

Estonian Environmental Research Centre

National GHG System in Estonia.

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Agenda

- Introduction
- National System set up and legal arrangements
- Data tools and data collection
- National System's strengths, weaknesses and ideas for improvement



Republic of Estonia



Head of State: President
Independence declared : 24 February 1918
Foreign occupation by the Soviet Union: 1940–1991
Independence restored: 20 August 1991
Government: Parliamentary Republic, single chamber Parliament (Riigikogu) of 101 members
Currency: Euro (since 01.01.2011)
 Estonia became a **NATO member state** on 29 March 2004.
 Estonia became a **European Union member state** on 1 May 2004.
Area: 45 227 square km
Population: 1.340 million
Population density: 31 inhabitants per square km
 The proportion of **urban population** (2011): 68%
 The proportion of **rural population** (2011): 32%
Largest ethnic groups: Estonians (69%), Russians (26%), Ukrainians (2%), Belarussians (1%) and Finns (1%).
Temperature range -2,0°C in winter (may sink to -20°C usually in February) and +19.4°C in summer (may rise to +30°C usually in July).

Background information



- **Estonia signed the Framework Convention on Climate Change at the United Nations Conference on Environment and Development held in Rio de Janeiro in June 1992.**
- In 1994 Estonia ratified the UNFCCC and in 2002, the Kyoto Protocol. In response to the UNFCCC and the Kyoto Protocol requirements **Estonia has prepared greenhouse gas Inventories s since 1994 (NIR).**
- Single national entity with overall responsibility for the Estonian greenhouse gas inventory is the **Estonian Ministry of the Environment (MoE)**. Financial resources are partly planned in the State Budget and partly applied from Environmental Investment Centre. Practical work is done mostly on the basis of contracts.



National System set up



1994-2006

The Institute of Ecology at Tallinn University was responsible for the inventories under contract to the Ministry of the Environment (MoE) in Estonia until 2006.

2006-2008

Since 2006 2 departments of Tallinn University of Technology (TUT) prepared the inventory (Department of Thermal Engineering and Department of Chemistry) and Estonian Environment Information Centre (EEIC) co-ordinated the process of the inventory preparation.

2008-2013

Inventories were produced in collaboration between the MoE, EEIC (co-ordinator until 2010), TUT, and Estonian Environmental Research Centre (EERC) (co-ordinator since 2011).

2015

Inventories are produced in collaboration between the MoE, Estonian Environment Agency (EtEA) (the successor of EEIC) and EERC (co-ordinator).

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Initial shortcomings



- Status of legal arrangements;
- Lack of quality assurance/quality control plan;
- Lack of an uncertainty analysis and insufficient archiving processes;
- Inventory calculations;
- 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.

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Major development projects



- 1993 - Estonian Country Study, was initiated within the U.S. Country Studies Program to help Estonian specialists start compiling the GHG inventory



- 2007-2008 Twinning project 'Enhancing the capacity to reduce the emissions of fluorinated greenhouse gases in Estonia'



- 2009-Twinning Light project EE06-IB-TWP-ENV-06 'Improving the quality of Estonia's National Greenhouse Gas Inventory' with Finland

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Main findings of the Twinning Project with Finland in 2009



- Uncertainty in the continuance of the tasks and resources was reflected in changes in personnel.
- Awareness of the importance of the GHG inventory and the implications of the inventory not meeting the requirements was low in the Estonian government.
- Insufficient collaboration with experts not participating in the inventory preparation directly, such as expert from the institutions collecting data (Statistics Estonia, Estonian forest research, the emission trading registry, etc.)
- Some sectors used largely aggregated activity data, e.g. from national statistics.
- Some experts had also access to metadata used in the compilation of the statistics. The access to these data was based on personal contacts rather than established procedures and agreement between organisations.

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Legal basis



Ministry of the Environment

- **§117 of the Ambient Air Protection Act (RT I 2004, 43,298)**, activities for the reduction of climate change are organised by the Ministry of the Environment on the basis of the requirements of the UNFCCC and the Kyoto Protocol to the UNFCCC
- **§6 of the Statutes of the Ministry of the Environment (RT I 2009, 63, 412)**, the MoE is responsible for climate change related tasks.
- In accordance with the **Statutes of the Climate and Radiation Department** the department is responsible for organizing and coordinating the GHG emission reporting activities

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- A new **contract agreement with the EERC** for inventory compilation in the energy, industrial processes and product use, agriculture and waste sectors and for inventory coordination was entered into in **2013 for three years** (for the 2014, 2015 and 2016 submissions).

The Estonian Environment Agency

- In accordance with **§9 section 12 of the Statute of the EtEA**, the tasks of the Forest Monitoring Department are to plan, organize and perform forest monitoring and applied research, statistical forest inventory, land-use and land use change and carbon cycle monitoring, and to control, process and analyse monitoring data, comply national and international reporting obligations

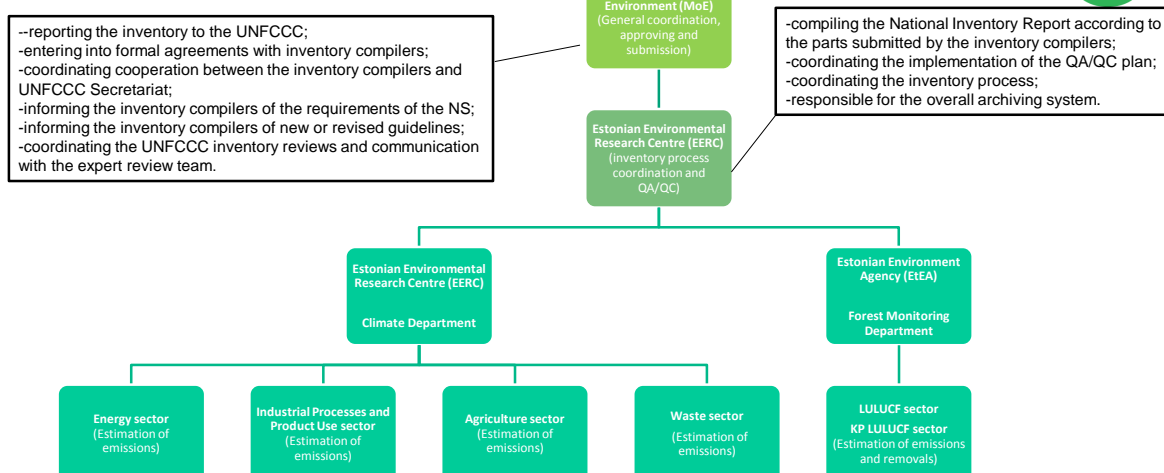
Statistics

- Statistics Estonia (SE) collects statistical data on the basis of the **Official Statistics Act § 3(2)**, taking into consideration the official statistical surveys approved by the Government of the Republic. MoE has a bilateral agreement with SE.

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Current National System



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Quality Assurance/Quality Control (QA/QC) plan



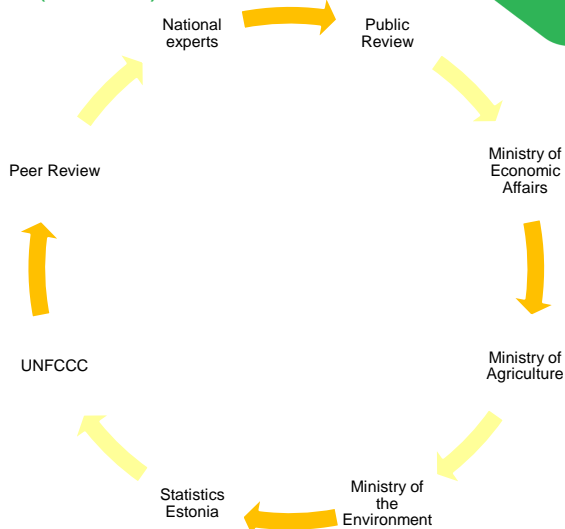
Estonia's QA/QC plan consist of seven parts:

- (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.

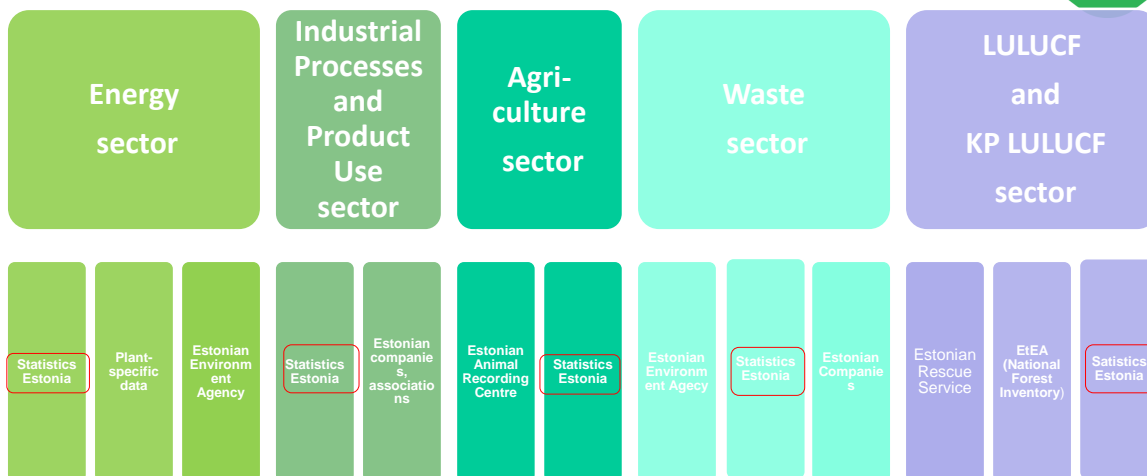
Quality Assurance/Quality Control (QA/QC) Procedures



- 2009 submission-2012 submission all data collected by institutions involved in the inventory process was checked by one independent expert from Tallinn University of Technology (TUT).
- In the 2013 submission and the 2014 submission the inventory was reviewed in parts by the EERC, TUT and other national experts.
- The 2015 submission was checked by experts from TUT, University of Tartu, Estonian University of Life Sciences and other national experts.



Main pathways of data collection



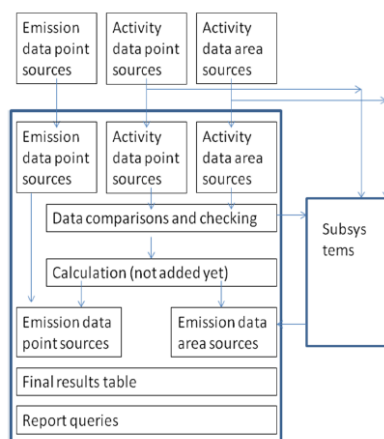
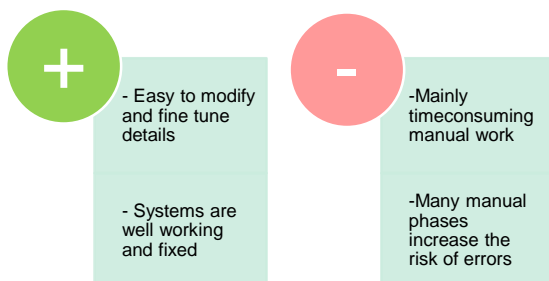
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Data tools and data management processes



At present the sectoral experts use independent calculation models, mostly spreadsheet models based on the IPCC 2006 guidelines and its supplements.



Structure of a proposed integrated IT system

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National System's strengths and weaknesses



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- 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

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- Late data flow in some departments makes reaching deadlines sometimes challenging
- Past data record quality and accessibility
- Companies need more support for 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

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Thank you for your attention!

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Recommendations



- Focus on establishing binding legal arrangements
- Clearly distributed rolls
- Long-term contracts between the institutions involved in the inventory preparation process