2006:- T1
	3.D. Agricultural soils	1996:- T1		2006:- T1	2006:- T1		2006:- T1/2	2006:- T1
	3.E. Prescribed burning of savannas			NO:-	NO:-		NO:-	NO:-
	3.F. Field burning of agricultural residues	1996:- T1		2006:- T1	2006:- T1		NO:-	2006:- T1
	3.G. Liming			NO:-	NO:-		NO:-	NE:-
	3.H. Urea application	1996:- T1		2006:- T1	NO:-	2006:- T1	2006:- T1	2006:- T1
	3.I. Other carbon-contining fertilizers	1996:- T1		2006:- T1	NO:-		2006:- T1	NE:-
	3.J. Other			NO:-	NO:-		NO:-	NO:-

Enviroment and Climate Regional Accession Network ECRAN

Country National System: Information on Progress (LULUCF - Memo)

		Albania	Bosnia & Herzegovina	Kosovo	Montenegro	Republic of Macedonia	Serbia	Turkey
4 LULUCF	4.A. Forest land (4)			2006:- T1	2006:- T1		2006:- T1	
	4.B. Cropland (4)			2006:- T1			2006:- T1	
	4.C. Grassland (4)			2006:- T1			2006:- T1	
	4.D. Wetlands (4)			NO:-			2006:- T1	
	4.E. Settlements (4)			2006:- T1			2006:- T1	
	4.F. Other land (4)			2006:- T1			2006:- T1	
	4.G. Harvested wood products			NO:-			2006:- T1	
	4.H. Other (4)			NO:-			NO:-	
5 Waste	5A-MSW	2006:-	2000:-	2006:- T1	2006:- T1	2000:-	2006:- T1	
	5A-Non-MSW			2006:- T1	NE:-	NE:-	2006:- T1	
	5B-MSW	NE:-			NE:-	NE:-	NO:-	
	5B-Non-MSW	NE:-			NE:-	NE:-	NO:-	
	5C1-MSW			2006:- T1	NE:-	2000:-	NO:-	
	5C1-Non-MSW			2006:- T1	NE:-	2000:-	NO:-	
	5C2-MSW			NO:-	NE:-	NE:-	NO:-	
	5C2-Non-MSW			NO:-	NE:-	NE:-	NO:-	
	5D-Domestic	2006:-	2000:-	2006:- T1	2006:- T1	2006:-	2006:-	
	5D-Industrial		2000:-	2006:- T1	NE:-	2006:-	2006:-	
6 Other	6. Other (please specify)(6)			NO:-			NO:-	
Memo	Memo.CO2 captured						NO:-	
	Memo.CO2 emissions from biomass				2006:-		NO:-	
	Memo.Indirect CO2						NO:-	
	Memo.Indirect N2O						NO:-	
	Memo.International Aviation			2006:- T1	2006:-	2006:- T1/2	2006:- T1	
	Memo.International Navigation				2006:-		2006:- T1	
	Memo.Long-term storage of C in waste disposal sites						NO:-	
	Memo.Multilateral operations						NO:-	

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Highlights

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ECRAN Highlights: Serbia

- **Fiche (Action Document) drafting:**
  - Agriculture: Tier 1 to Tier 2;
  - Waste: FOD;
  - FGases;
  - EU Decision 529/2013 (LULUCF);
  - Capacity building 4 sectorial experts within SEPA.
- **ECRAN further support:**
  - check Serbian emissions from Agriculture (Enteric fermentation and Manure management)
  - recommendation for National System personnel structure.

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ECRAN Highlights: Montenegro

- **Progress:**
  - Drafting National Climate Act & GHG regulations, MMR Compliance and questionnaire docs.
  - Meetings and raising awareness (National Systems)
  - ECRAN Agriculture Workshop attendance.
- **Fiche: (Action Document):**
  - Drafting legislation based on the analysis for full MMR implementation
  - Continuous team building/training;
  - NIR generation and NIR training;
  - Uncertainty assessment (Monte Carlo) training for all sectors.

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ECRAN Highlights: Macedonia

- **Progress:**
  - Development of the National System
  - Facilitative Sharing of views (Bonn)
  - Scoping Inventory component for SBUR (with UNDP)
  - Updating information on Actions and progress.
- **Fiche: (Action Document):**
  - **ADD**

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ECRAN Highlights: Albania

- **Progress:**
  - identification with future support needs (project fiche)
  - steps taken to facilitate the start of the GHG inventory work at the agency
  - Development of Climate Law
- **Fiche: (Action Document):**
  - **ADD**

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ECRAN Highlights: Kosovo

- **Progress:**
  - identification and detailed outline prepared for future support needs, including determination of a base year
  - Strong Agriculture workshop attendance
  - Improvement of activity data, calculation and estimation of GHG (e.g. Agriculture);
  - Work on the inventory for year 2014.
  - Participation at EEA/EIONET activities for GHG emissions;
- **Fiche: (Action Document):**
  - Action Plan for Climate Change in initial phase of drafting;

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ECRAN Highlights: Bosnia Herzegovina

- **Progress:**
  - Strong attendance (including NFP) at Agriculture workshop
  - Waste Expert on UNFCCC RoE
  - Facilitative Sharing of views (Bonn)
- **Fiche: (Action Document):**
  - **ADD**

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ECRAN Highlights: Turkey

- **Progress:**
  - Add
  - Agriculture Workshop Attendance
- **Fiche: (Action Document):**
  - **ADD**

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Reminder: MMR Requirements

- Annual reporting (January – March)
  - CRF + NIR
- Annual Quality Review
- Time series: 1990* – reporting yr -2
  - E.g. for 2016 = 1990 – 2014
- All mandatory categories & gases with 2006 IPCC methods
- At least Tier 1, Tier 2+ for Key Categories

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ECRAN WG2 Framing

- Long Term Goal: Compliance with MMR
- Short term Goal: Permanent National System for GHG estimation and reporting.
- Desired **RESULTS** & improvement **ACTIVITIES**
  - 1: Functioning Institutional Arrangements:
  - 2: Building a team:
  - 3: Data Supply security:
  - 4: Delivering a quality and effective GHG inventory.
  - 5: Marketing the inventory:

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Terminology 1 of 3: National System

- **National System (NS):** A team of organisations (people), available resources, data providers, and agreed processes and tools focussed on efficiently and repeatedly:
  - **Estimating & reporting** GHGs of timely & ensuring "acceptable" quality (TCCCA)
  - **Engaging** with stakeholders and external review activities (verification) and the outside world!
  - **Improving estimates** and **evolving its-self** (the National System) to fit with governance structures and data suppliers.
- **Institutional Arrangements:** Agreements, Laws, contracts, functions, roles and responsibilities in place in order for the NS to function.
- **Systems and processes:** Databases, servers, archives, files, workplans, milestones, templates that carry the GHG estimates and their documentation.

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Terminology 2 of 3: National System Actors

Reporting, developing and retaining the resources, Institutional arrangements, skills, QA/QC & tools needed for a good quality GHG inventory.

Sector experts understand the data & emitting/removal processes.
Strong links to national networks of technical experts and data sources for sector/category.

Data owners and suppliers National Statistics

- **Single National Entity (SNE)**: responsible for the submission of the GHG inventory to UNFCCC and MMR. (Usually the "Ministry" or appointed "Environment Agency").
- **Inventory Agency (InvAg)**: responsible for co-ordinating the GHG inventory. Can have delegated responsibilities to submit to UNFCCC/MMR. Can include compilation experts.
- **National/Country Experts (NatExp)**: Experts identified in the "National System" as country representative experts. **Sector Experts** with recognised knowledge of the countries sectoral emissions/removals. (e.g. Agriculture)..
- **Data Suppliers:** Organisations providing data used in the GHG estimates. (e.g. Agriculture statistics)
- **Stakeholders:** Organisations with an interest in the GHG estimates (including data suppliers). E.g. Agriculture Policy makers, NGOs, Industry representatives, research institutes.

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Terminology 3 of 3: ECRAN/TAIEX support

- **ECRAN WG2 (MMR) Project facilitators:** Justin & Imre
- **Local Experts:** funded by ECRAN/TAIEX supporting National/Country Experts to improve the National System.
- **International Experts:** International experts funded by ECRAN/TAIEX supporting National and Local Experts to improve the National System.
  - Participating **Member State Experts**
  - International **ECRAN Experts**

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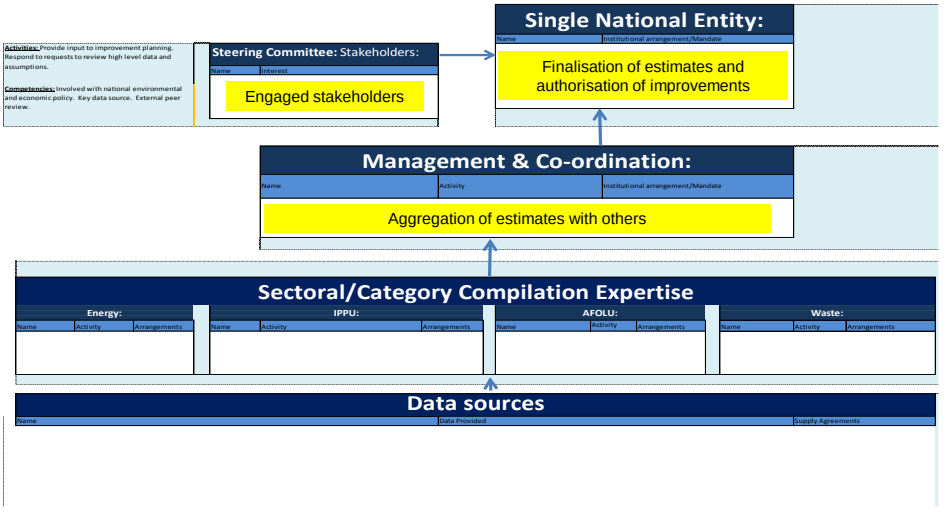
National System: Institutional Arrangements



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NS Knowledge Sharing Portal

- https://aetherltd.sharepoint.com/sites/ECRAN-WG2

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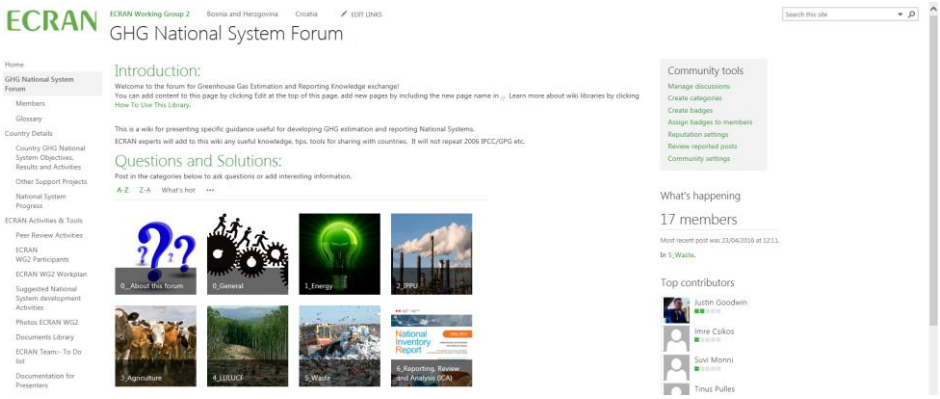
NS Knowledge Sharing Portal: Forum



- Ask Questions, share solutions.
- https://aetherltd.sharepoint.com/sites/ECRAN-WG2/SitePages/GHG%20National%20System%20Forum.aspx

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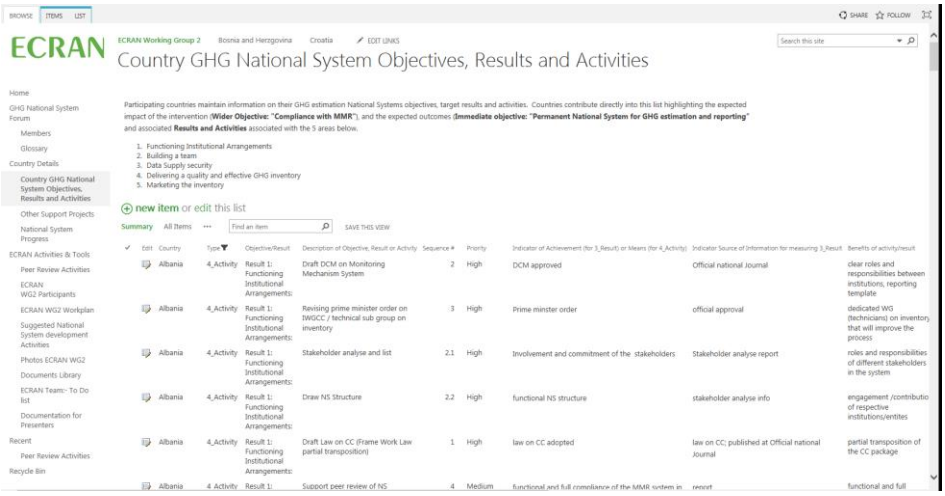
NS Knowledge Sharing Portal: Country Plans



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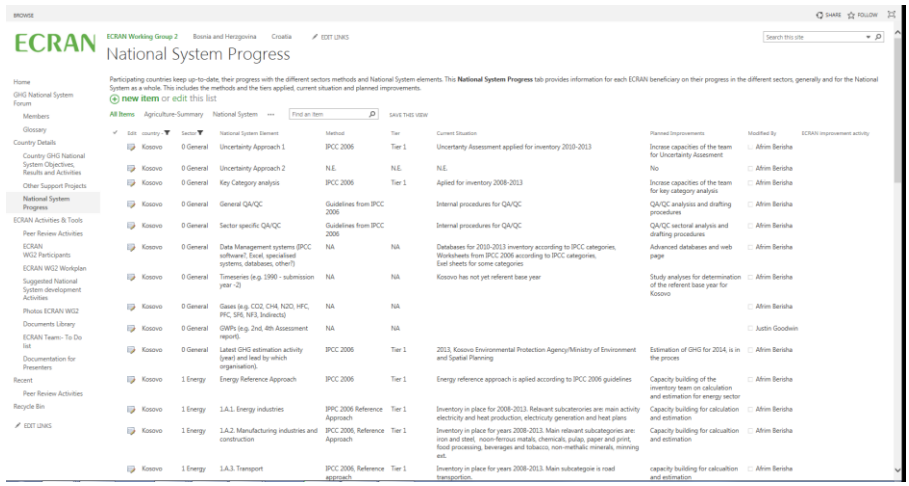
NS Knowledge Sharing Portal: Country Progress



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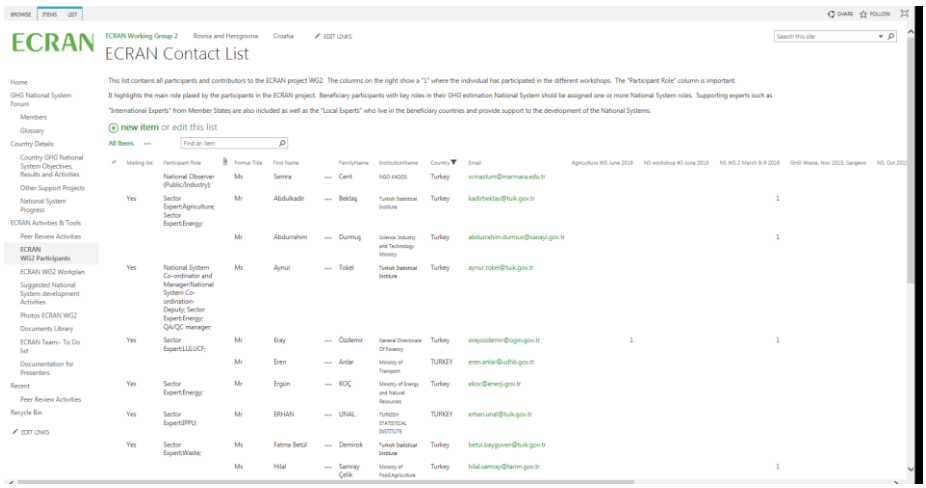
NS Knowledge Sharing Portal: NS Participants



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National Inventory Reports

Writing Guidance for National Inventory Reports

Contents

1 Introduction 1
2 Scope of the NIR 1
3 Writing Principles 2
4 Cross-Cutting Content 4
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5.1.1 Presentation of Data 6
5.1.2 Description of Trends 6
5.2 Sector Chapters (NIR Chapters 3-9) 7
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Writing Guidance

National Inventory Reports

February 2016

- See Forum item here on NIR..

Aether

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NIR: Summary Table and Method Statements

Table 3: Example summary table for the Energy Sector.

Energy GREENHOUSE GAS SOURCE AND SINK CATEGORIES	KCA Rank	Uncertainty (MC)	Latest year total	1990-Latest year trend	Last 2 yr trend	Recalculation Latest year	Recalculation 1990	Methodology reference (NIR Section)
Total Energy				-23%	-2%	-3%	0%	
A. Fuel combustion activities (sectoral approach)				-20%	-2%	-4%	-1%	
1. Energy industries				-25%	-7%	-7%	0%	
a. Public electricity and heat production	2, 6, 8, 35			-28%	-7%			MS1
b. Petroleum refining	2, 6, 8, 35			-18%	-8%			MS1
c. Manufacture of solid fuels and other energy industries	2, 6, 8, 35			8%	-2%			MS2, MS1
2. Manufacturing industries and construction				-41%	3%	-13%	-8%	
a. Iron and steel	7, 9, 12			-32%	22%			MS4
b. Non-ferrous metals	7, 9, 12			-81%	-67%			MS3
c. Chemicals	7, 9, 12			-57%	11%			MS3
d. Pulp, paper and print	7, 9, 12			-58%	2%			MS3
e. Food processing, beverages and tobacco	7, 9, 12			-41%	2%			MS3
f. Non-metallic minerals	7, 9, 12			-67%	5%			MS3
g. Other (please specify)	7, 9, 12			-30%	2%			MS3, MS21
3. Transport				-16%	-1%	-1%	0%	

Appendix A: Method Statement Template

A template for NIR Method Statements with notes given below the table.

Method Title	
	MS #
Relevant Categories, source names (List)	
Relevant Gases (List)	
Relevant fuels, activities (List)	
Background	
Data sources (list)	
Method approach (Text)	
Method Changes (Y/N)	
Assumptions & observations (list)	
Recalculation (yes/no)	
Recalculation justification & summary of change	
Improvements (List completed and planned)	
QA/QC processes	
Time series consistency issues (list)	
Uncertainties (describe key uncertainties)	
Verification	

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NIR: Cross Cutting

Table 2: Guidance on suggested location for cross-cutting content in the NIR.

Key Elements	NIR Section			
	Chapter 1	**Chapters 3-9 (Sectors)**	**Chapter 10**	**Annex or other document**
Completeness	Overview statement on completeness.	Chapter paragraph highlighting missing sources or statement on completeness.	Not required.	Not required.
Method Assumptions & Data Sources	Simple overview of methods and data sources used. Reference to CRF for table on tiers used. National System/Methods and Data Sources section to list data sources (e.g. Table 1.7).	Details of method assumptions, data sources sector specific QA/QC, time series consistency, verification, uncertainties, improvements.	Not required.	**Annex 3**: emission factors, important parameters and further elaboration of data source references. **Annex 4**: information on energy balance and reference approach.
Key Category (KC) Analysis	Overview of method and the key categories. Inclusion of aggregated key category analysis.	Identification of KCs in a summary table.	Not required.	Detailed tables **Annex 1**.
Uncertainties	Overview of methods and the headline uncertainties. Reference Annex 2.	Method statement text explaining key uncertainties with reference to Annex 2 for numerical information.	Not required.	Detailed uncertainty tables in **Annex 2**.
QA/QC	Section 1.2 will include the general approach and management of QA/QC, and highlight the general QA/QC activities.	Method statement text explaining sector specific QA/QC.	Not required.	**Separate documents:** 1) Detailed internal QA/QC plan 2) Working files: evidence of documentation of QA/QC
Recalculations	Not required.	Method statement text on the rationale and impact of recalculations. Numerical information in Chapter 10 summary table.	Full detail of numerical information on recalculations. Overview of justification and reference to Chapters 3-9 method statements for detail.	Not required.
Improvement	Overview of the process for improvements in National System. Refer to Chapter 10 for details of improvements made.	Method statement text highlighting key improvements completed. Reference to Chapter 10 for full listing and list of planned improvements.	Detailed improvement plan and implementation highlighting origin of recommendations for improvements. Including details of recalculations.	Not required.

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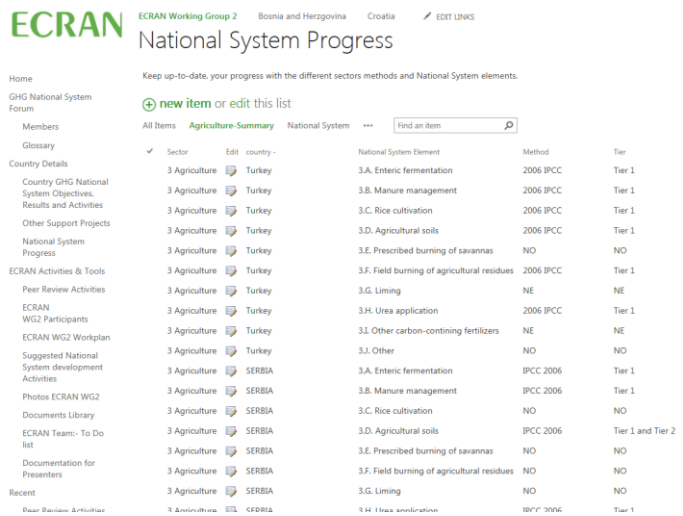
National System Progress: Agriculture



- https://aetherltd.sharepoint.com/sites/ECRAN-WG2/_layouts/15/start.aspx#/Lists/CountryMethods/AgricultureSummary.aspx

Day 2: Wednesday 29 June 2016

Enviroment and Climate Regional Accession Network ECRAN

Topic: National Systems for GHG estimation Chair and Co-Chair: Imre Csikós, Justin Goodwin			
Start	**Finish**	**Topic**	**Speaker**
08:30	**09:00**	**Registration**	
09:00	09:30	Summary of Day 1 & priorities for Workshop Discussion	Justin Goodwin
09:30	10:30	Closer look at emerging solutions and successes.	Justin Goodwin with support from: Tinus Pulles, Suvi Monni, Emma Salisbury Elisabeth Rigler, Merylin Mols, Detelina Petrova, Croatian expert team
10.30	***11.00***	***Coffee Break***	
11:00	11:15	Progression Clinics Introductions	Justin Goodwin
11:15	13:00	Progression Clinics: Session 1: Working on activities and plans/country fiches etc.	Lead by: Tinus Pulles, Suvi Monni, Emma Salisbury, Elisabeth Rigler, Merylin Mols, Detelina Petrova, Croatian expert team
13.00	***14.00***	***Lunch Break***	
14:00	15:00	Progression Clinics: Session 2:	As above
15:00	15:30	Reporting back, sharing views/progress	Country representatives
15.30	***15.45***	***Coffee Break***	
15:45	16:30	Introduction to peer review and analysis activities.	Justin Goodwin/Suvi Monni
16:15	17:00	Wrap-up & close	Justin Goodwin/ Imre Csikós

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QA/QC Approaches

- Fact:
  - QA/QC is a burden and slows us down ☹
  - No QA/QC no confidence = no point ☹
- Efficient QA/QC = happy people
- Happy people = Sustainable Team
- Sustainable Team = **Strong National System**
- Fact:
  - <u>Most EU MS have not solved this problem yet!! ☹</u>

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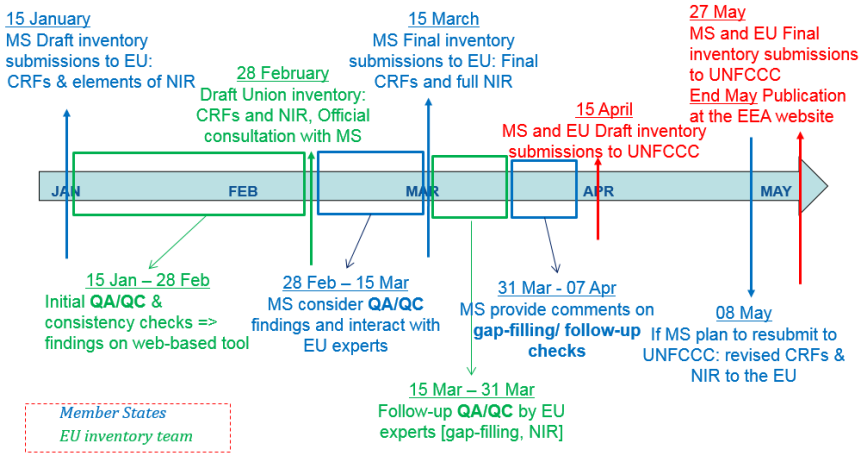

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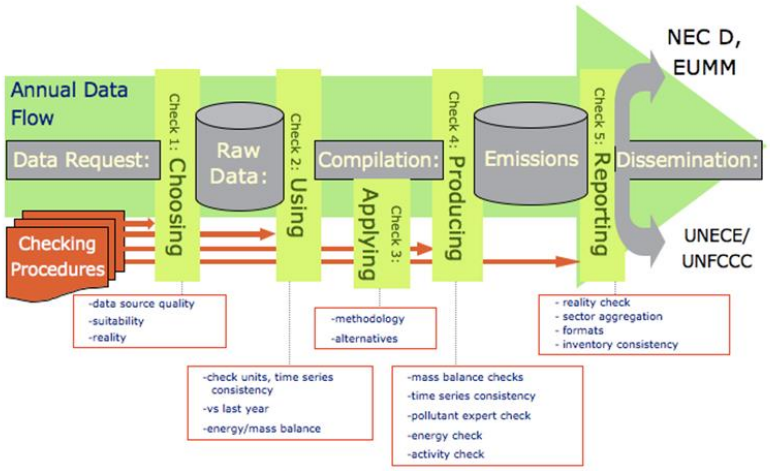

Figure 5 – NAEI Data Flow and QA/QC Checks

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QA/QC Approach

1. QA/QC Plan
   a) List of approved activities (Checks/reviews) (IDs)
   b) List of QA/QC documentation codes (#)
   c) Other responsibilities/timings etc..
2. Embedded QA/QC (& Documentation)
   a) Annotations in files (using IDs and #). Word/Excel/databases.
      - Documentation and evidence of checking/review
   b) Colour coding of calculation files (e.g. AD, Efs, checks)
   c) Collation of Documentation and QA/QC findings into "Log"
3. Aggregation of QA/QC and documentation Logs to master log.
   a) Evidence & feed to improvement plan
   b) Overview, scoring, priorities
   c) Compare with list of activities (1a) for completeness of QA/QC.

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National System Portal

- A focal point
- National System Archive
- Institutional memory
- Sharing information
- Engaging stakeholders

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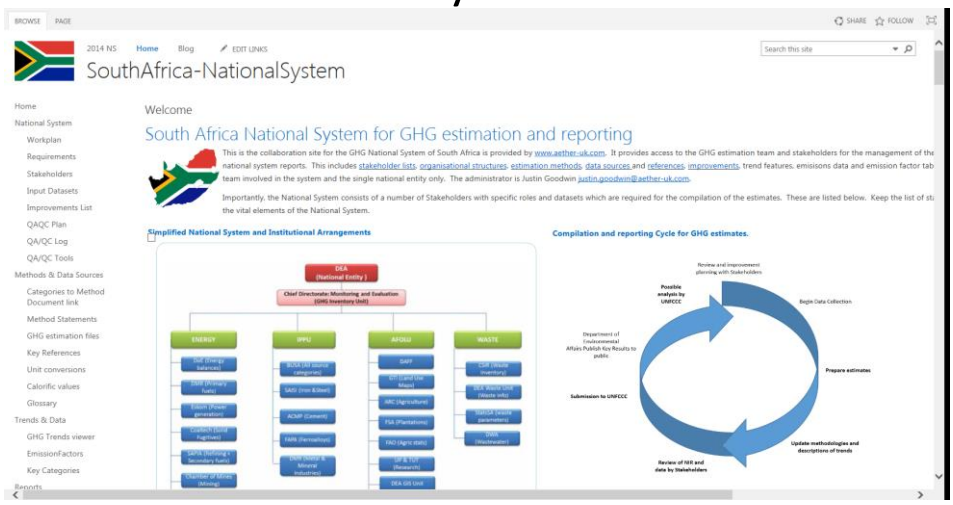
National System Portal



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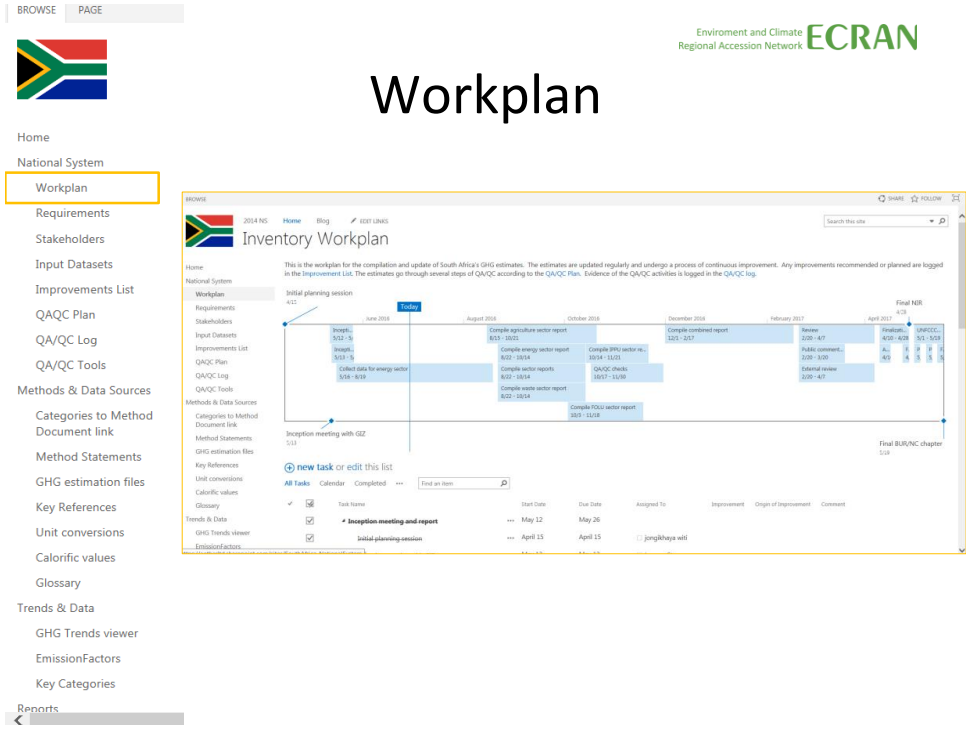
Workplan



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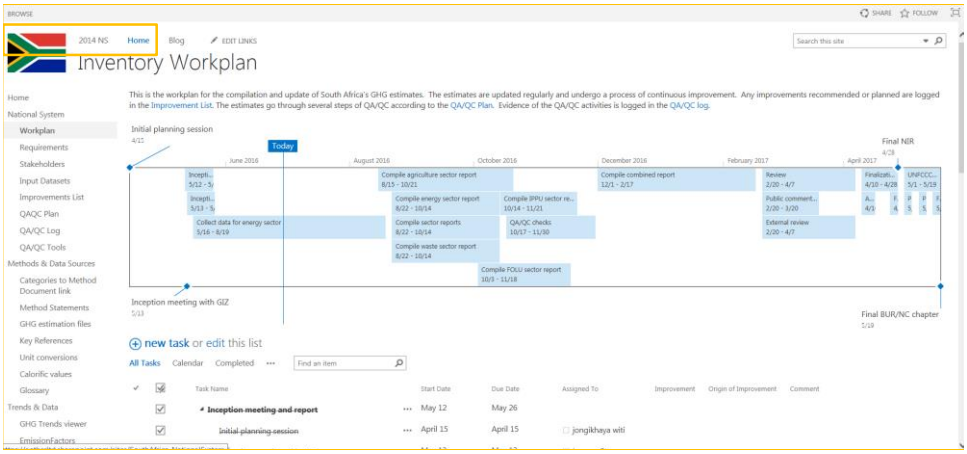
Workplan



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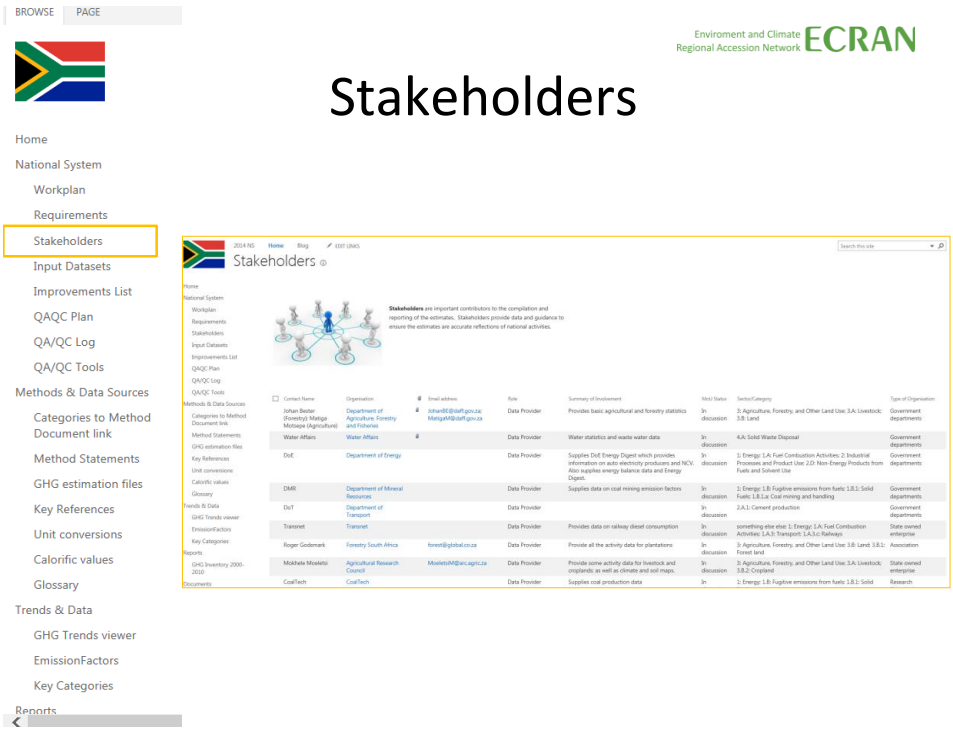
Stakeholders



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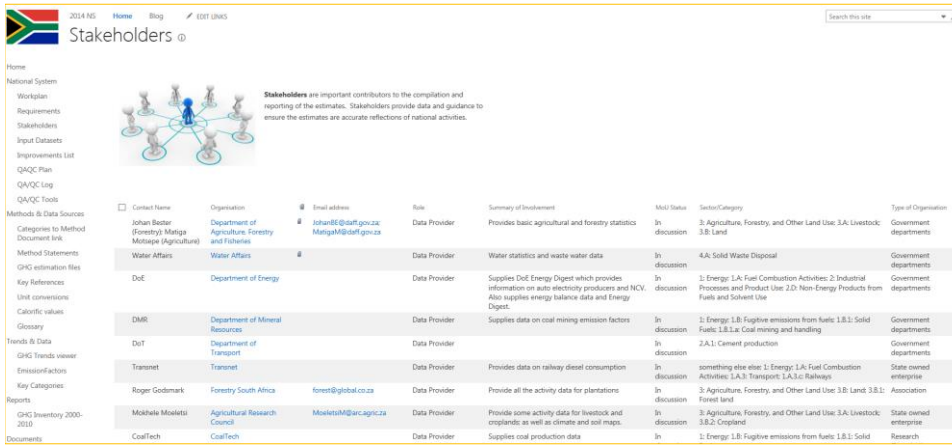
Stakeholders



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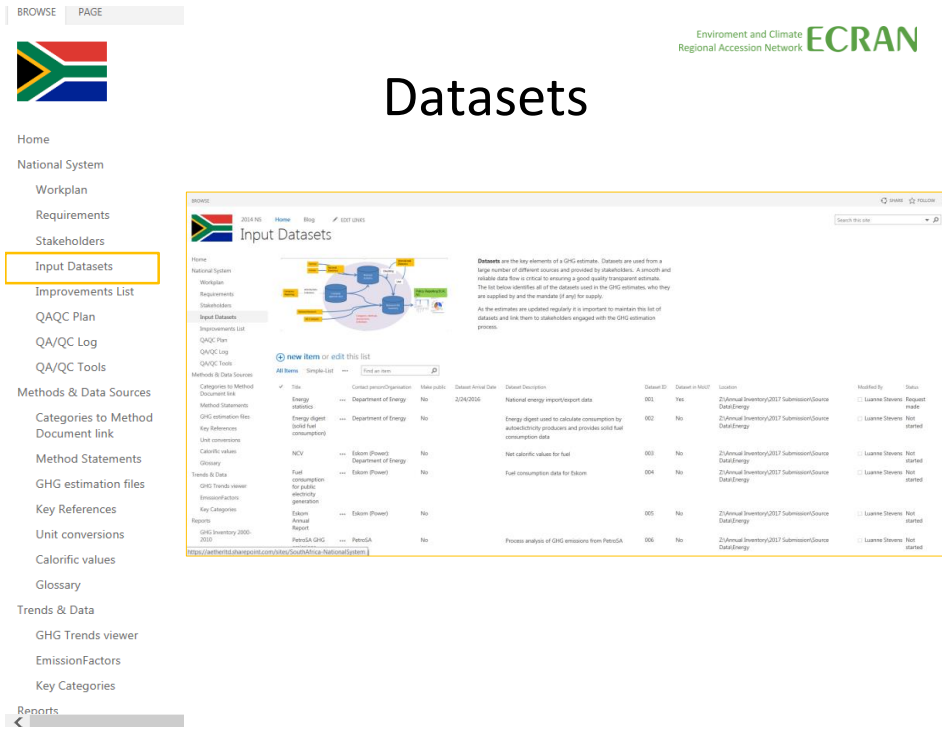
Datasets



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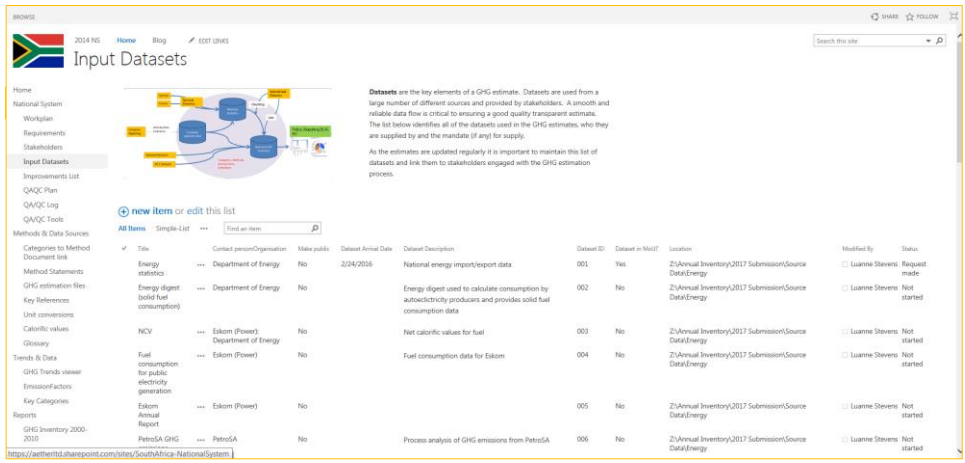
Datasets



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Method Descriptions

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GHG estimation files
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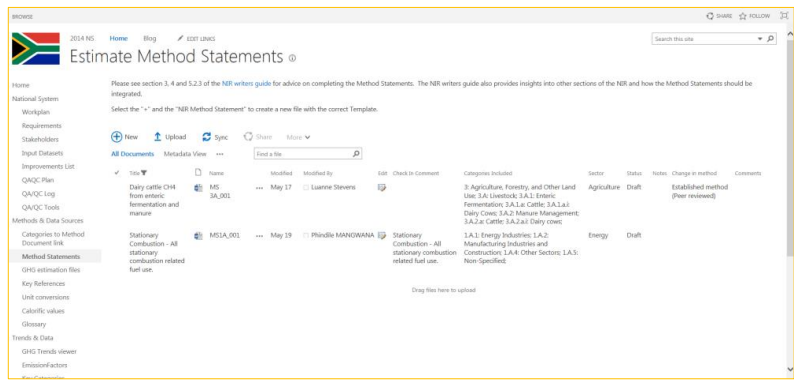
Unit conversions
Calorific values
Glossary
Trends & Data
GHG Trends viewer
EmissionFactors
Key Categories
Reports



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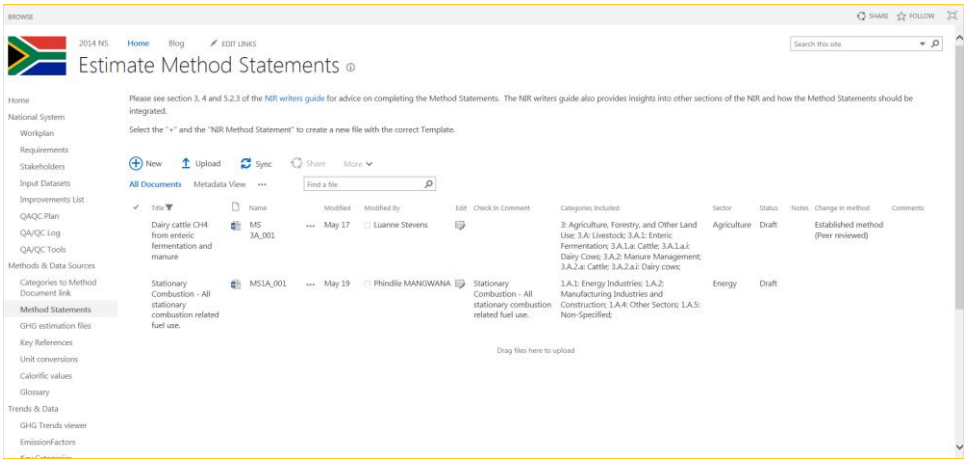

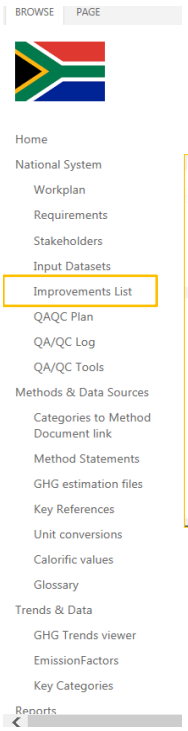

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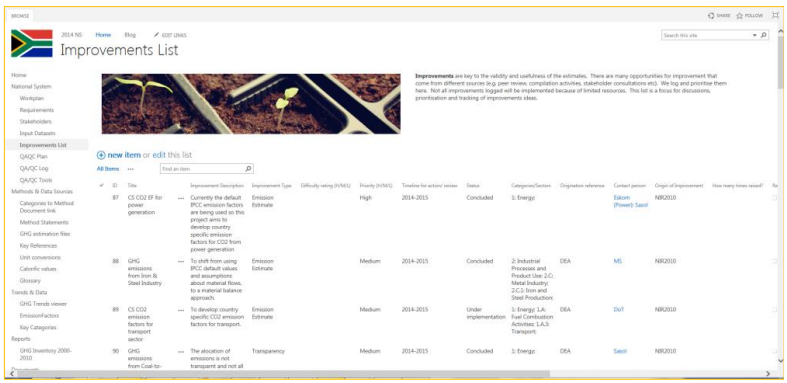
Improvements



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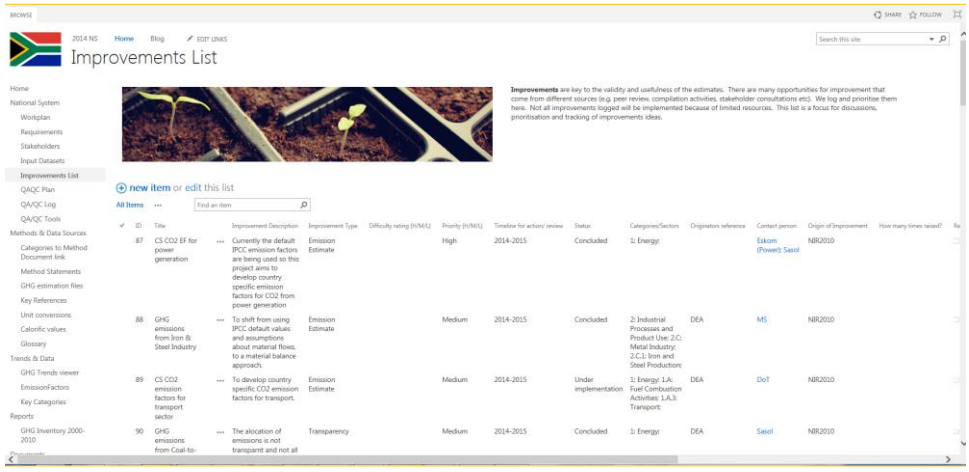
Improvements



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GHG trends viewer

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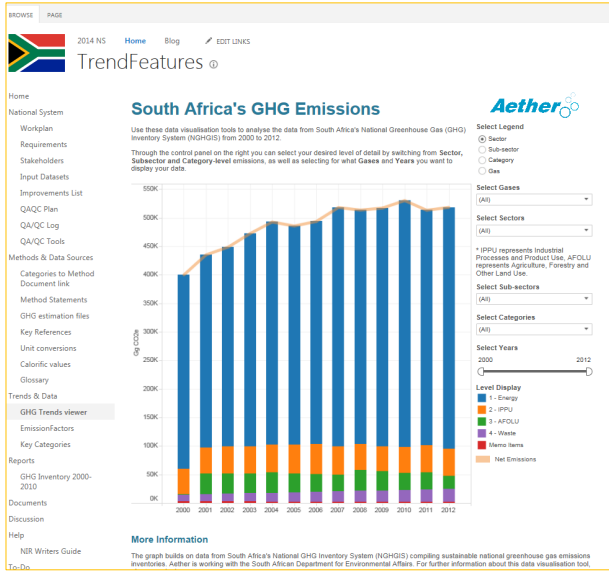

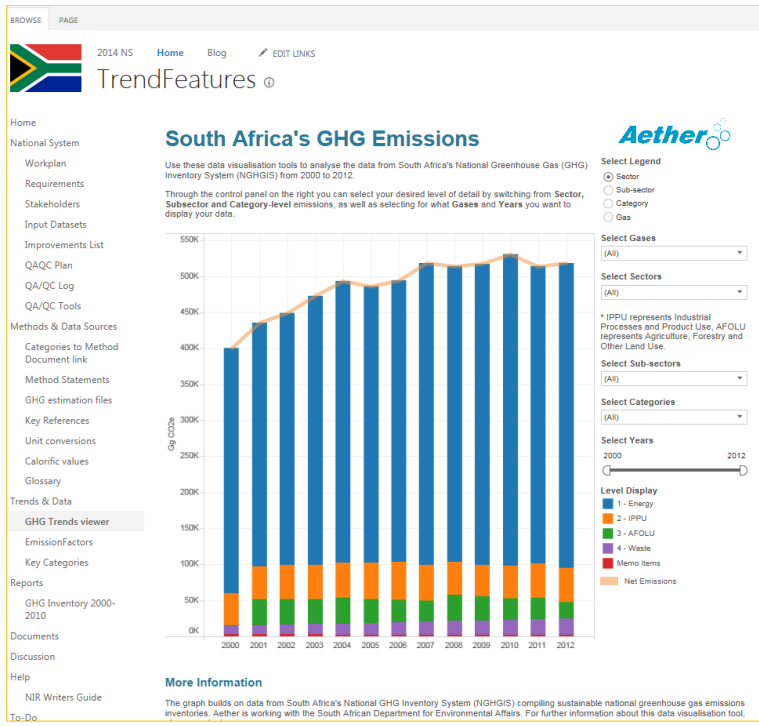

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Action Document

Your Country Fiche

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Structure and contents of Action Documents

Template here

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Data management overview

- IPCC software
- Data structures
- Reporting
- Spreadsheet good practice..

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Facilitated Informal Peer Review

- The basic longer term idea is to work towards a facilitated informal review where MS experts facilitate/support/mentor a review of GHG estimates between beneficiary countries. This provides basic training in estimating emissions, review, and improves understanding and awareness. Suvi and I will come up with some suggestions for this facilitated informal review idea and ask during the session if countries are interested in engaging in something like this in the future. We could also see if the Commission or other funders are interested in funding something like this in the coming months/year or two. During workshop session we would need to describe a possible process (e.g. the following) and resource needs:
-

1. Possible Facilitated informal review between West Balkan countries:
2. Basic training of country experts in the review priorities and/or encouragement/support for nomination to the RoE and for UNFCCC training.
3. Data gathered and shared (with review experts) on the countries estimates and activity data and methodology descriptions
4. Desk review time to review the data (experienced MS expert working with country expert to review 1 or more other beneficiary country estimates). Together reviewer experts compile and send questions to the reviewed country.
5. MS expert and reviewed country expert of reviewed country work together to answer the questions.
6. Reviewer MS expert and country expert work together to write recommendations.
7. MS and reviewed country experts work together to interpret recommendations into a prioritised improvement plan and "specifications" for improvement.
8. A summary report on the process and key findings for the Commission and beneficiary countries.

- Questions to try to answer during the session:

1. Do we need one MS expert per sector or something else.. e.g. a LR equivalent from a MS mentoring the beneficiary country team of experts to do the review and no other MS sector experts involved?
2. What would be the scope? All sectors? National Systems?
3. What criteria do we need for a meaningful review (level of detail of data, availability of country experts, method descriptions?
4. How much MS expert time is needed? How would they be resourced? TAIEX/Other??
5. How much country expert time is needed?

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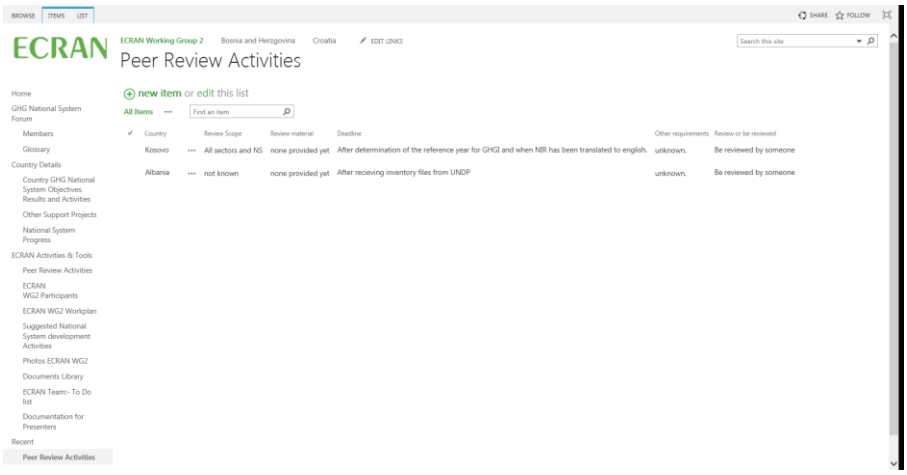
Facilitated Peer Review: Sign up



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Public Viewers:

- Collective system for countries.
- Facilitate review/analysis

- ADD viewer demonstration.
  - IEFs
  - South Africa

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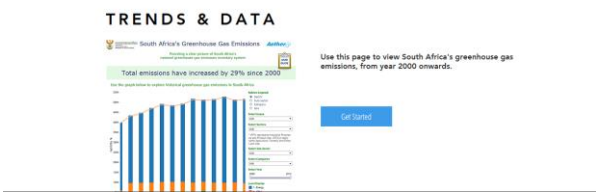
Public Site



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Other things

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Inventory Tree

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Thank you

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Workshop Wrap-up

Workshop Achievements

- ✓ Add WS achievements..
- ✓ Actual improvements/ideas for improvement.
- ✓ Greater Understanding/Confidence
  - ✓ People: (National Experts and MS "Mentors").
  - ✓ Priorities: (categories and gases)
- ✓ Renewed energy and ideas for future development projects.

UPDATE: Next Steps: Using the Forum

- https://aetherltd.sharepoint.com/sites/ECRAN-WG2
  - Ask questions, find solutions on Agriculture
  - Look for other helpful solutions e.g. "MoU"
  - Update on Agriculture Methods including ECRAN achievements & recommendations.

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Next Steps: Improving National Systems

1. Build your own Capacity: Lottery, Bus and Births.
   - **Make a case Nationally:** External (ECRAN) recommendations can help. Please ask..
   - **Look for funders to help start:** IPA, GEF/Paris/CBIT, others.. "Country Lead".. ECRAN experts
   - **Training and Learning**: UNFCCC RoE, "Doing", Mentors, Education, careers..
   - **Find mentors**, find out how to get their time. Stick with them..
   - **Don't wait for lawyers**!! Build informal relationships..
2. Data Management: Spreadsheets, databases, Native vs IPCC categorisation. Software??
   - Think about it.. It can make a big difference to the efficiency of the NS..
3. National Systems improvement
   - Action plans/Projects
   - Informal Review process

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Thank you

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National Systems areas of Activity

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Log-frame system

- 1_Long Term: Compliance with MMR
- 2_Short term: Permanent National System: Functioning Agriculture component
- 3_Results
  - Result 1: Functioning Institutional Arrangements:
    - 4_Activity 1: Target result, Description, Sequence, means, Benefit, Completion, Effort, External support needed, links.
    - 4_Activity 2
    - 4_Activity 3
    - ……..
  - Result 2: Building a team:
    - 4_Activity 1
    - 4_Activity 2
    - ……..
  - Result 3: Data Supply security:
  - Result 4: Delivering a quality and effective GHG inventory.
  - Result 5: Marketing the inventory:

4_Activity 1: Target result, Description, Sequence, Priority, means, Benefit, Completion, Effort, External support needed, links.

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Result 1: Functioning Institutional Arrangements

- **Suggested Activities:**
  - Draw and consult on NS structure
  - Create a National System document.
  - Document and agree roles and responsibilities (including the support of NC, BUR and NDC).
  - List & engage with Stakeholders.
  - Create the mandate for the compilation and reporting with laws.
  - Supported Peer review of NS.
  - Legal arrangements for data supply and analysis

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Result 2: Building a team:

- **Suggested Activities**:
  - Assign team roles and responsibilities (Sector experts, co-ordinator, QA/QC, peer review).
  - Recruitment, mentoring & training plan.
  - Activity and management plans for a sustainable team.
  - Approach to “buy-in” or use external support.

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Result 3: Data Supply Security:

- **Suggested Activities:**
  - List/Register of datasets and data supply stakeholders.
  - Development of data supply agreements (DSAs) (including QA/QC and uncertainty elements).
  - Laws to guarantee data supply for GHG estimation.
  - Development of statistics or Country Specific data.
  - Archiving system.

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Result 4: Delivering a quality and effective GHG inventory:

- **Suggested Activities**:
  - Produce CRF tables (Excel/xml). Engage in a supported peer/bilateral review.
  - Produce an NIR or set of method statements.
  - Improve data management (e.g. database system).
  - Key 2006 IPCC method development & data collection (by sector).
  - Develop QA/QC tools and systems and processes.

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Result 5: Marketing the inventory:

- **Suggested Activities**:
  - Outreach for use of GHG estimates by policy makers.
  - Publication of the data in user friendly forms.
  - Generate indicators and factsheets.
  - Actively engage with and support BUR, NC, NDC and Policies and Measures activities.