
Environment and Climate Regional Accession Network (ECRAN)

Report on the Regional
Training Seminar on
National Systems for
GHG inventories (and
projections)

14-16 October 2015, Zagreb

ENVIRONMENT AND CLIMATE REGIONAL NETWORK FOR ACCESSION - ECRAN

WORKSHOP REPORT

Activity 3.2 (Task 3.2.2B/Task 3.2.3B)

**REPORT ON THE REGIONAL TRAINING SEMINAR ON NATIONAL SYSTEMS FOR
GHG INVENTORIES AND PROJECTIONS**

Zagreb, 14-16 October 2015



This Project is funded by the
European Union



A project implemented by
Human Dynamics Consortium

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LIST OF ABBREVIATIONS	
ADCP	Annual Data Collection Plan
BUR	Biennial Update Report
CAEN	Croatian Agency for the Environment and Nature
CBCCAM	Coordination Board on Climate Change and Air Management, Turkey
CDR	Central Data Repository
COP	Conference on Parties
CRF	Common Reporting Format
DAFM	Department of Agriculture, Food and Marine, Ireland
DECC	Department of Energy and Climate Change, UK
DG	Directorate General
ECRAN	Environment and Climate Change Regional Accession Network
EEA	European Environment Agency
EIONET	European Environment Information and Observation Network
EPA	Environmental Protection Agency
EPRT	European Pollutant Release and Transfer Register
ER	Emissions Registration
ETC/ACM	Topic Centre on Air Pollution & Climate Change Mitigation
EtEA	Estonian Environment Agency
EU	European Union
EU ETS	European Union Emission Trading System
F-gases	Fluorescent gases
GHG	Greenhouse Gases
ICC	Intergovernmental Coordination Committee
INC	1st National Communication
IPCC	Intergovernmental Panel on Climate Change
JRC	Joint Research Centre (ISPRA)
KP	Kyoto Protocol
LEAP	Long-range Energy Alternatives Planning System
MAEP	Ministry of Agriculture and Environmental Protection, Serbia
MENP	Ministry of Environment and Nature Protection
MMD	Monitoring Mechanism Decision, Decision No 280/2004/EC
MME	Ministry of Mining and Energy, Serbia
MMR	Monitoring Mechanism Regulation, Regulation (EU) No 525/2013
MoE	Ministry of Environment
MOP	Meeting of Parties of the Kyoto Protocol
MOU	Memoranda of Understanding
MRV	Monitoring, Reporting and Verification
MS	Member State
NAEI	National Atmospheric Emission Inventory, UK
NAMA	Nationally Appropriate Mitigation Actions
NIR	National Inventory Report
NS	National System



LIST OF ABBREVIATIONS	
OCLR	Office of Climate Licensing and Resource, Ireland
PAM	Policies and Measures
QA/QC	Quality Assurance / Quality Control
RVO	Netherlands Enterprise Agency
SEPA	Serbian Environmental Protection Agency
SNC	Second National Communication
SNE	Single National Entity
TCCCA	Transparency, Consistency, Comparability, Completeness, Accuracy
UNFCCC	United Nations Framework Convention on Climate Change
WG	Working Group



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I. Background/Rationale/Legislation covered

Effective monitoring, reporting and verification (MRV) of greenhouse gas (GHG) emissions is critical for tracking progress towards the achievement of emission reduction targets.

As Parties to the United Nations Framework Convention on Climate Change (UNFCCC) and its Kyoto Protocol, the European Union and Member States are required to report annually on their GHG emissions. They also have to report regularly on their climate change policies and measures through National Communications.

The annual EU GHG inventory report is prepared on behalf of the European Commission by the European Environmental Agency each spring. In line with UNFCCC reporting requirements, each Member State's annual inventory covers emissions up until two years previously.

Regulation (EU) No 525/2013 on mechanisms for monitoring and reporting greenhouse gas emissions and for reporting other information at national and Union level relevant to climate change (hereinafter: Monitoring Mechanism Regulation or MMR) revises and strengthens the EU's greenhouse gas monitoring and reporting framework in order to provide a better platform for EU action to tackle climate change. It fully substitutes the Decision No 280/2004/EC (Monitoring Mechanism Decision or MMD). Its main goals include improving the quality of the data reported, enabling the implementation of the Climate and Energy package through accurately tracking the progress of the Union and EU Member States towards meeting their emission targets for 2013-2020 and taking into account the periodic update at international level of the use of metrics (Global warming potentials) and methodologies (IPCC Guidelines) in the determination of greenhouse gas inventories.

In the 4-6 weeks building up to the seminar participants were provided with additional guidance and templates and were asked to:

1. Elaborate one or more options for their institutional arrangements based on ongoing work or new brainstorming activities
2. Identify organisations/individuals and institutional arrangements that will ensure the needed services/data are available for timely estimation and reporting within any known resource constraints.
3. Prepare a short presentation on their existing and/or proposed new/strengthened national system. Participants will be asked to elaborate on the following aspects:
 - a. A single established or one or more options for a National System (NS) organizational structure with pros and cons of each.
 - b. Details of the participants involved in the brainstorming process (e.g. national Ministries, technical institutes and national statistical organizations).
 - c. Feedback on who liked/disliked which aspects of the proposed organizational structure and why.
 - d. Options considered for securing the institutions into the NS (organizational structure.) so that they are available when needed to provide services and data.

- e. Institutional arrangements planned for each sector for compilation and QA/QC of estimates and data flow.
- f. Existing highlights (things that work well) and prioritized ideas for improvement.
- g. A view on the available capacity to compile and QA/QC estimates regularly (annual)
- h. Other identified benefits of developing a strong national system to govern high quality GHG data flow and reporting.



II. Objectives of the Training

Objectives

The aim of this training seminar was to gradually improve/increase technical knowledge and institutional and procedural capacities of the ECRAN countries to prepare submissions of the National Inventory Reports according to the requirements of the MMR.

The training seminar is covering following activities of ECRAN's Working Group 2 on "National inventory systems and the EU Monitoring Mechanism Regulation":

- **Sub-Task 2.2 B:** *Regional MMR exercise on selected sector*
- **Sub-Task 2.3 B:** *Regional Training on various reporting aspects of the MMR*

The above sub-tasks will deal with the improvement of national systems and institutional arrangements. This will enable countries to establish a strong institutional platform to build technical capacity in compiling GHG estimates.

The results of this training will feed into assessment report which will include recommendations for short and long-term inventory improvements in relation to applied methodology, activity data and emission factors in the beneficiaries.

This regional training seminar is based on the *2006 IPCC Guidelines for National Greenhouse Gas Inventories and the UNFCCC and MMR reporting requirements*.

Expected Results

The expected results are:

- Collectively understand the current state of progress with establishing national systems for GHG estimation;
- Identification gaps in beneficiary national systems and provide recommendations and guidance for improvements;
- Improve the ability of countries to establish strong and efficient national systems. Enabling participants to return and take decisive action to secure strong data flows and develop national expertise in compilation and reporting;
- Setting priorities for country-specific short and long-term GHG inventory improvements.



III. Highlights from the Training

Reference is made to Annex I for the agenda. Below only the main elements are highlighted. The presentations are presented in Annex III.

Highlights Day 1

Day 1 – 14 October 2015, Zagreb, Croatia (Hotel Panorama),

Introduction to Sub-task 2.2B and 2.3-B: – Imre Csikós

- Mr Csikós presented the overview of tasks and modules in Activity 2, main goals, approach to and structure of the trainings which is presented on figure 1.
- Main results of this of this particular training to be achieved are to collectively understand the current state of progress with establishing national systems for GHG estimation and to identify gaps in beneficiary national systems and provide recommendations and guidance for improvements.

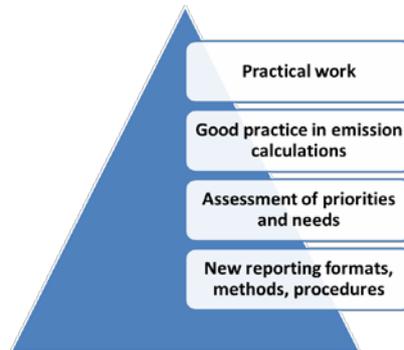


Figure 1

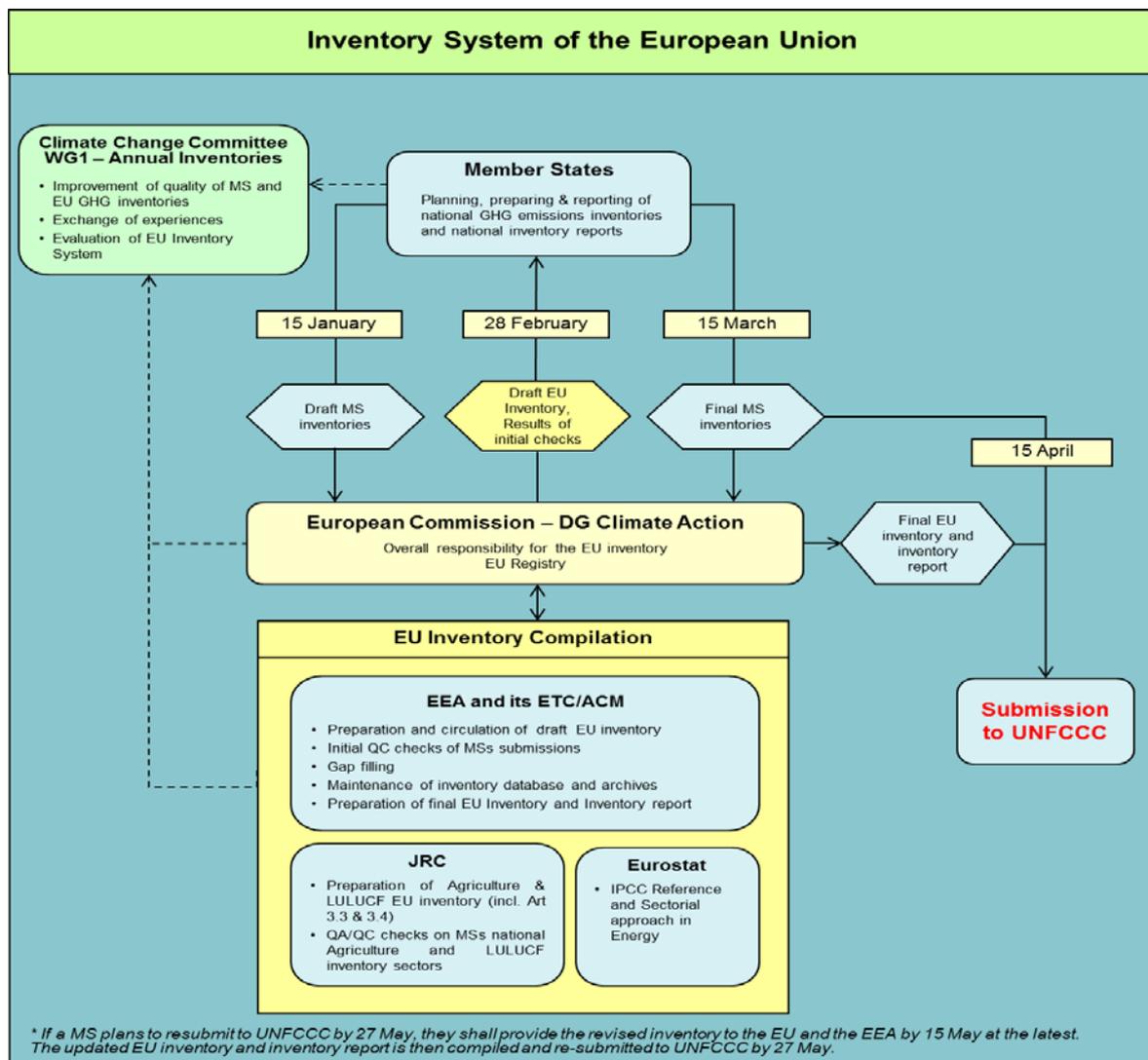
Mandates under the MMR and the UNFCCC – Justin Goodwin

- The EU GHG inventory process was outlined, including the legal basis and the institutional arrangements



- The improvements as regards data and methods were highlighted, including the requirements to use data and methods under the EU ETS Directive, the F-gases regulation, EPRTTR and energy statistics (Article 5).

- The EU inventory system was described, outlining the responsibilities and tasks of the different parties (JRC, Eurostat, DG CLIMA, the EEA and the Member States)
- The Quality Assurance and Quality Control (QA/QC) processes were outlined, including the responsibilities of Member States, DG CLIMA and the EEA (plus ETC/ACM)
- Documentation and Archiving: A presentation was given of the EEA's Central Data Repository (CDR) and the ETC/ACM archive database. The Union Inventory files are also uploaded to the EEA's EIONET Forum (Draft and final Union NIRs, CRF tables, relevant source category files, etc.)
- Examples of QC procedures were outlined in detail including the timelines applied for the regular checks and examples of QA/QC during compilation.
- A key issue is related to EU-ETS reporting and GHG inventories (Transparency of how ETS is reflected (by MS) in the EU inventory, due to confidentiality issues on activity data and emission factors)



- Related EEA products were presented (GHG data viewer; EU ETS data viewer; the EEA publication of the EU GHG inventory).



National Systems Requirements – Justin Goodwin

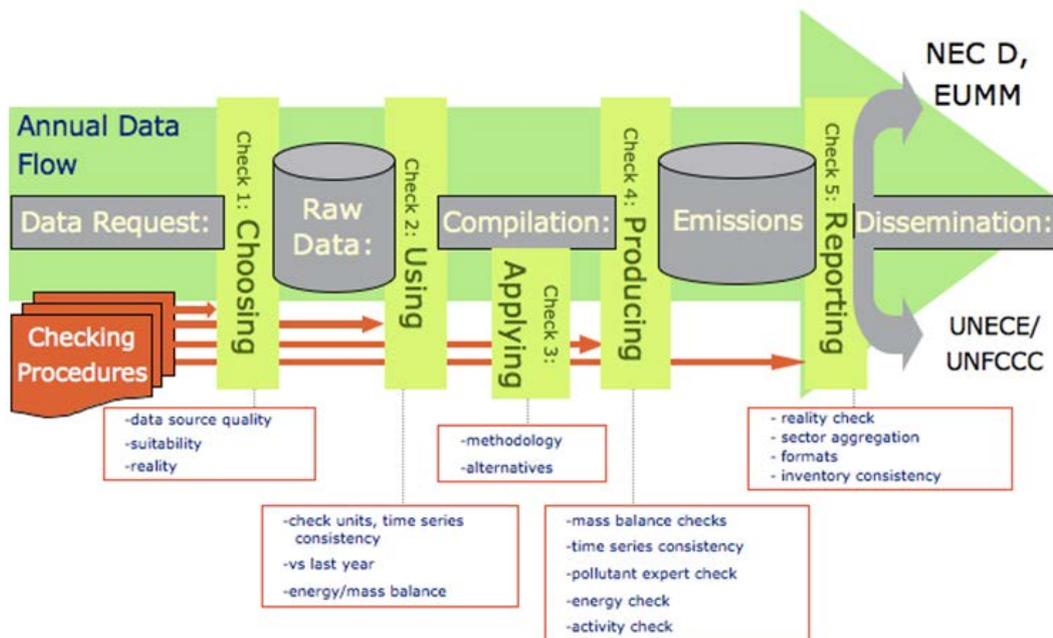
A National System is one of the foundations for MRV (Monitoring, Reporting and Verification). It is a team of organisations (people), available resources and agreed processes and tools focused on efficiency and repeatedly:

- Estimating and reporting GHG emissions and acceptable quality (TCCCA);
- Engaging with external review activities (verification) and the outside worlds;
- Improving estimates and self-evolving (the National system) to fit with governance structures and data suppliers.

The activities that include:

- Collecting data, estimating emissions/removals, reporting and archiving
 - Using appropriate and reliable methods and data (official statistics and country specific emission factors/research);
 - Applying expert judgement;
 - Using tools for analysis, aggregation, QA/QC and archiving;
- Quality and continuous improvement
 - Understanding and continuous improvement;
 - QA/QC plan, quality objectives, implementation and documentation.

The figure below depicts the national system activities:



The National system building blocks are the following:

1. A National Entity: (Responsible for the outputs);
2. Management/Co-ordination (Co-ordination entity: Finding and retaining the resources, skills and tools needed for a good quality GHG inventory; Establish and maintain the institutional, legal and procedural arrangements; Define and allocate specific responsibilities; Ensure sufficient capacity for timely performance of the functions; Archiving);
3. Compilation Expertise (Co-ordinators to organise the work undertake QA/QC and bring things together on time; Sector experts that understand the data and emitting/removal processes; Strong links to national networks of technical experts and data sources for sector/category;
4. Data sources (Data owners and suppliers; National Statistics).

To meet EU Member State NS requirements: “Shall” requirement of Monitoring Mechanism Regulation (MMR):

- 525/2013 Article 5(1): establish, operate and seek to continuously improve national inventory systems. In accordance with UNFCCC requirements 19/CMP.1;
- 525/2013 Article 5(2): ensure access to national data associated with other EU decisions and regulations (Energy, E-PRTR, EU-ETS, F-Gases);
- 749/2015 Articles 3 – 19: Report specific information and formats including descriptions of the National System (Article 6).

-To meet UNFCCC requirements:

- “Shall” requirement for the National System 19/CMP.1 (Kyoto Protocol Parties);
- “Should” requirement for Institutional Arrangements Decision 24/CP.19 (Annex I Parties);
- “Encouraged” to provide information on national circumstances and institutional arrangements relevant to the preparation of the national communications on a continuous basis UNFCCC 2/CP.17 Annex III (Non Annex I Parties).

-To support National Policy and a transition to a low carbon economy:

- Support INDC decisions;
- Engaging stakeholders in action;
- Prioritising action (input to NAMA);
- Highlighting successes.

MMR Reporting requirements include:

- Article 3 General rules for reporting greenhouse gas inventories (CRF, NIR etc.)
- Article 4 Reporting in the National Inventory Report or in an annex to the National Inventory Report Annex I (Options for how to use the NIR)



- Article 5 Processes for reporting (Where to report (EEA CDR)
- Article 6 Reporting on national inventory systems (What to report)
- Article 7 Reporting on consistency of the reported data on air pollutants Annex II
- Article 8 Reporting on recalculations Annex II
- Article 9 Reporting on implementation of recommendations and adjustments Annex IV
- Article 10 Reporting on consistency of reported emissions with data from the emissions trading scheme Annex V
- Article 11 Reporting on consistency of the data reported on fluorinated greenhouse gases
- Article 12 Reporting on consistency with energy data Annex VI
- Article 13 Reporting on changes in descriptions of national inventory systems or registries
- Article 14 Reporting on uncertainty and completeness Annex VII
- Article 16 Reporting on major changes to methodological descriptions Annex VIII
- Article 17 Reporting approximated greenhouse gas inventories
- Article 18 Timescales for cooperation and coordination in preparing the Union greenhouse gas inventory report
- Article 19 Reporting on the determination of the assigned amount (KP)

Workshop discussion points and questions:

- Vision: What do you want to achieve?
- What could work for you and why?
- What wouldn't work for you and why?
- Milestones: Your next steps and priorities?
- What support is needed?

Bosnia and Herzegovina – Ranka Radic

- The administrative structure of BiH is explained and the obligations and achievements under the UNFCCC are highlighted. There is no legal requirement on national systems on state level to prepare GHG inventories. The gaps were highlighted and the most salient ones were elaborated upon (i.e. Lack of horizontal and vertical cooperation and Lack of data (energy balance for BiH in 2013 (for RS in 2011 and FBiH 2013)).
- A list of improvement recommendations was presented including the improvement of statistical data and the establishment of an external working group with experts in different institutions and



sectors for data providing inputs into the GHG inventory work. In addition there is a need to expand financial resources for trainings, research projects in different sectors, projections, establishment of a review system of estimates of GHGs, and the establishment and continuous improvements of a QA/QC system.

Albania – Jonila Haxhillari

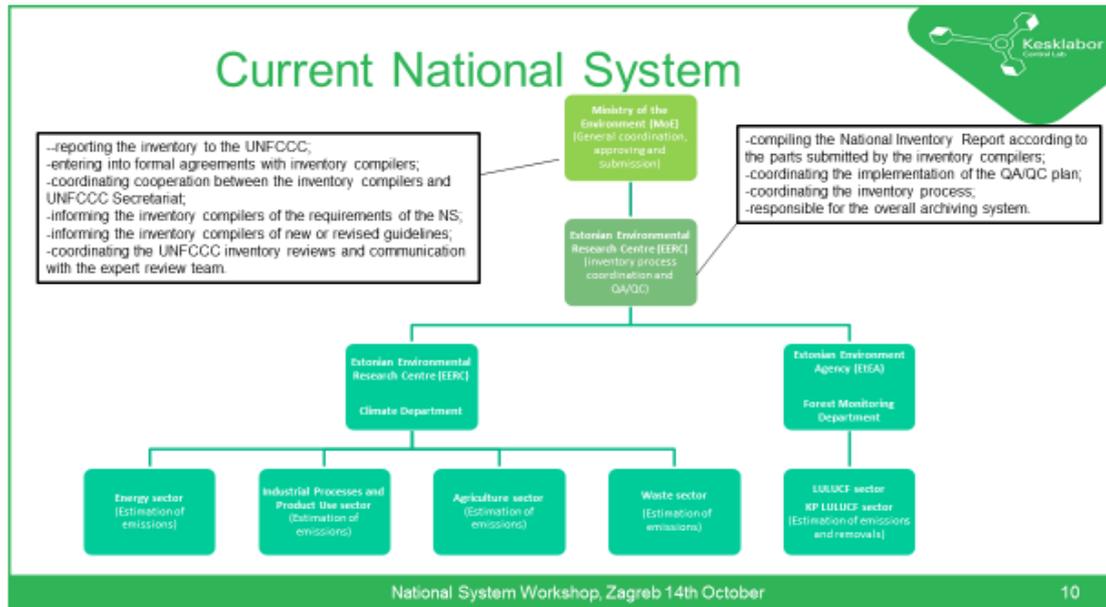
- Albanian Institute of Statistics (INSTAT), different ministries and specialized institutes provide activity data for all sectors as required for the GHG Inventory. The Law No.7687 dated 16.03.1993 “On Statistics” defines INSTAT as the unique central institution in the country under the Council of Ministers, which approves the National Statistical Program, the criteria of the evidences as well as methodological ones, nominations and classifications for production of uniform national statistics underlying the obligations of economic subjects, be they private or public.
- Improvement of Energy Statistics: According to Eurostat, energy balance (consumption side) includes households, service, industry, transport, agriculture and non-energy use sector. The State Statistics Office, INSTAT intends to respond to EU requests for data on energy sub-sectors and other sectors. These data might also serve the inventory and Mitigation Scenarios Analysis
- However longer-term improvements of data collection on the energy sources, including all GHG data are needed. This needed improvement of energy statistics is based on two laws: the Energy Efficiency Law and Renewable Energy Sources (RES) Law especially for energy activity data
- Improvement of other GHG Statistics: The environmental dimensions and climate change in particular, should be mainstreamed to official statistics. In addition there is a need to strengthen the **capacity** of INSTAT to produce high quality basic statistics with standard concepts and classifications. The use of official statistics for scenario development and modelling should be improved and promoted and the role of official statistics in the production of emission inventories should be strengthened

Estonia – National GHG System in Estonia – Merylin Möls

Inventories are produced in collaboration between the MoE, Estonian Environment Agency (EtEA) and EERC (Estonian Environmental research Centre. Initial shortcomings in the period between 2000 until to date related to the status of legal arrangements. In addition there was a lack of quality assurance/quality control plan and lack of an uncertainty analysis and insufficient archiving processes. Estonia, like other East European countries, had many difficulties getting basic data. The availability and reliability of data from different sectors differs, especially for the first years of regained independence from 1991 onward.

The figure below depicts the national system:





Estonia’s QA/QC plan consists of seven parts:

- (1) Production plan;
- (2) Annual meetings;
- (3) QA/QC checks;
- (4) QA results documentation form;
- (5) Archiving structure;
- (6) Response tables to the review process; and
- (7) A list of planned activities and improvements.

The main pathways of data collection were presented.

The strong points of the Estonian system include:

- Multiannual contracts ensure continuous improvement of the inventory;
- Fixed system, strong legal basis (MoE, EtEA);
- Generally well established data collection and accessibility;
- For subcategory 2.F Product Uses as Substitutes for ODS successively more data is derived from electronic registry for fluorinated greenhouse gases.

Weak points:

- Late data flow in some departments makes reaching deadlines sometimes challenging;
- Past data record quality and accessibility;
- Companies need more support to correct reporting;
- Unified data often difficult to disaggregate.



Ideas for improvement:

- Develop a network of knowledge sharing between Baltic GHG inventory experts;
- Implementation of an integrated IT system;
- Peer review with other countries;
- Developing Tier 2 uncertainty estimates.

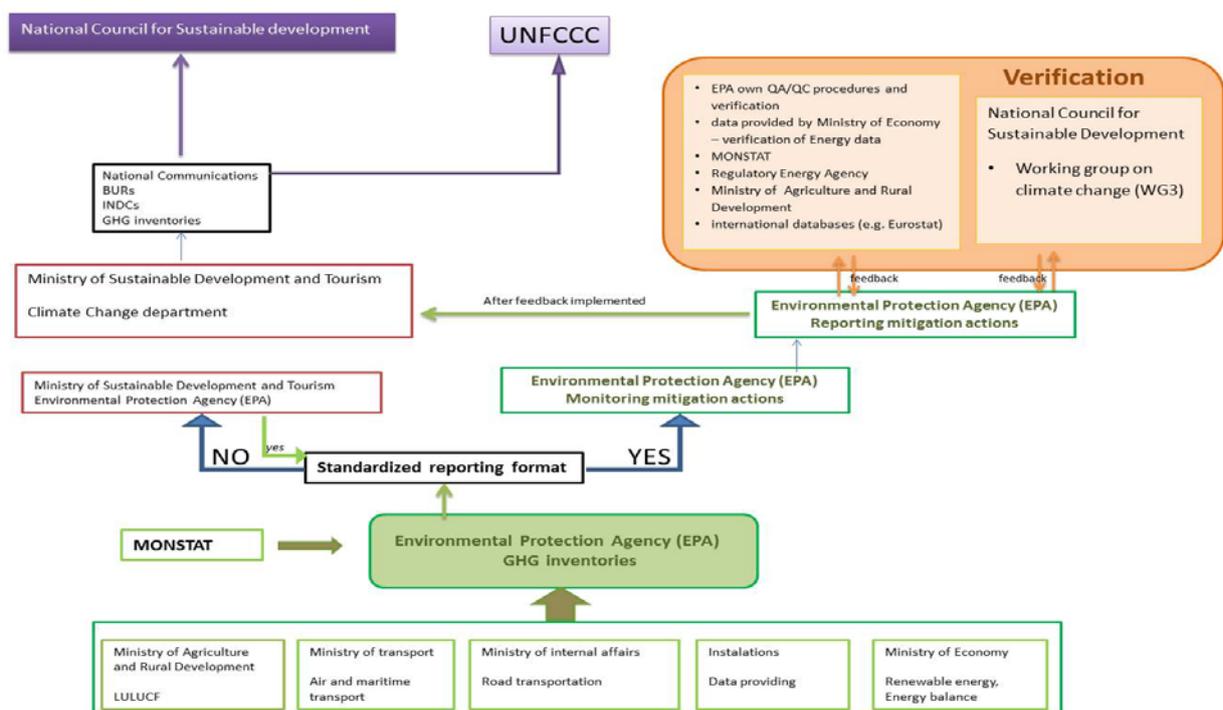
Recommendations to focus primarily on the set up of a system:

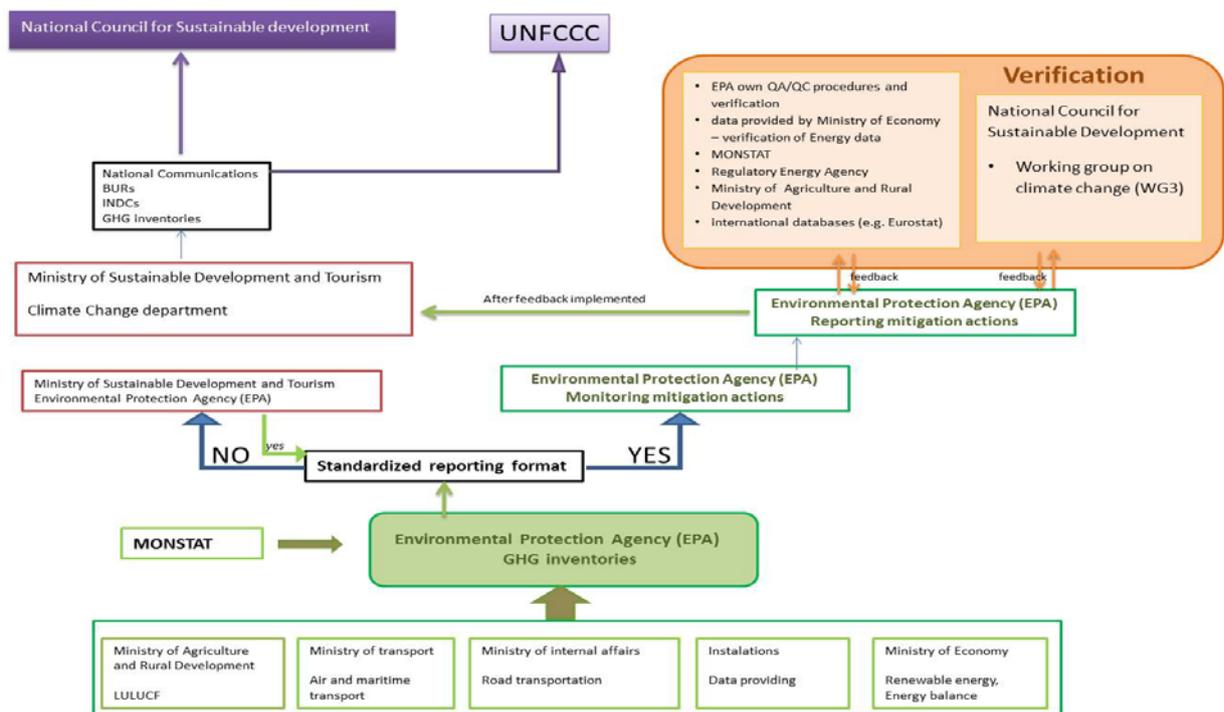
- Focus on establishing binding legal arrangements;
- Establish clearly distributed roles;
- Provide long-term contracts between the institutions involved in the inventory preparation process.

Montenegro – Irena Tadic

A presentation was given of the current GHG inventory process in Montenegro. The EPA is coordinating the GHG inventory. The main issue relate to allocation of human resources to implement the activities. The data providers send data on voluntary basis in an informal format. It is not their official duty. The data for the greenhouse gas inventory are obtained from various sources, specifically for every sector; these data are obtained by the team (3 employees) in EPA, which is responsible for compiling of the greenhouse gas inventory.

A proposal exists for the institutional system of a MRV scheme in Montenegro.





EPA is conducting its own quality control procedures (with external help). The quality control is carried out using data provided by Ministry of Economy as well as Regulatory Energy Agency and also data collected by Ministry of Agriculture and Rural development are used. MONSTAT by itself is having its own verification procedures, which also includes official control from Eurostat. This is an important part of the verification of activity data. As third party for verification the Working Group on Climate Change under National Council of Sustainable Development is used. EPA is obtaining comments from all experts and institutions participating on the verification and the comments are reflected in the final reporting. Since the reporting is complete, it is forwarded to Ministry of Sustainable Development and Tourism (Climate Change Department) which is then responsible for the official reporting to international bodies.

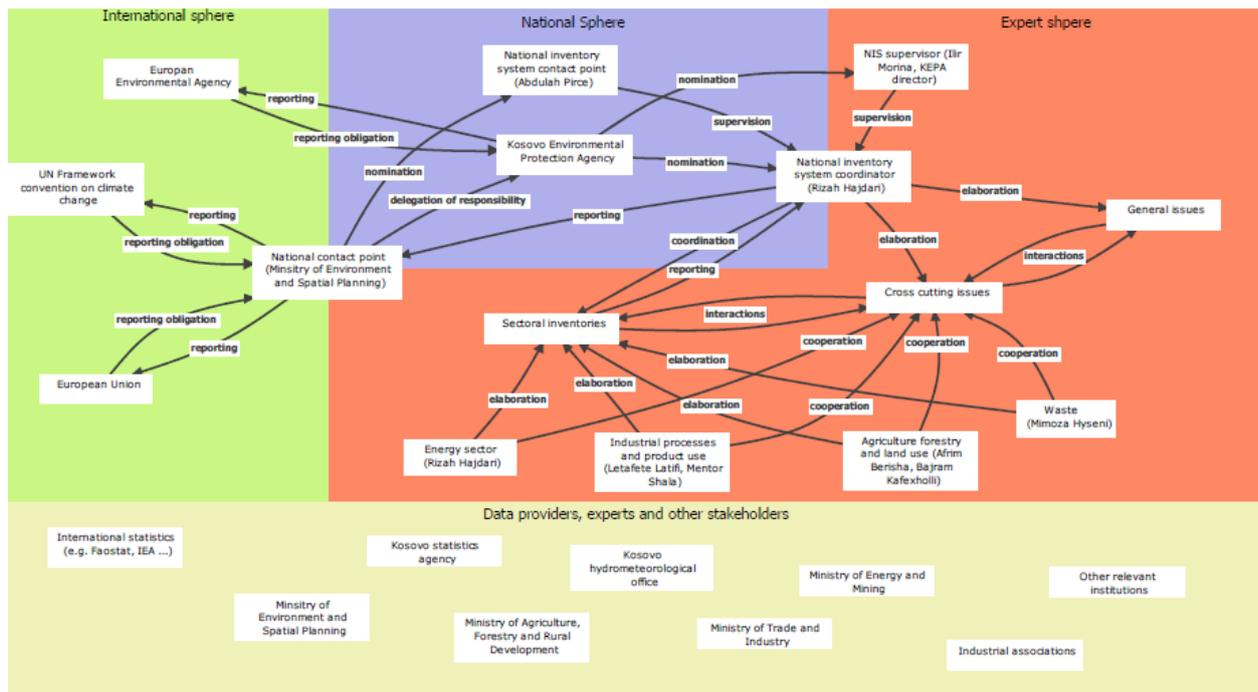
Future challenges relate to the improvement of the system for emissions calculation in the sense that EPA does not depend on the external assistance (to train EPAs staff) and to improve the QA/QC system according to the IPCC 2006 Guidelines.

Kosovo¹ – Riza Hajdari

The figure below indicates the current proposal of the National Inventory System. The main players include

¹ The designation is without prejudice to position on status, and is in line with UNSCR 1244/99 and the ICJ Opinion on the Kosovo declaration of independence.





Strong points: Core team created and capacities have been built on data sources identification, data collection, understanding the IPCC 2006 guidelines; calculations using IPCC 2006 software.

The weak points include the following aspects: The national inventory system has not yet formally been established; there is a need to maintain consistency of work, learning to fill CRF tables. There is still a too heavy reliance on external skills.

Immediate needs relate to consolidating the recent results as regards the development of the national inventory system. Additional work will also be required to develop QA/QC plans and to increase the capacities on calculations estimations (higher tiers, uncertainty assessment).

National System Bulgaria – Detelina Petrova

The legal basis for the Bulgarian National Inventory System is provided in:

- Environmental Protection Law (State Gazette No. 91/25.09.2002; corrected, SG No. 96/2002; last amendment November 2012): Establishes the National Environmental Monitoring System and lists all of its tasks;
- Regulation on the organization and structure of ExEA: Regulates the responsibilities for monitoring of environment as well as the responsibility for preparation of emission inventories.

Agreements have been signed between the Ministry of Environment and the main data provider were signed in 2010:

- National Statistics Institute (February 2010);
- Ministry of Agriculture and Food (March 2010);
- Ministry of Economy and Energy (June 2010);
- Ministry of Internal Affairs/Road Control Department (June 2010).



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The GHG inventory represents a process, covering the following main activities:

- Collect sufficient activity data, process information, and emission factors as are necessary to support the methods selected for estimating anthropogenic GHG emissions by sources and removals by sinks;
- Prepare estimates and ensure that appropriate methods are used to estimate emissions from key source categories;
- Identification key source categories;
- Make a quantitative estimate of inventory uncertainty for each source category and for the inventory in total recalculations of previously submitted estimates of anthropogenic GHG emissions by sources and removals by sinks.
- Compile the national inventory in accordance with Article 7, paragraph 1, and relevant decisions of the COP and/or COP/MOP;
- Implement general inventory QC procedures (tier 1) in accordance with its QA/QC plan following the IPCC good practice guidance;
- Apply category-specific QC procedures (tier 2) for key source categories and for those individual source categories in which significant methodological and/or data revisions have occurred;
- Collection of all data together with emission estimates, where data sources are well documented for future reconstruction of the inventory.

The QA/QC plan is a fundamental element of a QA/QC system. It outlines QA/QC activities that will be implemented and include a scheduled time frame that follows inventory preparation from its initial development through to final reporting in any year and it contains an outline of the processes and



schedule to review all source categories. It is an internal document to organise, plan and implement QA/QC activities.

In order to reproduce the inventory followed the *good practice guidance* is followed for:

- annual documenting and archiving of all information necessary to reproduce inventory
- documenting and archiving of all information relating to the planning, preparation, and management of inventory activities
- reporting a summary and key findings of all implemented QA/QC activities as a supplement to the NIR

National System Slovakia – Janka Semesova

The institutional arrangement includes an Intergovernmental Coordination Committee for climate change policy on the State Secretary level (ICC) and two working groups under the ICC on adaptation and on low-carbon development;

The Department of Climate Change of the Ministry of the Environment is the National Focal Point (NFP) to the UNFCCC. The Slovak Hydro-meteorological Institute is the designated Single National Entity, independent group under responsibility and coordination of the NFP.

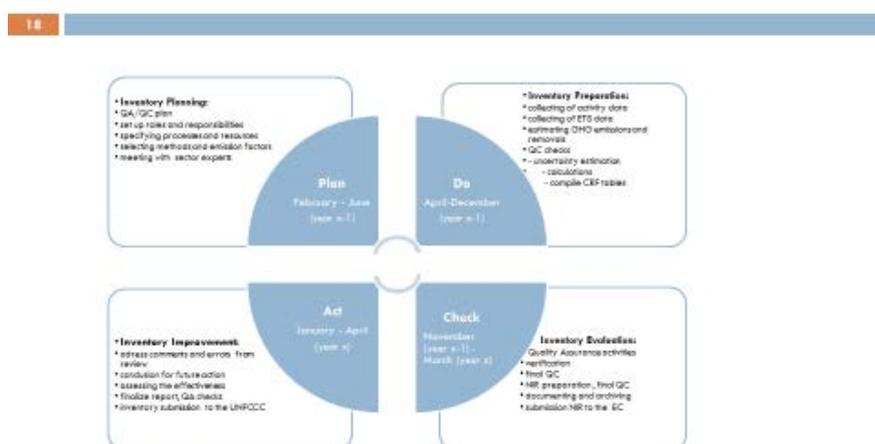
The Statistical Office of the Slovak Republic ensures the bilateral contacts in several parts of data delivering, e.g. energy balance (top down, bottom up), solvents, households, agricultural statistics, industry, transport.

The Ministry of Transport, Building and Regional Development participates with the Transport Research Institute and the Civil Aviation Authority of the Slovak Republic.

The Ministry of Agriculture and Rural Development participates with several background institutions to ensure accounting on AFOLU

The annual cycle is presented below.

INVENTORY ARRANGEMENT



ZAGREB TAIEX workshop, October 14, 2015



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The strengths of the current system are highlighted:

- Higher Governmental support (legislative background mostly driven by the EU legislation);
- More flexibility (more experts involved) = lower vulnerability;
- More capacity (institutions involved) = sustainable system;
- Better knowledge (research institutions);
- Higher sharing of responsibility among ministries.

The weaknesses of the current system are reported to be as follows:

- Different level of engagement of ministries and knowledge of the expert institutions;
- Difficult coordination, very challenging;
- More trainings are necessary (mostly on procedural level);
- Not all institutions are located in the same city;
- Budgetary limitation
- Further improvement needed.

National System Serbia – Ana Repac

The Republic of Serbia has realized in 2010 its 1st National Communication (INC) as a Non Annex I Party to the UNFCCC. This first inventory reported on 1990 and 1998, with 2015 as benchmark for projections. The GEF/UNDP BUR (including the Inventory chapter) is in draft and should be adopted and submitted to the UNFCCC by the end of 2015. At the same time, the Republic of Serbia is currently working on its GHG Inventory for the GEF/UNDP Second National Communication (SNC), which is expected to be published in 2016. The BUR and SNC GHG Inventory was developed by SEPA, and later reviewed and further improved by the Faculty of Mechanical Engineering (University of Belgrade). The Republic of Serbia has the challenging goal to be prepared for the Annex 1 reporting. The SNC and the BUR will report 1990 – 2013 GHG emissions consistent with the IPCC 2006 Guidelines in terms of methodology. Projections and mitigation programme for the period till 2020, 2030 is being prepared by the Faculty of Mechanical Engineering and using relevant model (LEAP model). Long-term framework mitigation strategy by 2020/2030/2050, following the EU Roadmap 2050, will be prepared.

The Ministry of Agriculture and the Environmental Protection is the National Focal Point for UNFCCC, while the inventory preparation is under responsibility of the Serbian Environment Protection Agency (SEPA). Establishment of a National GHG Inventory is required by Article 50 of the Law on Air Protection in order to monitor emissions and removals of greenhouse gases. In accordance with the obligations under this section in the Department of National Register of polluters' sources of the Agency, in 2012 began with the establishment of the National inventory of emissions of greenhouse gases.

Other institutions which are relevant contributors for the GHG Inventories are:



- The Statistical Office of the Republic of Serbia (SORS) which is publishing sectorial statistics for the Republic of Serbia (energy, industry, transport, agriculture, forestry, etc.). It is also in charge of producing the annual Serbian Energy Balance (EB) and reports those data to Eurostat and International Energy Agency (IEA);
- Ministry of Mining and Energy (MME) – Strategy Planning Office: Based on their own survey to energy suppliers and transformation operators, this section of the MME carries out annually a three years energy balance containing data from the previous year, the current year and a forecast for the following year. The Strategy Planning Office is also in charge of the Energy strategy;
- Ministry of Internal Affairs - Police: The Serbian Police is responsible of the vehicle registration and maintain the related database;
- Customs Office;
- Public enterprises.

Under the activity 2.6 of the IPA 2012 project: "Establishment of a monitoring, reporting and verification system necessary for the effective implementation of the EU emissions trading system (EU ETS)", analysis on compliance of National GHG inventory's preparation with the EU and UNFCCC requirements was conducted. Main conclusions are that "even SEPA is already going further than its current requirements (Serbia is non-Annex I), further activities will be necessary to fill in some gaps between the works currently carried out and Annex I countries obligations; Based on recommendations it is needed to:

- Improve the completeness and the transparency in order to fulfil completely the requirements of an Annex I country,
- Develop of a detailed description of the methodologies applied, presenting input data, justification of the parameters' selection, assumption,
- Provide explanations for dips and gaps in the emissions time series for all the calculations realized outside the IPCC Tool,
- Present the planned improvements in the inventory reports.

MAEP initiated the IPA 2013 project: "Establishment of mechanism for the implementation of MMR" . This current MMR twinning project started in May 2015 and will last 24 months. The Project Components are:

- Institutional and procedural arrangements for implementation of MMR and Decision 406/2009 established
- Legal framework for implementation of the Regulation (UE) 525/2013 and the monitoring and reporting requirements of Decision 406/2009/EC established
- Administrative and institutional capacities of the relevant bodies in the field of climate change strengthened



Serbia established a special MMR working group involving all the relevant governmental institutions and stakeholders

National System Turkey – Pelin Buzluk

The Turkish Statistical Institute (TURKSTAT) is the responsible agency for compiling the National Greenhouse Gases Inventory and submitting it to the UNFCCC Secretariat.

- Coordination Board on Climate Change and Air Management (CBCCAM)
- Decision on the setting up of technical working groups and defining the coordinator institutions of working groups: Greenhouse Gas Emission Inventories working group: Turkish Statistical Institute (TURKSTAT) responsible from coordination of the WG.
- The Official Statistics Program (OSP), based on the Statistics Law of Turkey No: 5429

The QA/QC Plan of Turkish GHG Emission Inventory is approved by Coordination Board on Climate Change and Air Management (CBCCAM) in May 2014.

The QA/QC plan and the process of the inventory preparation with starting dates and deadlines are presented, including the relevant institutions.

There are serious capacity issues. In addition it should be considered that in Turkey there are many (more than 1000) small energy production units accounting up to 20% of the total energy production.

Highlights Day 2

Day 2 – Hotel Panorma Zagreb, Zagreb, Croatia, 15 October 2015

National system, The Netherlands: – Harry Vreuls

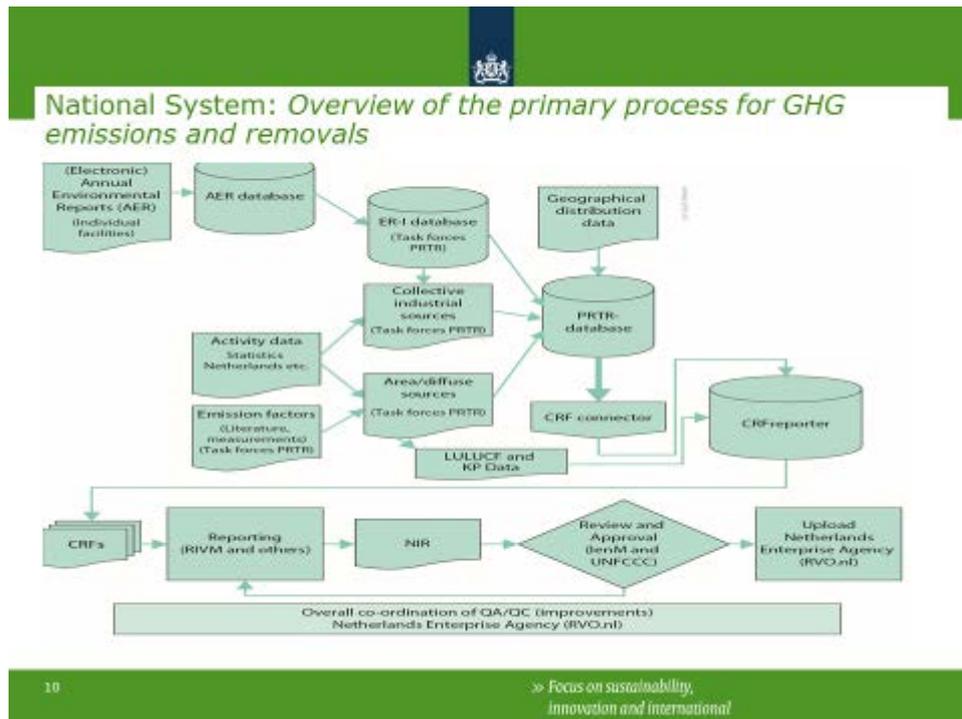
In 2006 a decision was made on the National System: A single National Entity was set up

- Option A: incorporate in the existing structure of the Emissions Registration (ER)
- Option B: a separate organisation

Why a separate organisation? In order to ensure high level of QA/QC for GHG emissions; to have consistent checks on the UNFCCC+KP reporting rules; to improvement program to get the inventory on the requested level; to ensure documentation of the methods for key sources; to counter-balance the scientific improvements in the emission registration.

The organisations involved in the emissions registration work were presented. The system builds on a system that allows for multiple environmental emissions reporting (PRTR, CLRTAP, etc.).





The QA/QC Programme’s overall objective is to ensure that the annual inventories sufficient quality to meet requirements under UNFCCC and EU: Ensure transparency, consistency, comparability, completeness and accuracy (TCCCA).

The QA/QC programme consists of the following elements:

- QA activities
 - General QC procedures (ER)
 - Annual uncertainty analysis (ER)
- QA activities
 - Peer review (contracted experts)
 - Audit (RVO.nl)
 - Data consistency report (ER, RVO.nl, Nea, CBS)
- Archiving, documentation and facilitating reviews
 - Archiving of information on inventory, results QA/QC etc (ER)
- Evaluation and improvement (RVO.nl and ER)
 - Evaluation of inventory process
 - Evaluation of QAQC programme

The procedure for the update of methods and data collection was presented.

Lessons learned during the development of the Netherlands National System were highlighted:

- Keep the number of legal documents as low as possible;



This Project is funded by the European Union



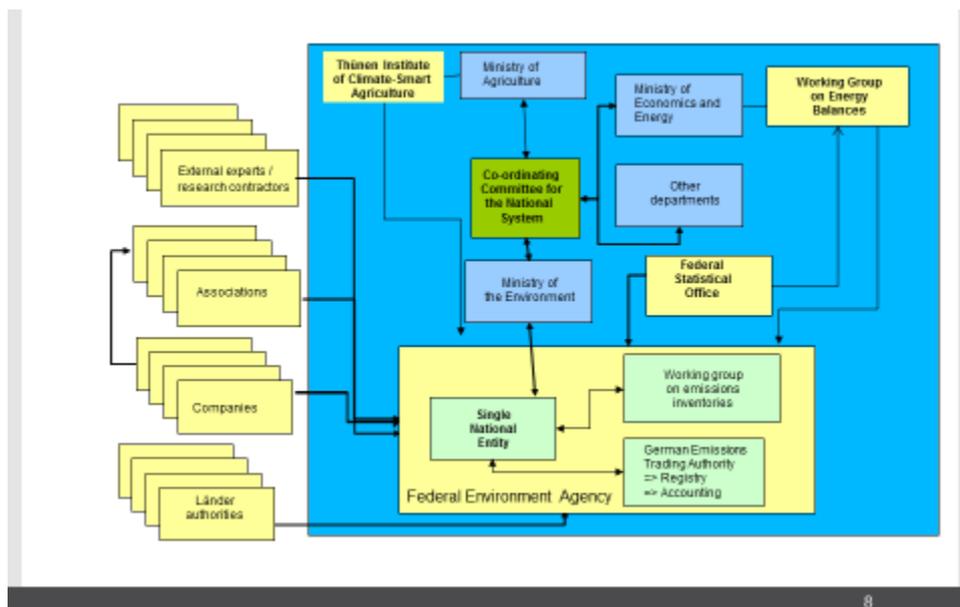
A project implemented by Human Dynamics Consortium

- It is difficult for experts to follow proposed changes of methods to estimate impact on uncertainty and expected change in emissions;
- Ex-ante description of the update of a method to use to estimate the emissions is often not implemented and in practise ex-post update of the descriptions;
- Involvement of Ministries in planned changes in methods improves the decisions making process of these improvements and good preparation for expected change of historical emissions for the Ministries.

National system, Germany: – Michael Strogies

In Germany the system is based on a single system that allows for multiple reporting (UNFCCC, MMR, CLRTAP; UNEP, etc.)

The organigram depicts the German National System on Emissions (NaSE): Networking is essential for a successful inventory building work.



Different levels can be identified:

- Level 1A: The single National Entity
- Level 1B: The Federal Environmental Agency
- Level 2: The coordination committee of the Federal Ministries
- Level 3: Co-operation agreements with industry



Level 1A: The single National Entity has different responsibilities: It coordinates the National System, the QA/QC process; Database Management and Report compilation. It also provides capacity building (within UBA, national and international). The work is source category oriented: Energy (stat., mobile and fugitives); Industrial processes + solvent use (split over 4 colleagues); Agriculture + LULUCF (external cooperation); Waste (-water and disposal management). The Single National Entity is in fact the National Co-ordinating agency and it incorporates the expertise and knowledge from various experts from the Level 1B, which is the entire Federal Environment Agency. It receives data and information from 16 sections in 8 departments from all 5 divisions of the agency.

Level 2 is the coordination committee of the Federal Ministries. Their main task relates to establishing agreements to enable the provision of confidential data; determine “new rules” in data handling (Transfer of responsibility for statistical confidentiality to the SNE); definition of data requirements of the Federal Environment Agency; definition of the QA / QS System to be in place at the federal statistical office and the update of the data requirements on an annual basis.

On Level 3 co-operation is secured with Business Association and enterprises mainly in the Industrial Processes sector though case specific co-operation agreements. This enables reporting according to Tier 3 methods.

The specific tasks and responsibilities of the Single National Entity (Level 1A) are then explained/highlighted:

- Serve as Central Focal Point for ALL inventory and reporting issues;
- Assure and coordinate information and data flow;
- Set up Framework of inventory planning ;
- Determine standards;
- Assure Central documentation;
- Assure Central archiving;
- Initiate and assure inventory improvement (QA/QC);
- Coordinate inventory issues for review;
- Submission after governmental consultation;
- Capacity building activities;
- Link between climate and clean air policy;

Recommendations for developing a national system:

- Just go for it and start working! It’s an iterative process;
- Ensure there is commitment from the Government!
- Pay attention to national circumstances;



- Involve as far as possible existing institutions and expertise;
- Try to Fix sustainable cooperation and responsibilities!
- Create an annual routine (time line, responsibilities...);
- Stepwise approach:
 - be complete → appropriate methods → improve quality
- Develop an improvement plan (split tasks to short-, medium- and long- term)
- Use international expertise: reviews, audits, projects, etc.
- Connect your work to national strategies (energy, clean air... projections).

National System Croatia – Vlatka Palcic, Tatjana Obucina

The Ministry of Environmental and Nature Protection (MENP) is the central national authority responsible for maintaining the National System. MENP is a national focal point for the UNFCCC, with overall responsibility for functioning of the National System such as:

- communication with the UNFCCC, EU;
- control of methodology for emission and greenhouse gas removal calculations;
- approval of the GHG Inventory Report;
- submission to UNFCCC etc.

The Croatian Agency for the Environment and Nature (CAEN) is responsible for:

- organization of the GHG Inventory preparation;
- collection of data;
- development of QA/QC plan;
- archiving of all documents used for inventory planning and preparation;
- QA/QC procedure;
- selection of Authorized Institution. The preparation of inventory itself is entrusted to Authorized Institution which is elected for three year period by public tendering.

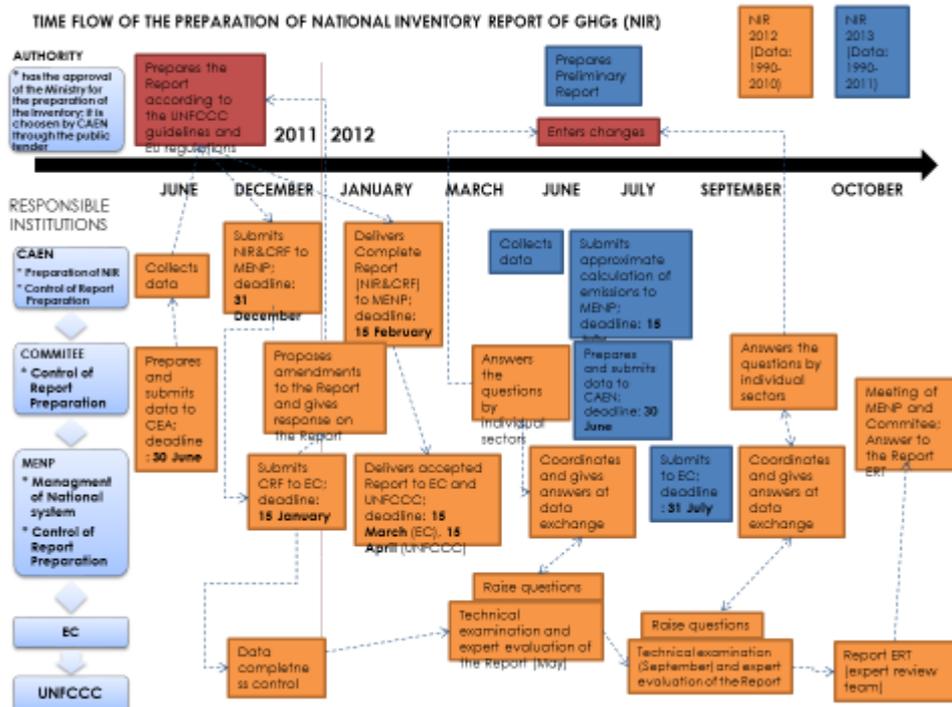
The EU Legal framework

- **Regulation (EU) No 525/2013** of the European Parliament and of the Council of 21 May 2013 on a mechanism for monitoring and reporting greenhouse gas emissions and for reporting other information at national and Union level relevant to climate change and repealing Decision No 280/2004/EC.



- **Decision No 529/2013/EU** of the European Parliament and of the Council on accounting rules on greenhouse gas emissions and removals resulting from activities relating to land use, land-use change and forestry and on information concerning actions relating to those activities.
- **Decision No 406/2009/EC** of the European Parliament and of the Council on the effort of Member States to reduce their greenhouse gas emissions to meet the Community's greenhouse gas emission reduction commitments up to 2020.

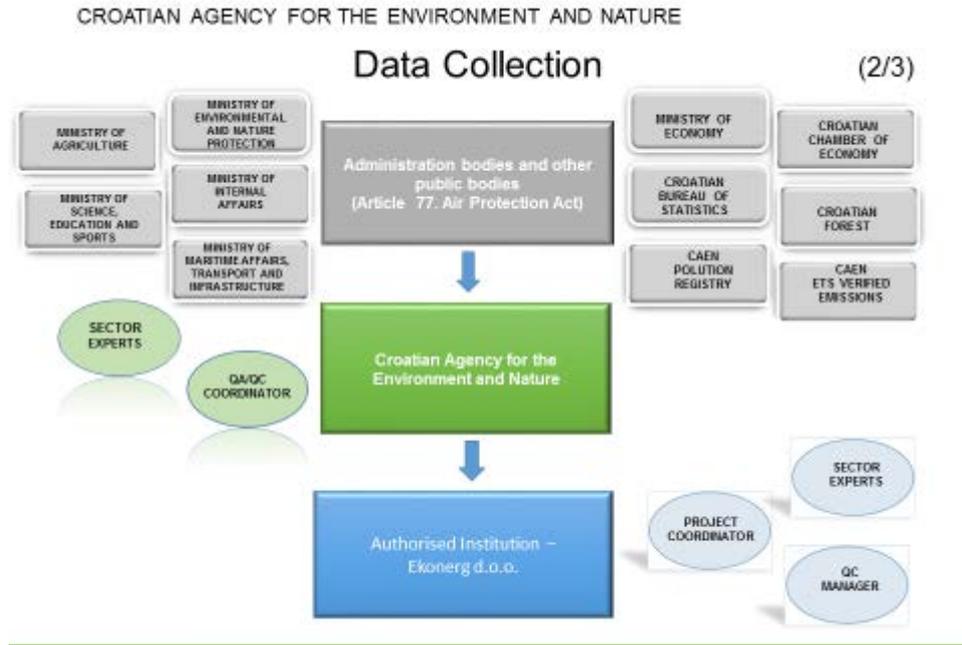
The flow of the preparation of the National Inventory Report is presented below:



The Croatian Agency for the Environment and Nature (CAEN) is responsible for data collection. The main document for data collection is the Annual data Collection Plan (ADCP). The Annual data Collection Plan (ADCP) is made for each sector and it contains source categories, activity, activity data, data source and competent authority. This plan prepared by the Authorized Institution in collaboration with the Agency and the Ministry and it is published on the official website of the Ministry and Agency.

Article 77 of the Air Protection Act regulates the timeliness and completeness of requirements that the state administration bodies and other public bodies which collect and/or hold data on activities according to sectors, in which greenhouse gas emissions are emitted or removed, and which data are required for producing this report *should deliver* such data to the Agency. The data should be delivered yearly free of charge, taking in consider deadlines prescribed by this Act and the scope and format published by the Ministry on its website (ADCP).





The inventory improvement is a never-ending process – improving is imperative. The improvement plan is based on the results coming from the EU and the UNFCCC review.

The strengths of the current system:

- established national system with all legal and institutional arrangements;
- established Committee for national system;
- financial means for necessary researches are available from auctioning revenues;
- Authorized Institution elected for three year period by public tender;
- good cooperation established with research institutions.

Weaknesses of the current system

- insufficient number of experts in public institutions;
- frequent changes of expert in public institutions;
- long period needed for obtaining of necessary knowledge to be inventory experts.

National System United Kingdom – Steve Forden

The structure of the national system is outlined in below organigram.

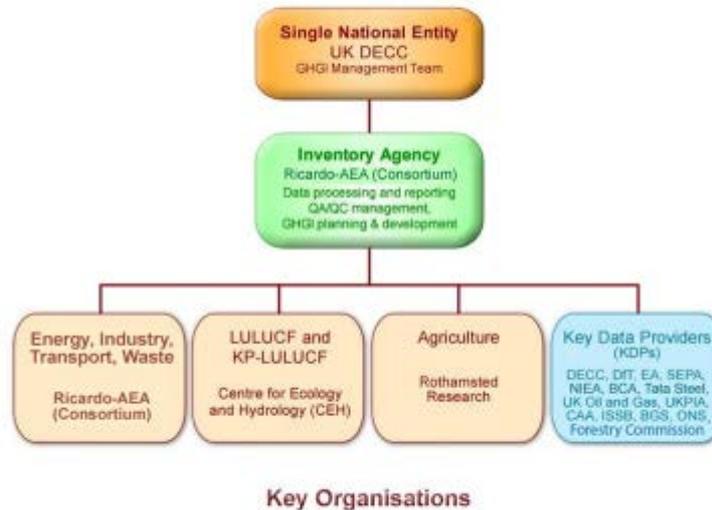


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Structure of the National System



3 UK National System – 15th October 2015

DECC is the Single National Entity and has ultimate responsibility for the Inventory

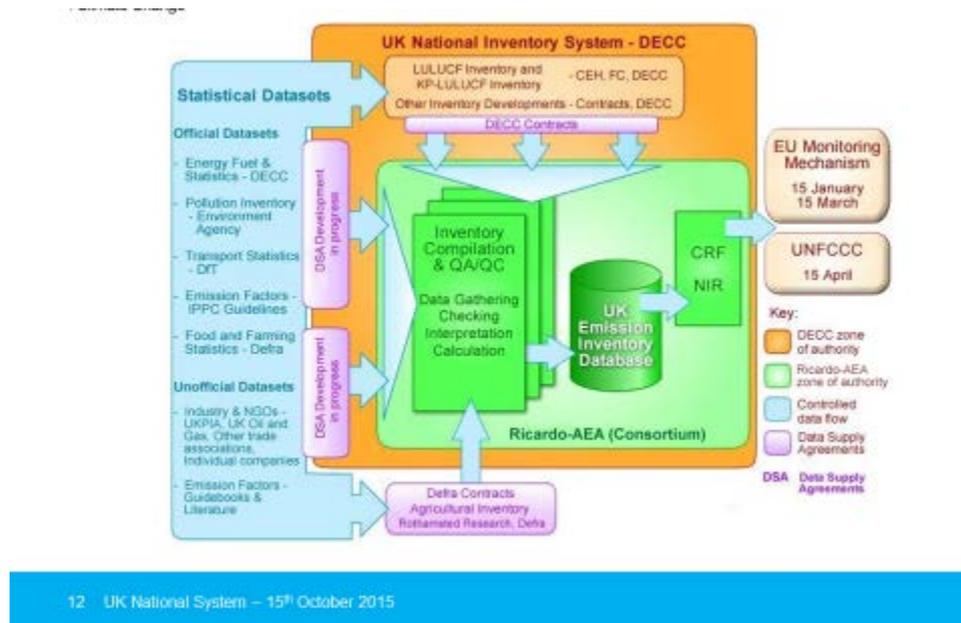
The GHG Inventory team:

- Manages Inventory contract (and verification contract);
- Represents UK at international level;
- Liaises with internal (Carbon Budgets, International Climate Change) and external (public, academia, industry) stakeholders;
- Produces National Statistics and non CO2 GHG projections.

In addition to the above structure there is a cross cutting National Inventory Steering Committee established to help ensure UK conforms to international obligations for producing a GHG Inventory. This is a cross-Government body tasked with the official consideration and approval of the Inventory prior to submission to the UNFCCC. Its responsibilities are:

- Review the Inventory (and recalculations);
- Respond to issues raised through the UNFCCC review process;
- Facilitate better communication between stakeholders;
- Agree priorities for the Inventory Improvement Programme;
- Ensure that the Inventory meets standards of quality, accuracy and completeness;

The flowchart below shows how it works to produce an inventory.



Key data providers have a formalised role within the NIS, with defined responsibilities:

- Delivery of data in appropriate format in sufficient time (including QC);
- Assessment of their own data acquisition, reporting and QC systems;
- Identification of organisational developments required to meet changing NIS requirements.

The National Inventory System provides reassurances about data confidentiality but not absolute guarantees.

The software tools applied are predominantly reliant on excel/access but it is currently moving to a MySQL platform which is more stable, has larger storage capacity, better version control and increased functionality for further improvements.

The core procedures for the QC involve:

- A core database (NAEI database) of AD and EF
 - Basis of all reporting
 - Fully transparent, referenced and automated (to avoid transcription errors)
- Data extraction checking routines and procedures
 - Input/output checks for core data
 - CEH and Rothamsted data
 - Mass/Energy balances, DUKES
 - Key UK sources and models
 - Data exported (e.g. to CRF) then checked against direct database output totals



Good points:

- Because the contract to the Inventory Agency lasts for 3-5 years, this forces a regular review of the National System;
- Easy access to expertise that does not exist within Government: Private Company has access to experts who can devote part of their time to the Inventory – leads to efficiency savings. As the day to day work is done by third party, Government has more resources to devote to important related activities.

The drawbacks:

- Contracting the work out introduces risks during handover to new Inventory Agency. Delays due to need to follow government procurement rules (these would exist regardless but are enhanced);
- Project management challenges of managing contract with private sector and academic institutions;
- Extra complexity in management.

National System Ireland – Bernard Hyde

The single National Entity is the EPA:

- Establish Institutional and legal arrangements;
- Review before submission (Board of the EPA via the Programme Manager of the Climate Resource and Research Programme in OCLR).

The Inventory Agency: (EPA/OCLR – operational office CRRP)

- Improvements prioritisation (KCA/uncertainties) and implementation
 - Internal;
 - External peer review;
 - EU (EU MMR);
 - UNFCCC;
- Scheduling tasks and co-ordinating updates;
- Drafting/Updating MoUs or specifying contracts for delivery;
- Data gathering from data suppliers (e.g. see MoUs);
- Checking & quality assurance (Reviews) (see QA/QC);
- Compilation of initial and updated versions for submission to EU MMR & UNFCCC;
- Sign-off by the QA/QC manager/inventory manager;



- Dissemination of GHG information;
- Management and archiving of data and documentation;

Data providers & contractors

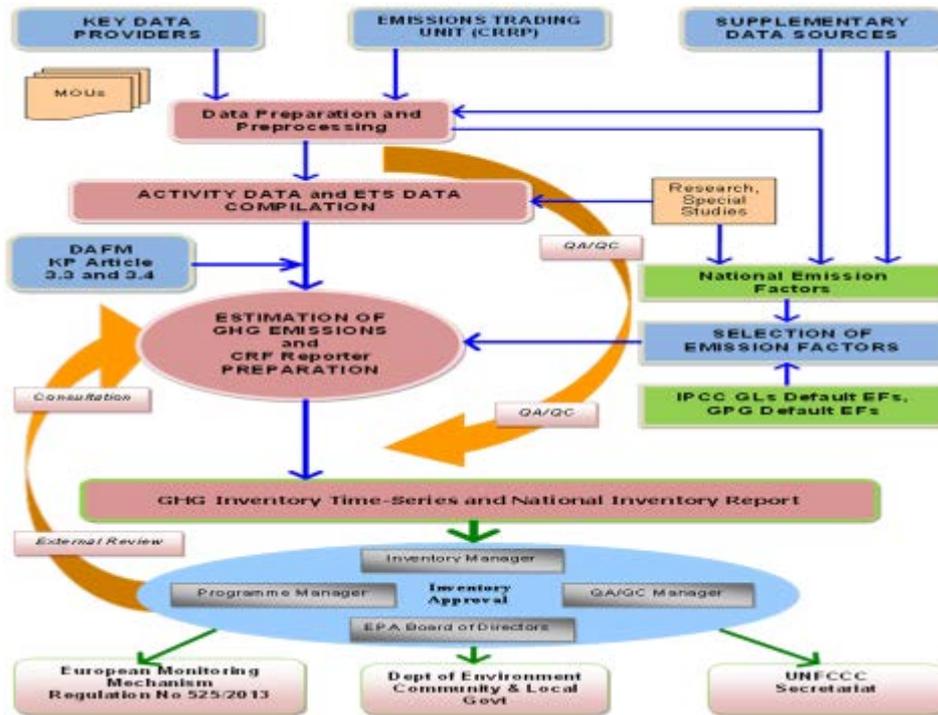
- Delivery of updates and new estimates to required time and quality in appropriate formats and with documentation and accompanying information (QA/QC and uncertainties)
- Management of own data gathering in consultation with inventory agency.
- Identification of NIS needs (new agreements, data suppliers).
- Respond to questions from government or review teams

Arrangements for data flow into the Inventory Agency includes contracted experts with specification for CRF and NIR contributions

- Forest lands for Convention reporting and KP Article 3.3 reporting are prepared under contract to Department of Agriculture, Food and Marine (DAFM) and supplied from DAFM to the Inventory Agency (OCLR) under a MoU (CARBWARE)
- Other Convention LULUCF categories compiled by research contracted directly to the Inventory Agency (OCLR)

Memoranda of Understanding (MOU) are prepared between key data providers ↔ inventory agency (OCLR). It sets out scope, timing and quality (checking, quality assurance, uncertainties and documentation) of the inputs in accordance with the guidelines for national systems.





Data management is currently Microsoft Excel based. Activity data stored in Source Data files and linked to calculation sheets. Emissions estimated at lowest possible level of disaggregation

The general QA/QC management activities were presented in detail, including the steps towards an improvement plan and annual review.

The good points:

- EPA has the dual responsibilities of being the single national entity and the inventory agency;
- System is almost ten years old – well established;
- Small team – experience in all sectors and across pollutants;
- Small number of key data providers – good relationships;
- Inventory experience benefits the projections.

The bad points:

- Small team – lack of sector specific focus, timeliness, difficult to implement substantial changes, institutional knowledge;
- Currently require external consultants in emission estimation and QAQC;
- Time series – 25 years in inventory, projections to 2035, possibility of errors;
- Projections and PAMs systems are separate.



Introduction to Break Out Group Work 1: Management and Coordination– Justin Goodwin/Imre Csikós

Assumption for the exercise:

1. Long Term Goal (5-10 years) of high “quality” (TCCCA) MMR reporting
 - GHG inventories, Projections, Mitigation Policies (PAMs) and Measures and Adaptation
2. Countries are given full political support to propose a National GHG inventory System which:
 - Focuses on MMR requirements on GHG inventories (Article 7 MMR) and ensure consistency with the following EU related reporting streams:
 - EU Emissions Trading: (Facilities/Installations GHGs);
 - E-PRTR: Facilities for air, water and land);
 - National Emissions Ceilings and CLRTAP (Air Pollution Emissions);
 - F-Gas reporting;
 - EU energy data reporting (National Energy balances);
 - Links to MMR Projections, Mitigation PAMS and Adaptation.

Working group Task:

1. Design management structures and
2. present a set of short term goals and barriers for establishing the National GHG inventory System.

The following groups were formed: Kosovo*, Albania, Bosnia and Herzegovina, Serbia, and Montenegro. Croatian and Turkish participants (representing so called Annex I countries) supported the different break out groups. Annex III highlights the results of this exercise for each break out group.

Highlights Day 3

Break Out Group Work 2: Management and Coordination– Justin Goodwin/Imre Csikós

Who would make up your ideal compilation team and why?

- Manager/Co-ordinator
- Sector leaders: Energy, IPPU, LULUCF, Agriculture, Waste
- Data suppliers



Management: Manager/Co-ordinator	
<i>Responsibilities</i>	<i>Attributes</i>
<ul style="list-style-type: none"> • Designing & overall delivery of the GHG inventory estimates; (for final sign off by the SNE); • Possibly: Secretariat to the Steering Committee providing material and insights to the SC; • Co-ordination with the SNE to maintain & improve the functioning of the National Inventory System (NIS) including resources, data supply, expertise and stakeholder engagement; • Support the SNE in selecting & inspiring the sectoral expertise needed for the GHG inventory compilation and regular review; • Managing the Improvement Plan and informing the SNE and SC of priorities in relation to the improvement of quality and feedback from reviews; • Manage the scheduling of tasks and responsibilities for delivery of GHG inventory data on time and to the required level of quality. • Elaborate and maintain and communicate a QA/QC plan including defining QA/QC requirements for sectoral experts and data providers and implementation of general QA/QC activities to ensure quality of the GHG outputs; • Ensuring that the requirements of the QA/QC plan are implemented and keeping documented evidence; • Manage data supply and contribute the drafting of technical schedules to Data Supply Agreements and Memorandum of Understandings between the SNE and data provider; • Data management including data acquisition, processing, compilation, checking and storage of data and descriptions (archiving) and delivery of GHG reports and datasets to time and quality. 	<ul style="list-style-type: none"> • Good project/programme management; • Understanding of what the Ministry/SNE/NFP wants • Science/engineering background with an understanding of research approaches and quality management and continuous improvement; • Interest and ability to analyse and manipulate data (in spreadsheets, databases); • Ability to attract and draw in expertise and build & keep teams; • Good communication skills; • Authorised to handle confidential data and require suitable training and security clearances.



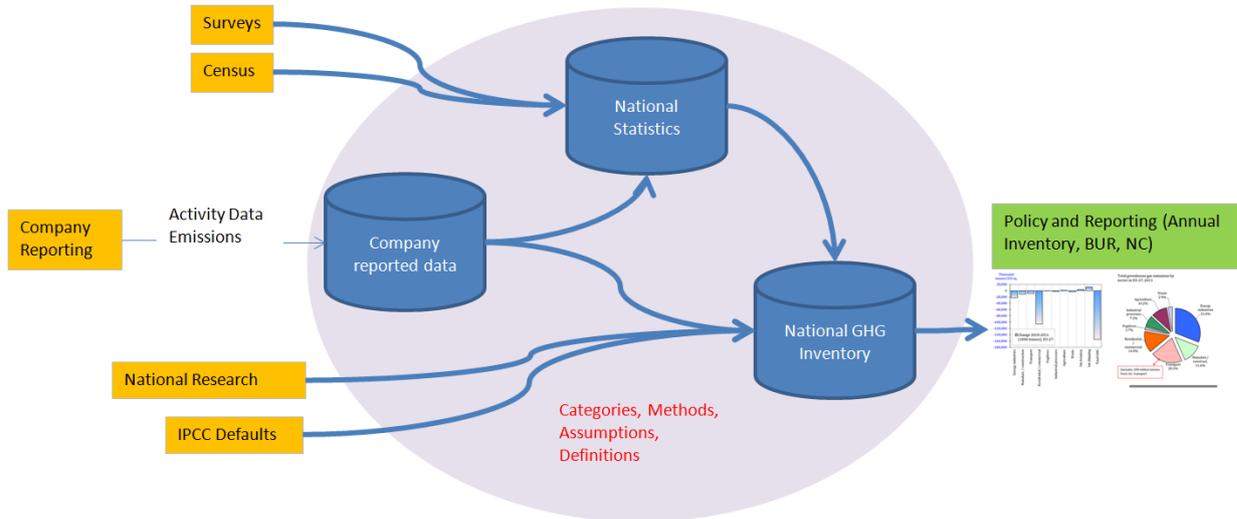
Sector Experts	
<i>Responsibilities</i>	<i>Attributes</i>
<ul style="list-style-type: none"> Producing GHG estimates to the timescales agreed of an agreed quality (TCCCA) using appropriate methods data sources and assumptions; Providing transparent descriptions in underlying calculation files and GHG inventory reports of methods, data sources and assumptions; Contributing to the prioritisation of improvements lead by the manager. Understanding and communicating the level of uncertainty in the estimates to enable the GHG management team and the SNE to prioritise improvements; Implementing agreed improvements & documenting changes and justification for improvements; Applying sector specific QA/QC; Supporting any peer review activities with clarifications of methods, data sources and assumptions used for GHG estimates; Providing input on data requirements for the drafting of any Data Supply Agreements being developed by the SNE and GHG management team; Contributing to efficient data management and the archive by providing all underlying material for a transparent archive of GHG estimates. 	<ul style="list-style-type: none"> Able to work hands on with data (statistics and research) to derive estimates of GHG to suitable quality (according to IPCC guidance). Can work well with spreadsheets/databases and statistical approaches. A science background is helpful (e.g. engineers, chemists, physicists) Understanding of mass balances, research approaches, QA/QC, Organised & methodical. Understanding of energy, industrial, agricultural and/or waste management processes (& ideally IPCC methods). A good understanding of the local datasets and data suppliers. Existing relationships with data suppliers. Authorised to handle confidential data can be an asset. Eager to learn. Can work in a team. Has potential to mentor. AP estimation experience.



Data suppliers	
<i>Responsibilities</i>	<i>Attributes</i>
<ul style="list-style-type: none"> • Supply data to agreed scope, format and timeframe. • Provision of transparent background material describing data sources, methods and assumptions used for data provided; • Highlighting confidential and access should be restricted; • Communicate the level of uncertainty to enable the GHG management team and the SNE undertake uncertainty analysis and prioritise improvements; • Make individuals who provided the data available for Sector Experts to clarify issues if needed; • Making suggestions for future improvements needed including estimates of effort and data needs; • Supporting any peer review activities with clarifications of methods, data sources and assumptions used for GHG estimates; • QA/QC of data, prior to submission to the GHG inventory, to ensure quality; • Attendance at Steering Committee meetings where relevant and appropriate; • Notifying the National System of change when data is due to change/be updated or planned to be discontinued 	<ul style="list-style-type: none"> • We cannot influence or change these.... • GHG team has to adapt!! <ul style="list-style-type: none"> ○ Charm ○ Challenge ○ Add value



Managing the dataflow



- Good quality company reporting with Activity Data (AD) is the king!
- Get ahead of confidentiality issues by setting up agreements that are trusted to handle confidential data and aggregate it.
- Able to specify data requirements for national statistics (e.g. energy balance, traffic and transport, agriculture).
- Able to build data supply agreements between departments;
- Use company reporting opportunities to improve quality (e.g. Air Pollution, C trading, NAMAs, CDM projects)

Break Out Group Work 2: Example Content of a Data Supply Agreement/Memorandum of Understanding

Three break out groups worked on the design of a template for a Data Sharing/Supply Agreement/Memorandum of Understanding that would work for the GHG inventory data collection and data provider. Hereunder an example is provided of the main paragraphs of such an agreement to provide data to the GHG inventory.

High level paragraphs about the agreement to provide data to the GHG inventory

- Background to the agreement
- Who it is between
- How it is executed (the department/people responsible and deadlines for data provision)
- Any exit clauses
- Review of agreement clauses (timing and type of review)
- Communication of changes in data and/or requirements clauses
- Explanation of penalties (if applicable)
- Etc....

Signatures

Technical Annex 1: Data (section/table per dataset)

1. Data units (e.g. Gg emissions and activity data (kg/Mth, GWh etc)
2. Years (timeseries)
3. Categorisation (IPCC categories e.g. 1A1a Power production, 2A1 Cement Production etc. and fuels e.g. coal, gas oil, natural gas etc.)
4. Geographical scope (e.g. country as a whole, selected large industrial processes or specific regions)
5. Expiration (e.g. data update dates)
6. Descriptions of methods, assumptions, data sources, QA/QC and uncertainties

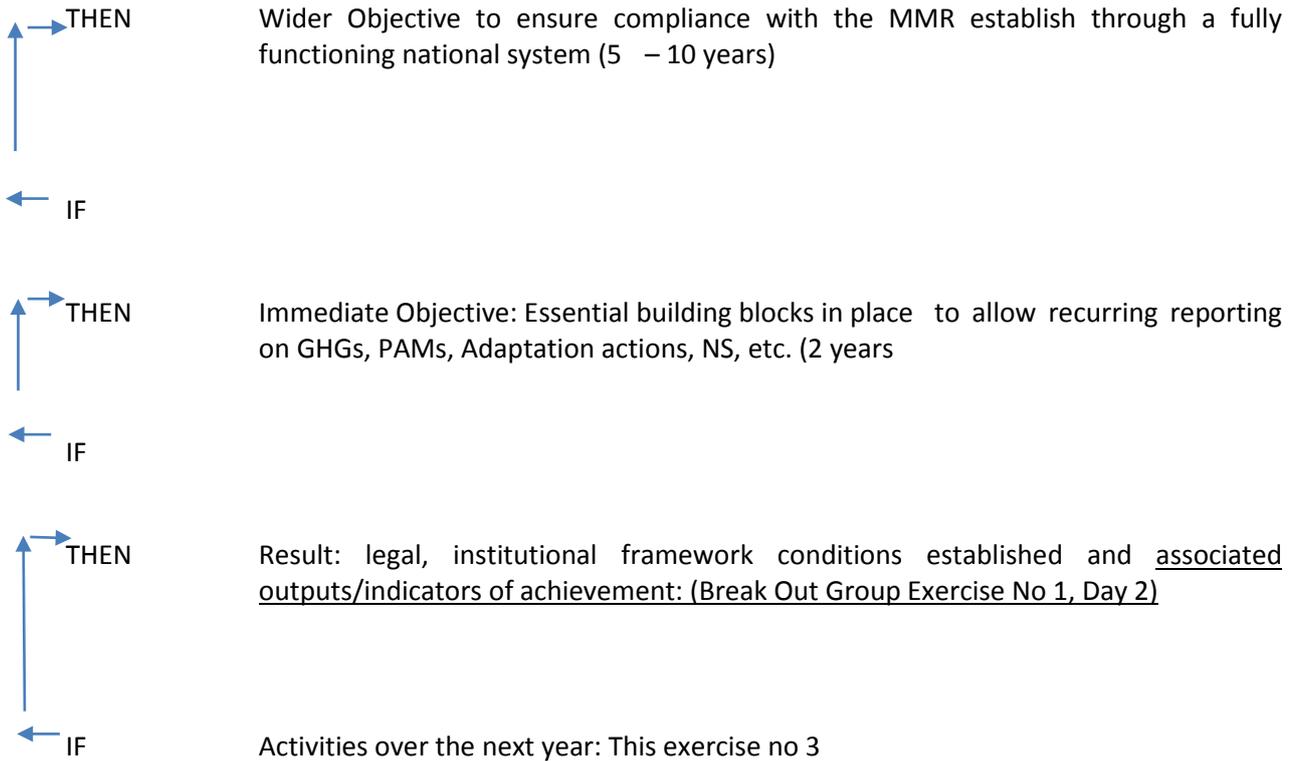
Technical Annex 2: Data format

1. For example, data to be supplied in spreadsheet according to structure X and emailed to GHG management team and Sector Expert
2. For example, documentation to be provided in word or PDF format and emailed to GHG management team and Sector Expert

Break Out Group Work 3: Short term planning

The final break-out group was dedicated to defining the short term (next 2 years activities) that would achieve the defined outputs as per break out group 1.





The results of the working groups resulted in the definition of the following homework task:

1. Please revisit the country **outputs/indicators of achievement** as per Annex III. Are you still happy with them? If not please redefine
2. We receive a modest budget for the next 2 years to deliver output. Which activities I will need to implement (possibly in sequential order) to achieve identified outputs
3. Fill the final results into the following log frame matrix (only coloured boxes to be filled)

Wider objective	Indicator achievement	of	Sources of information	Assumptions/Risks
To ensure compliance with the MMR establish through a fully functioning national system (5 – 10 years)				
Immediate objective	Indicator achievement	of	Sources of information	Assumptions/Risks
Essential building blocks in place to allow recurring reporting on GHGs, PAMs, Adaptation actions, NS, etc.				
Result	Outputs/ Indicator achievement	of	Sources of information	Assumptions/Risks



legal, framework established	institutional conditions	PLEASE FILL	PLEASE FILL	PLEASE FILL
Activities		Means (Budget required and/or manpower required)		
PLEASE FILL 1. Xyz 2. Xyz 3. Xyz 4		PLEASE FILL		



V. Evaluation

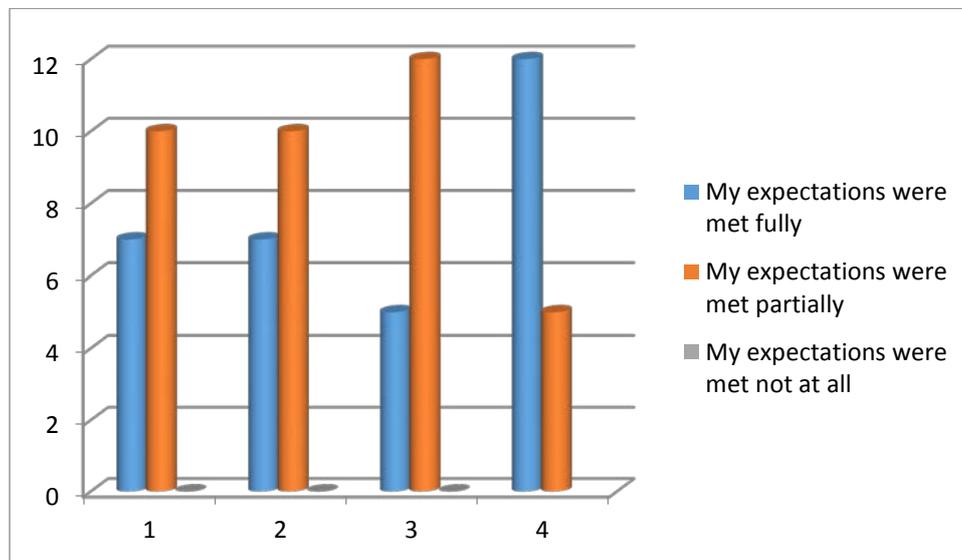
Reference is made to Annex IV for the detailed evaluation

In the evaluation of the workshop a two third majority of participants indicated that their expectations were partially met in the areas of improved ability to establish national systems for GHG estimations. On the other hand a two third majority also mentioned that the workshop managed to identify priorities for country specific short term and long term GHG inventory improvements.

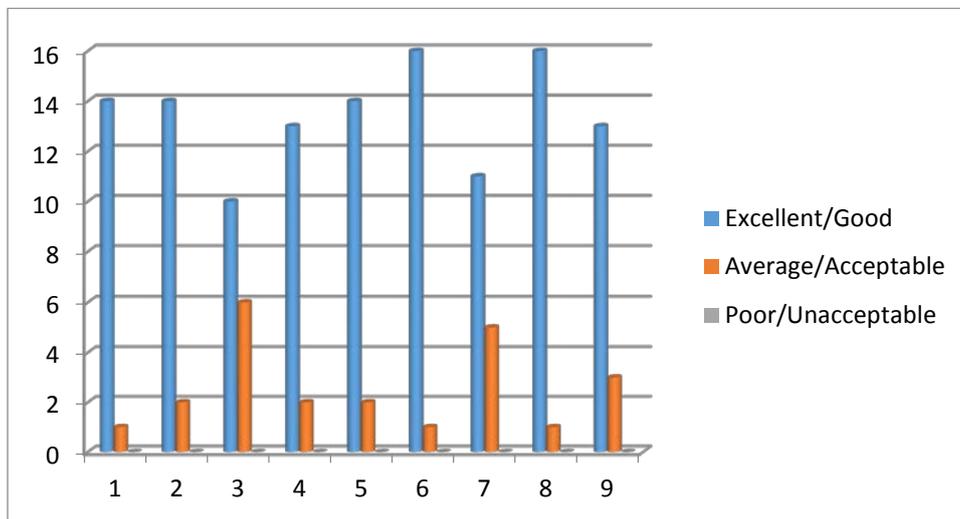
Approximately 60% of the participants mentioned that that the workshop partially helped to identify the gaps in the beneficiary GHG inventory systems and received sufficient guidance for improvements. 40% mentioned that this was fully met.

A bit over 90% of the evaluation scores regarding the quality aspects of the workshop such as achieved objectives, overall quality, practical work, presentations, facilitators, and logistics, obtained the marks 'excellent') to 'good'. The aspect whether the workshop was well suited to the level of understanding and experience had a 31% scoring 'average' and 6% 'acceptable' (62% scored this aspect as excellent to good). Almost 85% of all participants indicated that they found the workshop 'time well spent'.

My Expectations
1 Better understand the current state of progress with establishing national systems for GHG estimation
2 Manage to identify gaps in beneficiary national systems and provide recommendations and guidance for improvements
3 Improve the ability of countries to establish strong and efficient national systems. Enabling participants to return and take decisive action to secure strong data flows and develop national expertise in compiling and reporting
4 Setting priorities for country-specific short and long-term GHG inventory improvements



Aspect of Workshop
1 The workshop achieved the objectives set
2 The quality of the workshop was of a high standard
3 The content of the workshop was well suited to my level of understanding and experience
4 The practical work was relevant and informative
5 The workshop was interactive
6 Facilitators were well prepared and knowledgeable on the subject matter
7 The duration of this workshop was neither too long nor too short
8 The logistical arrangements (venue, refreshments, equipment) were satisfactory
9 Attending this workshop was time well spent



ANNEX I – Agenda

Day 1 : Wednesday 14 October 2015

<p>Topic: National Systems for GHG estimation</p> <p>Chair and Co-Chair: Imre Csikós, Justin Goodwin</p> <p>Venue: Zagreb, Croatia</p>				
Start	Finish	Topic	Speaker	Sub topic/Content
09:00	09:30	Registration		
09:00	09:15	Welcome and Introduction	Imre Csikós , Moderator	<ul style="list-style-type: none"> - Introduction participants - Programme outline and logistics
09:15	9:45	Mandates under the MMR and the UNFCCC	Justin Goodwin , ECRAN	
9:45	10:15	National Systems Requirements	Justin Goodwin , ECRAN	
10:15	11:00	<p>Presentation beneficiary 2 countries: (15 min each) plus 15 minutes discussion/questions = 45 min)</p> <ul style="list-style-type: none"> - Bosnia and Herzegovina - Albania 		<ul style="list-style-type: none"> - Institutional Arrangements - Legal arrangements - Data management and data flow - Quality Assurance and Quality Control - Strengths and weaknesses - Needs for improvement
11:00	11:15	Coffee Break		
11:15	12:15	<p>Presentation MS examples MS1 & 2: (20 min each incl 10 minutes)</p> <ul style="list-style-type: none"> - Estonia: Merylyn Möls [merilyn.mols@klab.ee] 		<ul style="list-style-type: none"> - National System set up - Legal requirements



		discussion/questions = 60 min)	- Lithuania: Dovilė Vaitkutė [d.vaitkute@am.lt]	- What goes well and what needs improvement - Recommendations on steps to take when setting up NS
12:15	13:00	Presentation beneficiary 2 countries: (15 min each) plus 15 minutes discussion/questions = 45 min)	- Montenegro - Kosovo*	- Institutional Arrangements - Legal arrangements - Data management and data flow - Quality Assurance and Quality Control - Strengths and weaknesses - Needs for improvement
13:00	15:30	Lunch Break & Administration		
15:30	16:30	Presentation MS examples MS1 & 2: (20 min each incl 10 minutes discussion/questions = 60 min)	Bulgaria: Detelina Petrova [detelina@eea.government.bg] Slovakia: Szemesova Janka [Janka.Szemesova@shmu.sk]	- National System set up - Legal requirements - What goes well and what needs improvement - Recommendations on steps to take when setting up NS
16:30	16:45	Coffee Break		
16:45	17:45	Presentation beneficiary 2 countries: (15 min each) plus 15 minutes discussion/questions = 45 min)	- Serbia - Turkey	- Institutional Arrangements - Legal arrangements - Data management and data flow - Quality Assurance and Quality Control - Strengths and weaknesses - Needs for improvement



Day 2 : Thursday 15 October 2015

Topic: National Systems for GHG estimation				
Chair and Co-Chair: Imre Csikós, Justin Goodwin				
Venue: Zagreb, Croatia				
Start	Finish	Topic	Speaker	Sub topic/Content
09:00	10:00	Presentation MS examples MS1 & 2: (20 min each incl 10 minutes discussion/questions = 30 min)	Netherlands: Harry Vreuls Germany: Strogies, Michael [michael.strogies@uba.de]	<ul style="list-style-type: none"> - National System set up - Legal requirements - What goes well and what needs improvement - Recommendations on steps to take when setting up NS
10:00	10:45	Presentation beneficiary 2 countries: (15 min each) plus 15 minutes discussion/questions = 45 min)	<ul style="list-style-type: none"> - Croatia - Former Yugoslav Republic of Macedonia 	<ul style="list-style-type: none"> - Institutional Arrangements - Legal arrangements - Data management and data flow - Quality Assurance and Quality Control - Strengths and weaknesses - Needs for improvement
10:45	11:00	Coffee Break		
11:00	12:00	Presentation MS examples MS1 & 2: (20 min each incl 10 minutes discussion/questions = 60 min)	UK: Stephen Forden [stephen.forden@decc.gsi.gov.uk] Ireland: Bernard Hyde B.Hyde@epa.ie	<ul style="list-style-type: none"> - National System set up - Legal requirements - What goes well and what needs improvement



				- Recommendations on steps to take when setting up NS
12:00	12:15	Introduction to Management & Co-ordination	Justin Goodwin, ECRAN	
12:15	13:15	Breakout groups or group brainstorming on: Management & Co-ordination (60 min)	Justin Goodwin, ECRAN and experts	<ul style="list-style-type: none"> - Three break out groups (country groups, 2 per break out groups) - Back in the main room countries write the results on their country flipchart - 'Flipcharts Promenade' - Forum discussion reacting to the issues on the flipcharts - Audience – experts interaction: opportunity for discussion and questions and answers - Conclusions and recommendations
13:15	14:15	Lunch Break		
14:15	14:45	Plenary feedback on BOG & discussion (30 min)	and experts	
14:45	15:00	Introduction to Sectoral/Category Compilation Expertise (15 min)	Justin Goodwin	
15:00	16:00	Breakout groups or group brainstorming on: Sectoral/Category Compilation Expertise	Justin Goodwin, ECRAN and experts	<ul style="list-style-type: none"> - Break out session per country - 'xyz; note on flipcharts - Plenary session - Forum reactions to the findings - Discussion, recommendations and conclusions



16:00	16:15	Coffee Break		
16:15	16:30	Plenary feedback on BOG & discussion	and experts	

Day 3 : Friday 16 October 2015

<p>Topic: National Systems for GHG estimation</p> <p>Chair and Co-Chair: Imre Csikós, Justin Goodwin</p> <p>Venue: Zagreb, Croatia</p>				
Start	Finish	Topic	Speaker	Sub topic/Content
09:30	09:45	Introduction to Data sources & Securing data flow (15 min)	Justin Goodwin	- Xyz
09:45	10:45	Breakout groups or group brainstorming on: Data sources & Securing data flow	Justin Goodwin, ECRAN, Moderator Experts	<ul style="list-style-type: none"> - Three Break out sessions (Gr 1: BiH; Gr 2: TK, Alb, Kos; FYROM; Gr 3: Ser, Cro, MNE) - Brainstorm on adaptation options - Plenary feedback - Expert advice and recommendations
10:45	11:00	Coffee Break		
11:00	11:30	Plenary feedback on BOG & discussion	and experts	
11:30	11:45	Next steps (workplan) Introduction (15 min)	Imre Csikos , ECRAN	<ul style="list-style-type: none"> - Explanation – guidance - Identify country adaptation options - Describe the identification and decision making process for the selected options



11:45	12:45	Next steps (workplan) Break out groups to focus on priority elements (60 min)	Imre Csikos ECRAN, Moderator Break out groups moderated by experts	<ul style="list-style-type: none"> - Three Break out groups, (Gr 1: BiH; Gr 2: TK, Alb, Kos; FYROM; Gr 3: Ser, Cro, MNE) - plenary feedback and conclusions - Exchange of thoughts for tasks to be carried out prior to and feeding into the next workshop
12:45	14:00	Lunch		
14:00	14:30	Reporting back (30 min)		<ul style="list-style-type: none"> - Presentations of break out group results (3 presentations) - Discussion - Formulate homework - Next steps
14:30	16:00	wrap up summary of recommendations and actions	Justin Goodwin	<ul style="list-style-type: none"> - Conclusions workshop - Workshop evaluation - Next workshop(s)



ANNEX II – Participants

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Tatjana	Obucina	Croatian Agency for Environment and Nature	Croatia	tatjana.obucina@azo.hr



First Name	Family Name	Institution Name	Country	Email
Justin	Goodwin	ECRAN	United Kingdom	justin.goodwin@aether-uk.com
Imre	Csikos	ECRAN	Netherlands	imre.csikos@ecranetwork.org



ANNEX III – Workshop materials (under separate cover)

Additional Workshop materials including presentations and exercises, can be downloaded from:

http://www.ecranetwork.org/Files/Workshop_Presentations_National_GHG_October_2015_Zagreb.zip



This Project is funded by the
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ANNEX IV - Exercise

Exercise 1:

Working group Task:

1. Design management structures and
2. present a set of short term goals and barriers for establishing the National GHG inventory System.

Kosovo*



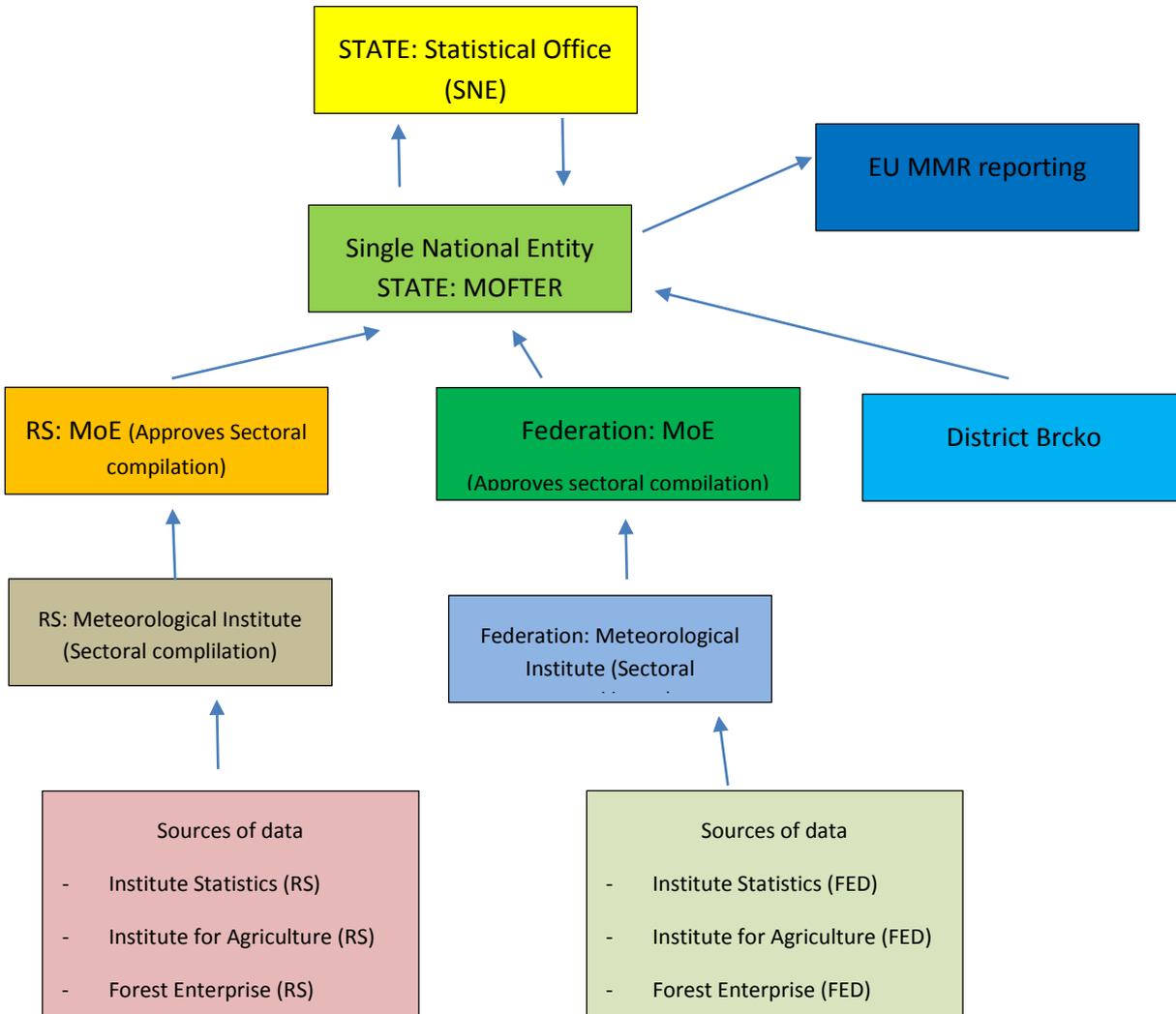
Present a set of short term goals and barriers for establishing the National GHG inventory System.

Output/Product?	Why?	Barrier
National Legislation	Precondition for implementation of requirements of MMR	Time Political will Lack of international obligation
Establish expert team (Sectoral)	TACCC	Access to experts
Establish QC/QA system	To continuously improve the system	Lack of in country experience and expertise
Establish the base year	Completeness	Lack of (historical) data



Bosnia and Herzegovina

Design Management Structure



Present a set of short term goals and barriers for establishing the National GHG inventory System.

Output/Product?	Why?	Barrier
Harmonisation of data collection	Not filled	Not filled
Agreement on gap filling Brcko District	Not filled	Not filled
Legislation on entity level for data provision	Not filled	Not filled
MoU between entities (a working one!) on Ministerial level	Not filled	Not filled
Create SNE inside Statistical Office	Not filled	Not filled
Create database of experts	Not filled	Not filled



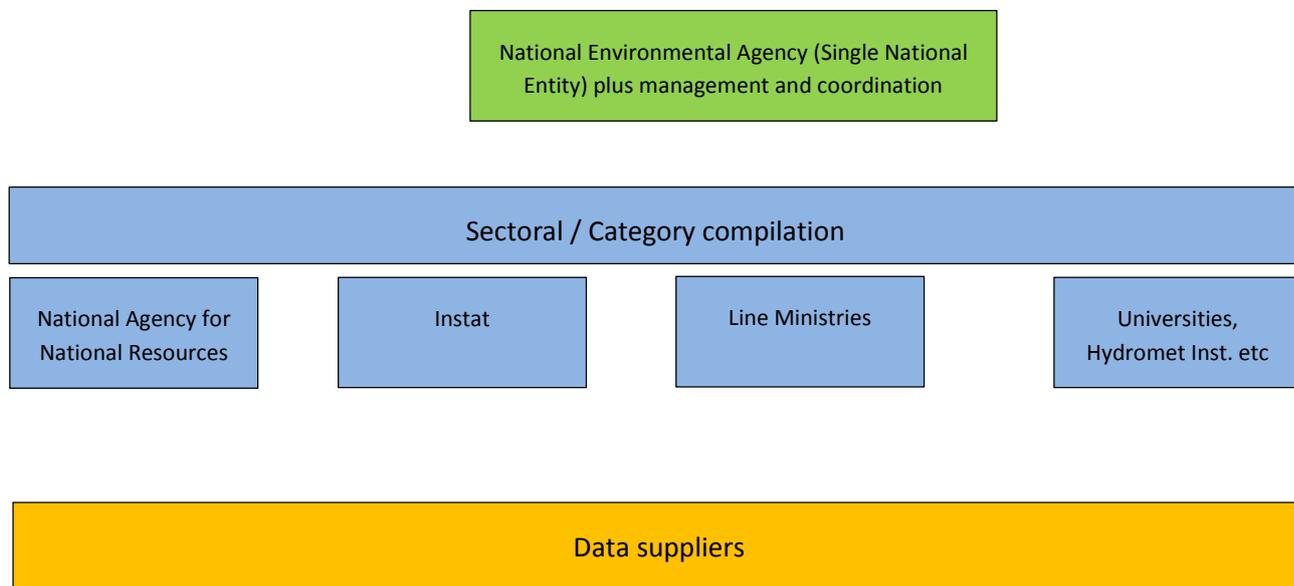
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Albania

Design Management Structure



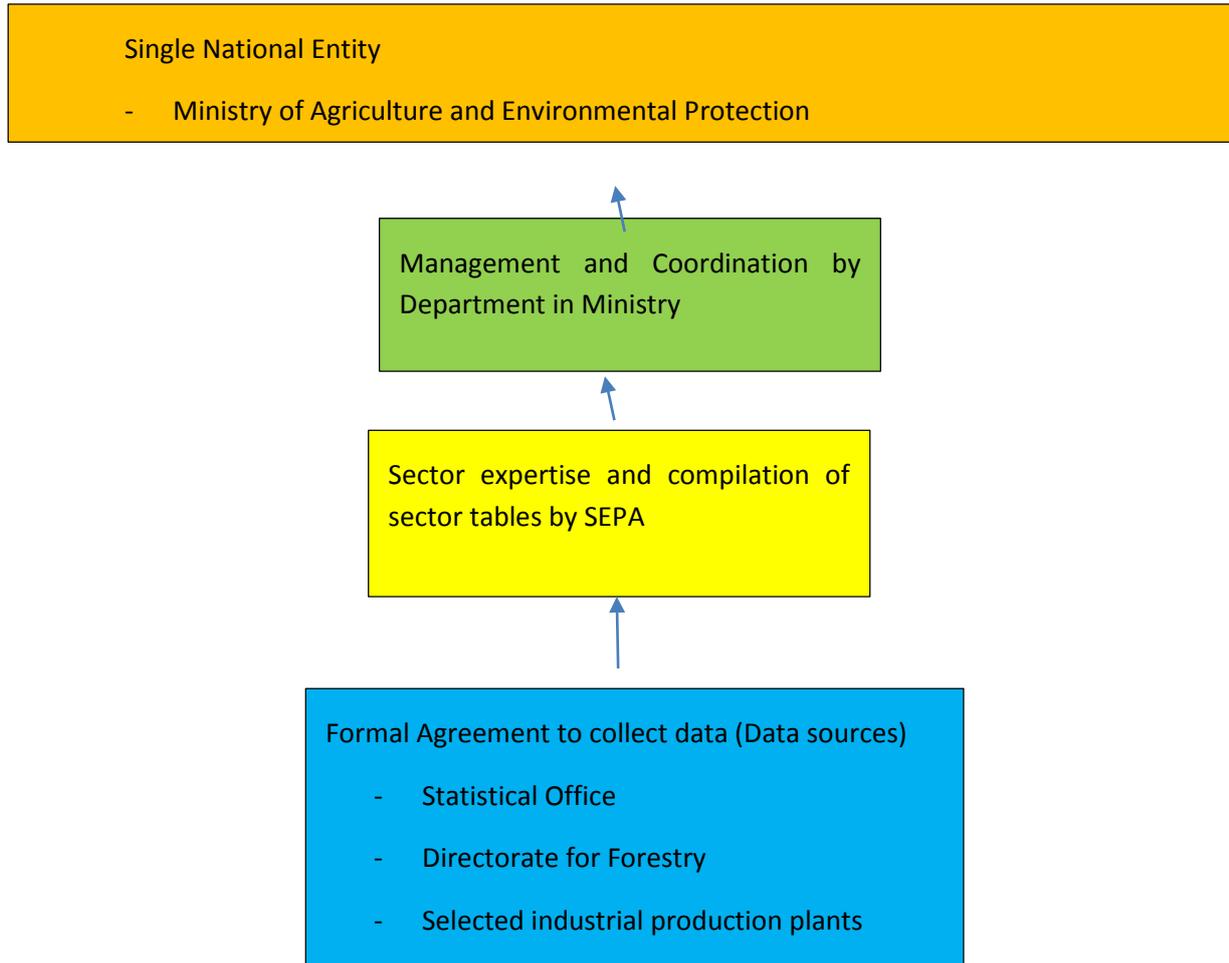
Present a set of short term goals and barriers for establishing the National GHG inventory System.

Output/Product?	Why?	Barrier
To take national control over the process	Ensure technical capacity in the administration to produce the inventory	Political will
Sector expertise identified	To fulfil the requirements	Political will Low salaries
Improving our internal expertise	To be independent of consultancies	Availability of funds



Serbia

Design Management Structure



Present a set of short term goals and barriers for establishing the National GHG inventory System.

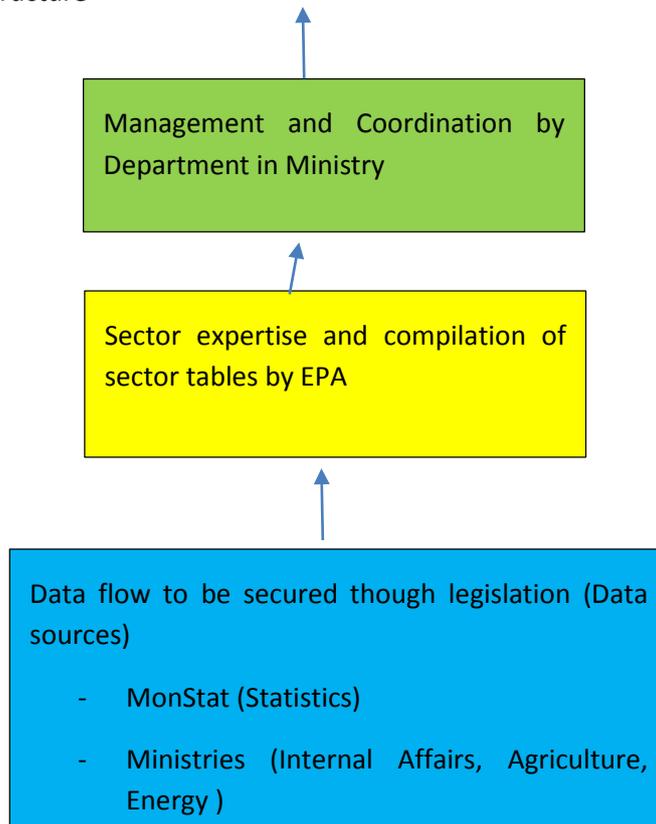
Output/Product?	Why?	Barrier
Formal agreements to secure data supply		Not a priority Additional obligations for data suppliers
Institutional arrangements for MMR and ESD		
Legal framework established for MMR		
Administrative and institutional capacity building		Lack of people
Energy balance and timeseries		



Montenegro

Single National Entity
 - Ministry of Sustainable Development and Tourism

Design Management Structure



Present a set of short term goals and barriers for establishing the National GHG inventory System.

Output/Product?	Why?	Barrier
Formal agreements to secure data supply		Not a priority Additional obligations for data suppliers
Institutional arrangements for MMR and ESD		
Legal framework established for MMR		
Administrative and institutional capacity building		Lack of people



ANNEX V – Evaluation

Statistical information

1.1	Workshop Session	Regional Training Seminar on National Systems for GHG inventories (and projections) 14-16 October 2015, Zagreb, Croatia
1.2	Facilitators name	As per agenda
1.3	Name and Surname of Participants (evaluators) optional	As per participants' list

Your Expectations

Please indicate to what extent specific expectations were met, or not met:

My Expectations	My expectations were met		
	Fully	Partially	Not at all
1. Better understand the current state of progress with establishing national systems for GHG estimation	IIII II (41%)	IIII IIII (59%)	
2. Manage to identify gaps in beneficiary national systems and provide recommendations and guidance for improvements.	IIII II (41%)	IIII IIII (59%)	
3. Improve the ability of countries to establish strong and efficient national systems. Enabling participants to return and take decisive action to secure strong data flows and develop national expertise in compiling and reporting.	IIII (29%)	IIII IIII II (71%)	
4. Setting priorities for country-specific short and long-term GHG inventory improvements.	IIII IIII II (71%)	IIII (29%)	



Workshop and Presentation

Please rate the following statements in respect of this training module:

Aspect of Workshop	Excellent	Good	Average	Acceptable	Poor	Unacceptable
1 The workshop achieved the objectives set	IIII (22%)	IIII IIIII (71%)	I (7%)			
2 The quality of the workshop was of a high standard	IIII (29%)	IIII III (59%)	II (12%)			
3 The content of the workshop was well suited to my level of understanding and experience	IIII (31%)	IIII (31%)	IIII (31%)	I (7%)		
4 The practical work was relevant and informative	IIII I (40%)	IIII II (46%)	I (7%)	I (7%)		
5 The workshop was interactive	IIII IIIII II (75%)	II (12.5%)	II (12.5%)			
6 Facilitators were well prepared and knowledgeable on the subject matter	IIII IIIII I (69%)	IIII (25%)	I (6%)			
7 The duration of this workshop was neither too long nor too short	IIII (25%)	IIII II (44%)	IIII (25%)	I (6%)		
8 The logistical arrangements (venue, refreshments, equipment) were satisfactory	IIII III (50%)	IIII III (50%)				
9 Attending this workshop was time well spent	IIII I (37%)	IIII II (44%)	III (19%)			

Comments and suggestions

I have the following comment and/or suggestions in addition to questions already answered:

Workshop Sessions:

- For future we need ½ hour more time
- Well prepared and organised
- Please invite decision makers to participate next time
- I had the feeling that the last two two days I did the same things twice. Also the ppt was unnecessary because later we were repeating what we have said.



Facilitators:

- Did their job appropriately
 - The experiences from other countries and their process of establishing MMR system was very useful
-

Workshop level and content:

- Satisfactory
 - It could be a bit shorter workshop
-

