

# National Systems for GHG Inventories (and projections)

*ALBANIA*

Ministry of Environment  
Zagreb, Croatia, 14-16 October 2015,

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## Outline

- Current situation of the national system for compiling GHG inventories
  - Challenges with source data and institutional arrangements
  - Data sources
  - Conclusions
  - Experiences faced with INDC process
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## Challenges with source data and institutional arrangements

- The inventory was developed in the GEF funded project: “Enabling Albania to prepare its First, Second and Third National Communication in Response to its Commitments to UNFCCC”
- The work involved fundamental decisions about:
  - methodologies and emission factors to be used,
  - setting up a network of contacts and sources to collect and review activity data,
  - setting up a framework for management, quality assurance, technical peer review, documentation, and archiving.
- Several iterations are needed for data improvements and reviewing over or under-estimated source categories
- The cyclical nature of the inventory process is fundamental for the quality
  - Important lessons were learned during the previous inventory

## Scope of GHG Inventory under TNC

- The GHG inventory in the TNC is developed using the 1996 revised IPCC Guidelines. It has a narrower and deeper analysis than the previous inventory (i.e., more detailed activity levels, data permitting) with the baseline year of **2005**
- Given the role of the energy activity, the inventory adopted the higher tiers of the IPCC methodology and maintained a strong data validation focus on the **energy and transport sectors**.
- The inventory covers the refined time-series for the period **2000-2009**. Since the SNC, there have not been any major studies to improve emission factor or other estimates. A legal framework is recommended as part of the TNC to address the basis for future updates to the GHG inventory. The IPCC Good Practice Guidelines are applied to all categories.

## Sources of Information for the GHG Inventory

- **All activity data concerning each sector are national.** The main activity data source/provider are Ministry of Environment, Ministry of Transport and Infrastructure, Ministry of Energy and Industry, National Agency for Natural Resources, Ministry of Agriculture and Rural Development, Extractive Industries Transparent Initiative, and the INSTAT, although they did not provide activity data for GHG inventory purposes according to the IPCC nominations.
- Other data providers/sources are Bank of Albania, General Directory of Customs and different data bases, surveys and studies assisted by international organizations (like the World Bank, UNDP, EBRD, EIB, FAO, EU, etc.), public/private universities and different NGOs.
- As regards the emission factors, they are represented by default factors provided by IPCC 1996 Revised Guidelines.

## Summary of GHG emissions Inventory

- **Methodology:** The TNC inventory is based on the IPCC's Revised 1996 Guidelines. It has addressed all emission/sink categories called for in the IPCC methodology with particular focus on bottom-up and detailed focus on the **energy/transport sector**.
- **Information Sharing:** There is a real interest in developing regional networks to facilitate information and data exchange, particularly with south eastern European countries, many of which now have in-house inventory & mitigation experts in the respective environment ministries.
- **Industrial cement production:** Given the increase in cement production, there was a need for a detailed study on CO<sub>2</sub> equivalent emissions from cement factories which took the form of a small study for activity data validation and/or macroeconomic impact: related NAMA.

## Summary of GHG emissions Inventory

- **Transport Sector.** Given the role of the energy activity, particularly the transport sector, the inventory has maintained a strong data validation focus on the energy and transport sectors.
- **Barriers:** The liberalization, privatization and subsequent fragmentation of the oil and energy sector has made it much more difficult to obtain data. The TNC inventory team however managed in close cooperation with the Directory of Hydrocarbons Policy within the Ministry of Energy and Industry to apply appropriate estimation techniques to develop the GHG inventory for energy and to undertake the necessary internal consistency checks, including spot surveys for data collection as needed.
- **Sector-specific limitations.** The TNC provided information on whether and how recent studies in the transport sector have improved data reporting. Also, the TNC managed to address the issue of inventory uncertainty with regards to wood collection, particularly illegal cutting and individual collection by implementing a field data testing program. This was needed because the SNC inventory team found it difficult to harmonize the Energy and LUCF components of the IPCC's methodology regarding fuel wood consumption. Limited field fuel wood surveys and data testing helped as well to validate consumption levels and establish benchmarks that can be used to harmonize results

## Summary of GHG emissions Inventory

- Albania's third GHG inventory covers all sources and sinks as well as all gases as mandated by 10/CP2: it considers five main modules such as **energy, industrial processes, agriculture, waste, and LUCF**, as guided by revised IPCC of 1996. The national inventory has considered **three direct GHGs** such as: CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O and **three indirect GHGs** such as: CO, NO<sub>x</sub>, and NMVOC. Estimates of key sources have been provided as well. Aggregated GHG emissions and removals expressed in CO<sub>2</sub> equivalent have been provided too

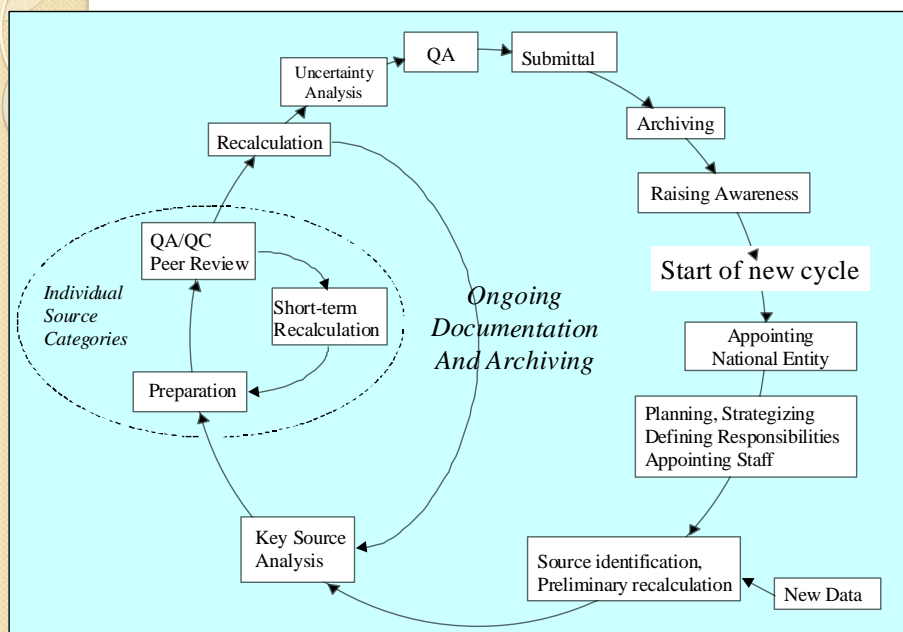
## Current situation in Albania with GHG inventories and NC

- Albania is **developing institutional arrangements** for producing inventories.
- Considerable **experience** has been gained and the capacity is being further developed.
- For the TNC, **time series were developed** for 2000-2009
- **No single statistical authority** with the responsibility for **evaluating data collection** for inventories
- The **participation of numerous stakeholders** is critical to assessing climate change
  - Including various economic sectors, ministries, non-governmental agencies, community based organizations and funding agencies

## Current situation in Albania with GHG inventories and NC

- Albanian Institute of Statistics (INSTAT), different ministries and specialized institutes provide activity data for all sectors as required for the GHG Inventory.
- 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.
- The Statistical Program, compulsory for all state organs, serves as a basic coordination tool for the collection and compilation of data and for analyzing and publishing indicators.

### Brief description of national system



### Challenges with source data and institutional arrangements

- Both GHG Inventory under TNC and the stakeholder consultations identify **data availability and quality as a key barrier** to developing a more accurate inventory
- Data gaps exist for mobile combustion, enteric fermentation, fuel combustion in industry, fuel wood burned for energy, and solid waste treatment
- The main contributor to uncertainty was the amount of carbon dioxide (CO<sub>2</sub>) emissions from fuel wood.
- The main source of uncertainty was an estimate of the quantity of self-collected fuel wood in rural areas

## Challenges with source data and institutional arrangements

- The SNC did not describe the data collection system
  - This is a serious gap as information had to be obtained informally and/or by non-professionals
- Analysis of the SNC shows that a critical mass of institutional capacity has been developed for the TNC
- GHG inventory team assembled for the TNC is intact and ready to undertake the inventory update for TNC
  - Institutional memory helps taking into account the limitations, obstacles and challenges in inventory development
- To improve data quality, we should undertake surveys on energy consumption for households, agriculture and transport sectors

## Legislation gaps

- Currently, National Agency of Natural Resources (NANR) prepares energy database for supply and demand sides, transformation process and losses, and compiles energy balances annually
- No legislation to define the methodology and procedure for energy balance
  - NANR developed its own methodology for data collection
- The main problem is that **legislation does not oblige data providers** (institutions, companies or enterprises) to submit their data
  - This entails serious difficulties for NANR with private sector, depending on their will to reply to questionnaires

## Legislation gaps

- We need new or changed legislation defining clearly the roles and responsibilities of INSTAT and NANR
  - To recognize NANR as the responsible authority for the energy balance
  - To define obligations for data providers, and in particular for the consumers to report on supply and consumption of energy by sources and commodities
- The draft **Law in Energy Efficiency** is approved by Council of Ministers with Decision No. 640, date 2.07.2015 that send this law for approval in Parliament.  
The EE Law has taken into consideration a chapter on provision of energy data from different actors and energy consumers (traders, buildings owners, energy consumers, public and private sector, etc)
- Albania has made concrete progress in transposing its legislation with the acquis in the field of Energy with the Law No .43/2015, dated 30.04.2015 “**On Power Sector**” This law was entered into force on 13.06.2015

## Problems encountered and solution implemented

- **Interpolation and extrapolation** are used for filling different data gaps where possible and gives reliable results
- **Data and inventories** produced under other internal and international projects (studies) in the frame of other international agreements where Albania is a Part
- **Other countries experiences and methodologies** proposed under the regional project
- **Main data for energy and transport** sector have been collected from the yearly Energy Balance prepared from the NANR and Ministry of Energy and Industry
- **Energy Efficiency Action Plan and RES Action Plan** have been used also for calibrating different activities data for the energy and transport sector.
- **NAMA Project Document** “Financing Mechanism for Energy Efficiency in Buildings (Energy Efficiency Fund)” related to the supporting the implementation on the National Energy Efficiency Action Plan (NEEAP) in the residential, public and commercial sector has been used for calibrating different activities data for the energy consumption and the residential and service sector.
- **NAMA Project Document** “Fuel switch in the cement sector – use of non-hazardous waste as fuel” has been used for calibrating activity data related to the cement sector.



## Conclusions

### 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 serve the inventory and Mitigation Scenarios Analysis
- To secure data needs for TNC, development work is needed in the including **launching a new survey**
  - It should be carried out by INSTAT with Regional Statistical Offices
  - The survey to be included in the regular yearly data collection scheme to create a sustainable data system
  - This would provide timely data on the actual situation in all households and service, transport, industry and agriculture sectors
- **Longer-term improvements of data collection** on the energy sources, including all GHG data are needed
  - This improvement of energy statistics is based on two laws: the Energy Efficiency Law and Renewable Energy Sources (RES) Law especially for energy activity data

## Conclusions

### Improvement of other GHG Statistics

- The environmental dimensions, and climate change in particular, should be **mainstreamed to official statistics**
- The **capacity** of INSTAT to produce high quality basic statistics with standard concepts and classifications should be strengthened
- The **use of official statistics** for scenario development and modelling should be improved and promoted
  - A need for a dialogue between the university and INSTAT
- **The role of official statistics** in the production of emission inventories should be **strengthened**
  - The availability, quality and timeliness of GHG estimates would be improved through high quality official statistics for the calculations
- Statistics on emissions should become **part of official statistics** and the regular production and dissemination
  - The appropriate institutional arrangements should be established between the Ministry of Environment and INSTAT
- The monitoring of emission trading schemes and other mitigation measures **need advanced analysis and new statistics**

## Conclusions

- In order to ensure the continuous and regular updating of the national GHG inventories and the possible establishment in the near future of a Monitoring, Reporting and Verification (MRV) system
- As final conclusion the overall national GHG Inventory **uncertainty is 9.6%** and the main contributor in this uncertainty is CO<sub>2</sub> emissions from fuel wood from residential and service sectors. This comes especially from a large degree of uncertainty of activity data in this subcategory (especially fuel wood self-collected from rural areas). More detail analyses regarding the full evaluation of uncertainty level

## Experiences faced with INDC

- Albania is a **developing country**, highly vulnerable to the effects of the Climate Change. National emissions of the greenhouse gases represent only **0,017 %** of global emissions and the net per capita GHG emissions Albania was 2.76 tCO<sub>2</sub>e which is less the a quarter of emissions of high-income countries.
- **In the focus of Albania's INDC will be the Energy and Industrial Processes Sectors as they are defined in the GHG inventory.**
- Albania's total greenhouse emissions are relatively low (8,4 M tons in 2009, of which roughly 60% is of the CO<sub>2</sub> emissions) it is aiming to take its fair share from the efforts to avoid dangerous climate change.
- Having high uncertainty of data regarding non CO<sub>2</sub> greenhouse gases, results that Albania is to provide its INDC regarding CO<sub>2</sub>.
- The INDC of Albania is a **baseline scenario target**: It commits to reduce CO<sub>2</sub> emissions compared to the baseline scenario in the period of 2016 and 2030 by **11.5 %**. This reduction means 708 kT carbon-dioxide emission reduction in 2030.



## Experiences faced with INDC

- **Baseline** - Business As Usual scenario of emissions projections based on economic growth in the absence of climate change policies, starting from 2016.
  - The scenarios for the INDC were developed taking into consideration draft of the 3rd National Communication of Albania and all available scenario development work related to greenhouse gas emissions.
  - The INDC submitted by Albania is fair and ambitious because it aims to secure limited increase of its greenhouse gas emissions while it the country pursues a strong economic development pathway. Moreover, the pathway allows on long term for the convergence of Albania's per capita emissions to the 2 ton/capita level.
  - Greenhouse gas emissions and removals from agriculture, forestry and other land uses are currently not included in the accounting. Emissions and removals from these sectors can be included in the INDC at a later stage when technical conditions allow for that.
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**Thank you for your kind attention!**

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