Facilitative Sharing of Views Workshop
Bonn, May 20th 2016

Bosnia and Herzegovina's
First biennial update report
FBUR

FBUR process and scope

- Report completed before December 2014, consistent with the "UNFCCC biennial update reporting guidelines for Parties not included in Annex I to the Convention" and Decision 2/CP.17, paragraph 41(a)

Delay in its formal submission (12 March 2015) acknowledged by the technical team for evaluation, due to the extended time needed for internal approval procedures

Scope

Inventory data for years of 2010 and 2011

Continuation of the time series from SNC (1990-2001) for period of 2002-2009 will be provided in the TNC

- Coverage: GHG emissions and removals by sector and by gas covering the energy, industrial processes, agriculture, land use, land-use change and forestry (LULUCF) and waste sectors

- Emissions of: CO_2, CH_4, N_20, and indirect GHGs (SO_X,CO,NO_X and NMVOC)
- FBUR is based on: INC, SNC, producers' data, official statistical publications, questionnaires , sectoral development strategies (energy, agriculture etc.), approved projects, public papers, expert judgement

Methodology and models used

- UNFCCC Biennial Update Reporting Guidelines for Parties not included in Annex I to the Convention, CoP Decision 17 (2/CP.17, Annex III, Chapter 3).
- Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories
- Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories and Good Practice Guidance for LULCF
- Inventory Software (NAAIS), developed by the UNFCCC Secretariat for Parties not included in Annex I to the Convention

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Local circumstances/

lack of harmonized emission and environmental databases, unreliability of reporting and verification procedures, lack of energy balance for the whole country, ongoing process of legislation development

Implemented Emission factors are default EFs according to Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories. Net caloric values NCVs for all types of coal are country-specific.

REPORTED INVENTORY OF GREENHOUSE GASES EMISSIONS

Inventory covers most of the categories and gases for which GHG emissions occur and for which information was available;

Energy balances for Bosnia and Herzegovina were not prepared for the period 2010–2011. The report therefore used consumption estimates in the balances of entity governments and Brčko District as well as data provided directly by energy utilities.

Considering all the given circumstances, the estimated total uncertainty for the energy sector data is different for the wartime years and the first post-war years. This uncertainty is estimated to be ±8% and has somewhat improved since the release of the SNC

Notation keys “NO” (not occurring) and “NE” (not estimated) were shown for the activity data on imports, exports and stock changes due to lack of energy balance and difficulties in collecting all reference approach parameters, particularly if internal imports and exports between two entities are taken into account

BIH FBUR doesn’t consist tables included in annex 3A.2 to chapter 3 of the IPCC good practice guidance for LULUCF.

Report contains data only for changes in the forest and other woody biomass stocks. Data needed for calculations of emissions/removals for other land categories are partly available but not enough adequate, consistent and complete.

Also, even identified, data on HFCs, PFCs and SF6 were not reported, since the sources of those gasses are only anecdotal

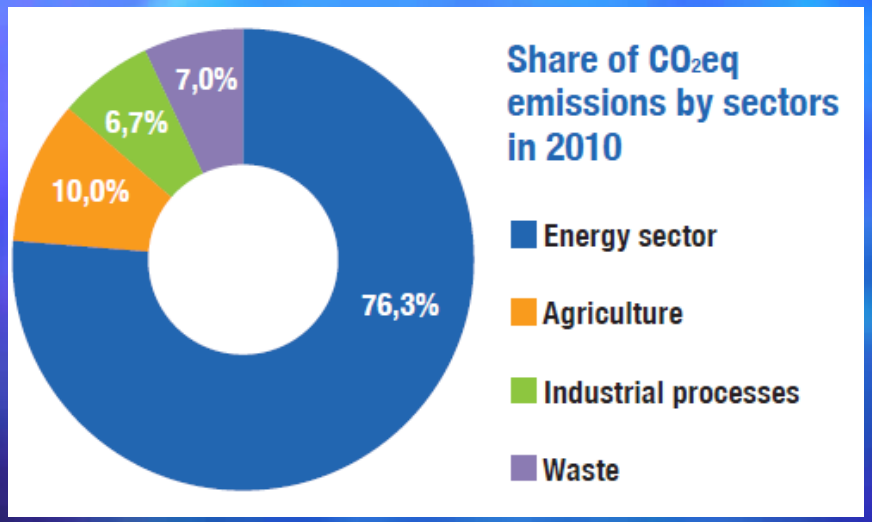
Calculated emissions

In comparison with 1990, when emissions totalled 34,043 Gg CO_2eq, total emissions of CO_2eq amounted to 28,009 Gg CO_2eq in 2010 and 31,095 Gg CO_2eq in 2011, or 82% and 91% of 1990 emissions, respectively.

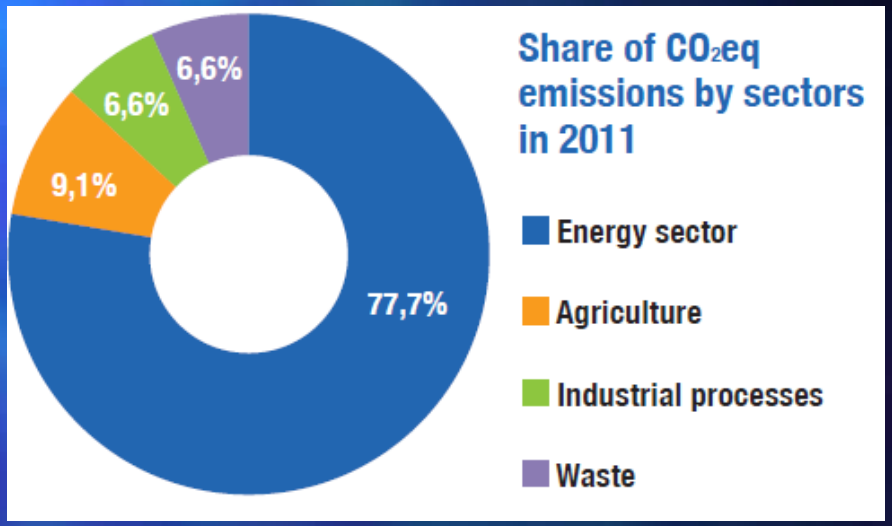
GHG source and sink category	2010 total emissions CO_2eq (Gg)	2011 total emissions CO_2eq (Gg)
Energy	21,371.07	24,151.10
Industrial processes	1,867.71	2,048.95
Solvent and other product use	0.00	0.00
Agriculture	2,813.60	2,835.33
LULUCF	-6,476.02	-6,174.00
Waste	1,956.44	2,059.93
Other	0.00	0.00
Total excluding LULUCF	**28,008.83**	**31,095.30**
Total including LULUCF	**21,532.80**	**24,921.30**

Share of emissions by sectors

2010



2011



The largest source of total CO_2eq CO_2 emissions is by far the energy sector, followed by agriculture, waste and industrial processes

Analysis of key emissions sources for the year 2010

Key category	Gas	CO_2-eq (Gg)	Level assessment	Cumulative total
1A1 Energy Industries	CO_2	15,151.37	54.09%	54.09%
1A3b Road Transportation	CO_2	3,205.33	11.44%	65.53%
4D Agricultural Soils	N_2O	1,607.65	5.74%	71.27%
6A Solid Waste Disposal on Land	CH_4	1,787.95	6.38%	77.65%
1A2 Manufacturing Industries and Construction	CO_2	1,331.44	4.75%	82.40%
2C1 Iron and Steel Production	CO_2	993.50	3.55%	85.95%
4A Enteric Fermentation	CH_4	841.02	3.00%	88.95%
1B1a Coal Mining (fugitive emissions)	CH_4	710.59	2.54%	91.49%
1A4b Residential	CO_2	569.57	2.03%	93.52%
2A1Cement Production	CO_2	474,92	1,69%	95,21%

Analysis of key emissions sources for the year 2011

Key category	Gas	CO_2-eq (Gg)	Level assessment	Cumulative total
1A1 Energy Industries	CO_2	17,558.13	56.47%	56.47%
1A3b Road Transportation	CO_2	3,262.08	10.49%	66.96%
4D Agricultural Soils	N_2O	1,660.40	5.34%	72.30%
6A Solid Waste Disposal on Land	CH_4	1,883.61	6.06%	78.36%
1A2 Manufacturing Industries and Construction	CO_2	1,492.20	4.80%	83.16%
2C1 Iron and Steel Production	CO_2	1,095.57	3.52%	86.68%
4A Enteric Fermentation	CH_4	822.23	2.64%	89.32%
1B1a Coal Mining (fugitive emissions)	CH_4	762.47	2.45%	91.77%
1A4b Residential	CO_2	567.33	1.82%	93.59%
2A1Cement Production	CO_2	446.64	1.44%	95.03%

MITIGATING CLIMATE CHANGE IMPACTS

- Sectors
  - **electricity generation, district heating, buildings, transport, waste management, agriculture, and forestry**.
  - Mitigation scenarios developed until 2040
  - Specific modeling involved a quantitative evaluation of time-series GHG emissions and considered three development scenarios:

    S1 – a baseline scenario ("business as usual"),

    S2 – a scenario that assumed partial implementation of mitigation actions, and

    S3 – an advanced scenario that assumed the implementation of a comprehensive set of mitigation actions.
  - Analysis of a financial effects included in the report

Other activities

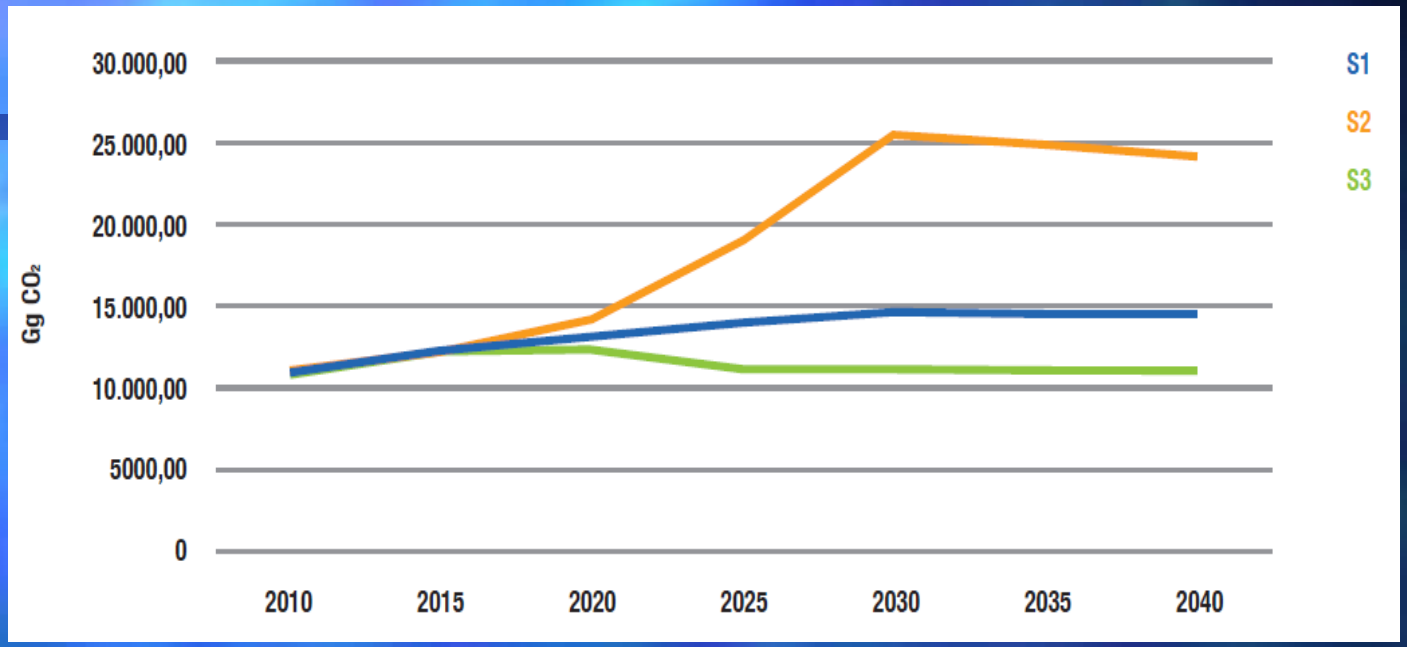
- Establishment of institutional framework for measuring, reporting and verification of Nationally Appropriate Mitigation Actions
- Developing Guidelines for NAMA projects implementation
- Formulation of initial (3+) NAMA projects
- Training on MRV and ETS

GHG emission reduction scenarios in the electric power sector

The S1 “business as usual“ scenario assumes a slight increase in the share of electricity from renewable energy sources as a result of tariff incentives (feed-in tariffs) and a reduction in investment costs for RES. However, most electricity is still generated from fossil fuels. In the period 2015–2025, the share of RES will grow by 3% every five years, after which the five-year growth rate will be 5%.

The S2 “baseline” scenario assumes the implementation of power plant construction projects in accordance with the relevant entity strategies and data collected on planned investments, by the year 2030

The S3 “advanced” scenario assumes the intensive utilization of RES and EE as a result of targets set with the aim of reducing total emissions of Bosnia and Herzegovina by 50% in 2050 compared to 1990. There is no significant increase in electricity production (as assumed under the S1 scenario)



In the S1 and S2 scenarios, carbon dioxide emissions from the electric power sector in BiH will increase in the period 2010–2040, and the increase in emissions in the S2 scenario will be more than 100%. According to the S3 scenario, however, emissions in 2040 will be close to those in 2010. Considering the 1990 emissions, the S3 scenario could possibly lead to meeting the goal of halving 1990 total emissions levels in Bosnia and Herzegovina by 2050.

GHG emission reduction scenarios in the RES sector

Mitigation scenarios related to the utilisation of RES are based on the estimated reserves and potentials of individual forms of RES, as well as technological, social, political and economic opportunities for their exploitation.

The S1 scenario assumes that no mitigation actions are taken; i.e., there is no increase in the use of renewable energy;

The S2 scenario assumes the gradual introduction of new technologies;

The S3 scenario assumes a high level of climate change mitigation actions and an increase in the use of RES.

GHG reduction scenarios in district heating sector

The S1 scenario assumes a higher economic growth rate and a corresponding increase in energy consumption for heating.

The S2 scenario assumes a lower economic growth rate, with a lower increase in energy consumption.

The S3 scenario envisages a higher economic growth rate, but it also assumes extensive use of energy efficiency measures, resulting in a significant reduction in energy consumption.

GHG emission reduction scenarios in the buildings sector

Due to their age and low energy efficiency, buildings offer great potential for savings resulting from reduced consumption of energy-generating fuels and corresponding reductions in CO_2 emissions

S1 scenario assumes a slight increase in GDP and energy consumption, entailing an increase in population size, construction of buildings and energy consumption, which would increase almost linearly, and no implementation of energy efficiency measures;

S2 scenario assumes a moderately rapid increase in GDP and energy consumption, without additional energy efficiency measures;

S3 scenario assumes a moderately rapid increase in GDP and implementation of energy efficiency measures resulting in considerable savings.

GHG emission reduction in transport sector

The S1 scenario is based on the trends of an increasing number of motor vehicles at an average annual rate of around 5.8% for the average age of the vehicle fleet of between 12 and 15 years, an absence of homologation measures, and an average annual increase rate of diesel and petrol consumption by 3.7%.

The S2 scenario is based on the introduction of **additional technical measures** for road motor vehicles to improve the efficiency of motors and reduce fuel consumption. Under this scenario, the rate of increase in the number of road motor vehicles is identical to the S1 scenario, with an anticipated improvement in the quality of fuel used and the road infrastructure.

S3 scenario assumes significant mitigation: i.e., significant emission reductions in the transport sector through the implementation of EU directives in BiH by 2025

GHG emission reduction in forestry sector

The S1 scenario is based on the observed trend of decreasing forest areas in the post-war period, and it does not include any additional measures aimed at counteracting this existing trend

The S2 scenario is based on the introduction of specific measures designed to stimulate preservation of existing forest cover. The primary measure involves increasing the sinks capacity through the practical application of specific silviculture methods to increase carbon sequestration in tree biomass in existing forest areas.

The S3 scenario is based on the assumption that BiH will become a member of the EU by 2025 and will thus be obliged to comply with directives related to the forestry sector/ certification programs which aim to improve sustainable forest management.

Mitigation potentials in agriculture

Mitigation potential in the agricultural sector in BiH can be observed in two ways:

1) the potential for GHG sinks; and
2) 2) the potential to reduce sources of greenhouse gas emissions.

The S1 scenario does not assume any major changes in the sector, and the share of agriculture in total economy remains at the same level;
The S2 scenario assumes positive changes in agricultural land use and a moderate increase in average returns and the share of agriculture in the economy;
The S3 scenario, as in most other sectors, is based on the expectation that by 2025 BiH will become an EU member.

GHG emission reduction scenarios in the waste management sector

Given that the waste management sector accounts for approximately 6% of total emissions in BiH, its direct impact in terms of GHG emission reductions is not very high. However, measures such as the reduction of waste, recycling, and energy generation from waste can have a significant impact on emission reductions in general.

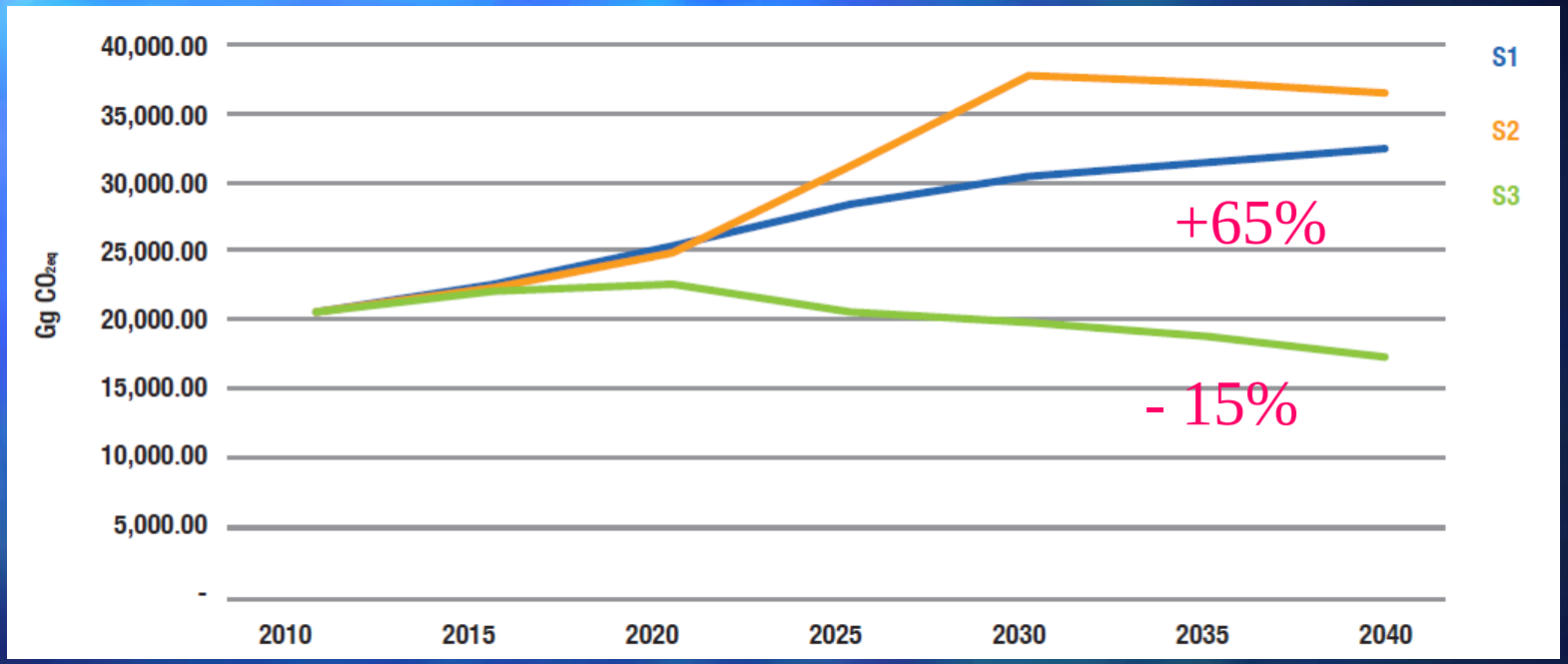
The S1 scenario is based on the long-term continuation of existing practices in production and the overall organisation of waste collection and disposal in the country;

The S2 scenario assumes the construction of regional sanitary landfills with biogas collection and flaring systems in the entire territory of BiH, and an increase in the recycling rate of up to 30% by 2040;

The S3 scenario assumes the implementation of technologies and legislation applied in EU countries, increased levels of recycling at source and at landfills (including batteries and accumulators, tyres, glass and other waste from specific streams that currently ends up at landfills), and the transition to a billing system based on the volume of waste generated.

While the S1 and S2 scenarios envisage an increase in CO_2e emissions from the waste management sector by 2040 (with an increase of more than 130% compared to 2010 under the S1 scenario), the S3 scenario envisages a decrease of nearly 50%.

Total annual CO_2eq emissions from the energy sector, RES, district heating, transport, agriculture, and waste in BiH for the period 2010–2040, according to the S1, S2 and S3 scenarios (Gg CO2eq)



Final remarks

Overall, the FBUR Report indicates that GHG emissions are expected to increase by approximately 65 per cent during the period 2010–2040, within the S1 scenario. However, due to advanced mitigation actions under the S3 scenario, they may be reduced by 17 per cent during the same period;

Information and data collection and management as one of the main challenges to enhance the quality of GHG inventories and provide better transparency when reporting on mitigation actions. The information provided in Bosnia and Herzegovina's second national communication regarding constraints and gaps related to institutional, legal, financial, technical and human capacity remains relevant for the BUR

The key capacity-building needs

(a) Building capacity of institutions and experts involved in data collection, measurement and management, calculating emissions and emission factors, and research and projections of national GHG emissions;

(b) Developing vertical and horizontal cooperation and coordination among competent institutions as well as information flow between responsible agencies and across sectors;

(c) Integrating of climate change considerations in sectoral policies and strategies;

(d) Raising private sector and public awareness regarding problems associated with climate protection and potential impacts of climate change;

(e)Developing the weak institutional capacity to implement effective and forceful policies, such as economic instruments, that can change the behaviour of people and institutions towards environmental protection;

(f) Reporting information on the progress of implementation of the mitigation actions and the underlying steps taken or envisaged and the results achieved;

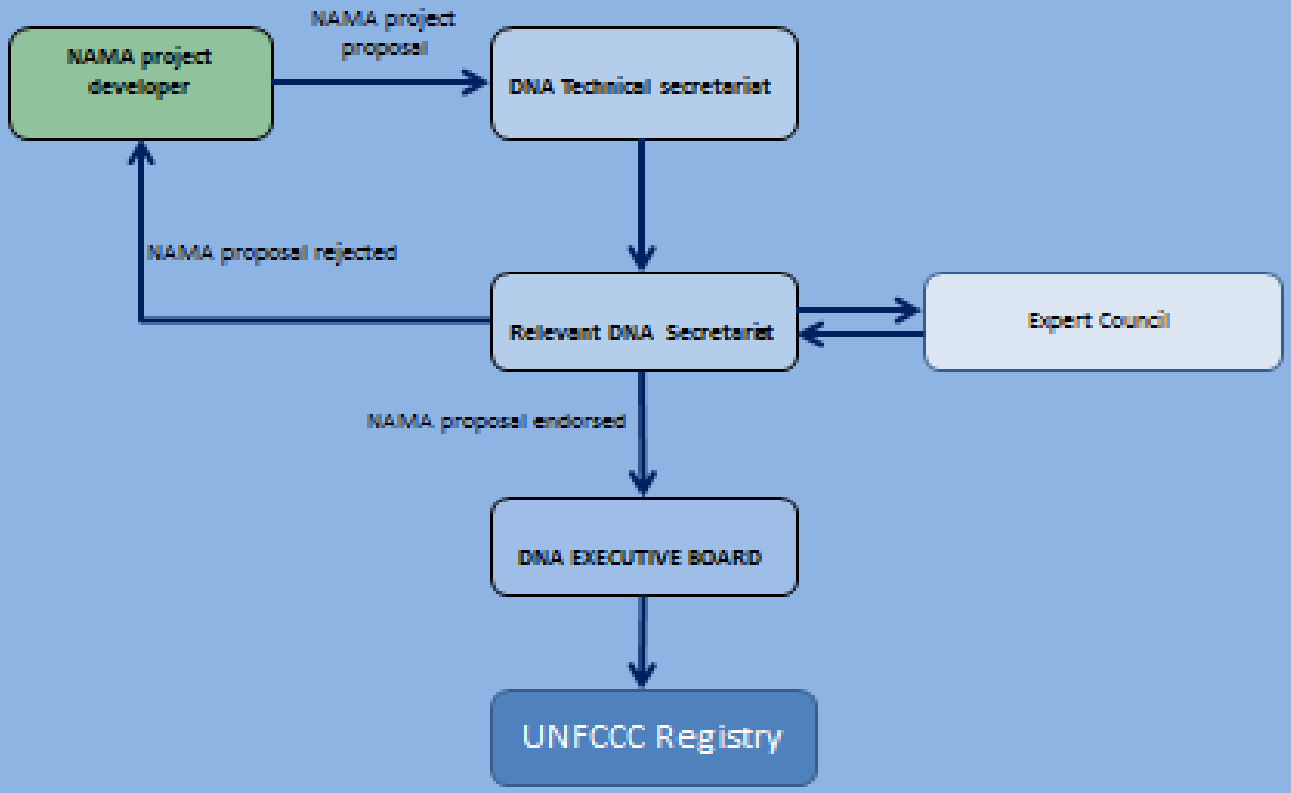
(g) Addressing the lack of effective information networks, as well as standards for the processing and preparation of information to be fed into the network, as the biggest problem in implementing NAMA programmes;

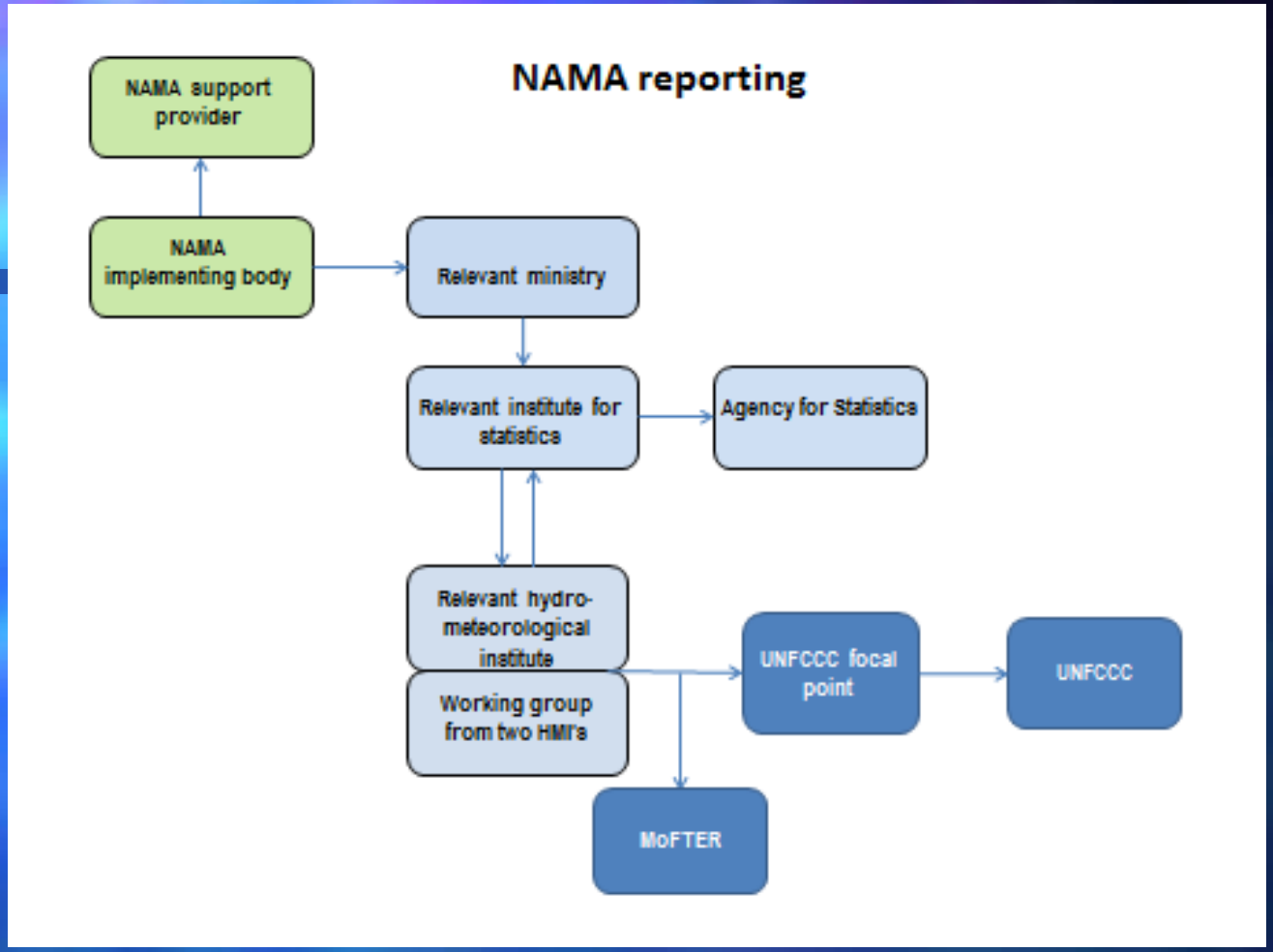
(h) Establishing an information network between NAMA projects and relevant ministries, in order to increase the flow of information on NAMA activities.

Example of mitigation measures as presented in FBUR

Climate change mitigation activities	Sector	Status (planned/ ongoing/ completed)	Objective	Description (type of activity, mitigation method, gas, timeframe)	Coordination and management	Estimated emission reduction Gg CO_2	Other effects	Mode / type of support	Preparation and implementation costs
Construction of biomass-fired cogeneration (CHP) plants	Energy production	Planned	Reduction of heating costs, local revenues from the sale of electrical energy	Construction of cogeneration plants fired by wood cuttings total capacity of 200 MWe in the period 2013–2025	Entity ministries of energy, municipalities with biomass potential and forest management companies	1,080 (880 from electricity production and 200 from production of thermal energy)	2,500 new permanent jobs created, Improved air quality, development of an industry that needs thermal energy, sustainability of forest management companies	International development banks have on-going projects related to financial support (IFC, EBRD)	Preparation: € 100.000 per MWe Implementation: € 4 mil. per MWe (investment in plant and primary line)

NAMA endorsement process in BiH




NAMA reporting
NAMA support provider
NAMA implementing body
Relevant ministry
Relevant institute for statistics
Agency for Statistics
Relevant hydro-meteorological institute
Working group from two HMI's
UNFCCC focal point
UNFCCC
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THANK YOU FOR ATTENTION!!!!