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I TURIZMA



MRV System for GHG emissions from Tourism Sector in Montenegro

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INDEX

General Index

EXECUTIVE SUMMARY	5
1.1. Presentation.....	5
1.2. Introduction	7
1.3. MRV Significance.....	9
2. MRV System in the TOURSIM SECTOR	10
2.1. Starting data analysis.....	11
2.2. Measurement	13
2.3. Reporting.....	16
2.4. Verification.....	17
2.5. QA/QC	18
3. BENEFITS FROM SECTORIAL MRV SYSTEM	18
4. LINK BETWEEN NATIONAL MRV SYSTEM AND TOURISM SECTORIAL ONE	19
4.1. Integration of Tourism MRV system with national one.....	21
4.2. Institutional arrangements and process.....	21
4.3. Definition of GHG mitigation action and accounting for Tourism sector.....	22
4.4. Establishing of data collection and reporting responsibilities.....	22
4.5. Verifying and quality assurance	23
5. CONCLUSIONS AND RECOMMENDATIONS.....	24
REFERENCES	25

Table index

Table 1. Division of Sub-sectors related to Tourism considering sources and geographical distribution.....	12
Table 2. Measurement Phase.	15
Table 3. Reporting Phase.	16
Table 4. Verification Phase.	17
Table 5. Indicators for Tourism mitigation actions.	22

Figure index

Figure 1. Total Sectorial GHG emission's share by Geographical origin and by different GHG.	7
Figure 2. International MRV	8
Figure 3. Domestic MRV content.....	9
Figure 4. Steps for MRV System.	10
Figure 5. Structure of National MRV System.	20

Acronyms

CH ₄	Methane
CO ₂ e	CO ₂ -equivalents
CO ₂	Carbon dioxide
COP	Conference of Parties
DEFRA	UK Department for Environment, Food & Rural Affairs
EPA	Environmental Protection Agency
HFCs	Hydrofluorocarbons
GDP	Gross domestic product
GEF	Global Environment Facility
GHG	Greenhouse effect gas
GWP	Global warming potential
IPCC	Intergovernmental Panel on Climate Change
MONSTAT	Montenegro National Statistical Office
MRV	Measurement, reporting and verification system
NIR	National Inventory Report
N ₂ O	Nitrous oxide
NTO	Montenegro's National Tourist Organization
QA/QC	Quality assurance/quality control
TCNTM	Towards a Carbon Neutral Tourism in Montenegro
TSA	Tourist Satellite Accounts
UNDP	United Nations Development Programme

EXECUTIVE SUMMARY

The main goal of this Report is to develop a Measurement, Reporting and Verification (MRV) system for GHG emissions from tourism sector, harmonized with the schematic and basic national MRV system established under the First Biannual Update Report (FBUR). It must be stated since the beginning that considering the simplicity of the national MRV system and considering the wish of the involved local stakeholders and beneficiaries to have an elementary structure which could be developed in the future, the sectorial MRV will be based on the main principles handled for the national one. This last one, indeed, considering the status of Montenegro as non-Annex I country, is structured and detailed enough for the purposes of the country. However, the importance of supporting Montenegro's ministerial, EPA and MONSTAT staff, having international experts working closely to local staff is stressed, showing and teaching them best practices through learning by doing approaches in order to allow Montenegro arriving prepared for 2020. Indeed, capacity building represents the most suitable tool to learn how to develop and implement MRV systems and especially concerning the variety of data, indicators and related topics explained below. This is emphasized considering the basic principles beneath MRV, which is regularly betterment and updating of data, indicators, institutional roles and responsibilities in front of external audience and international community.

Regarding the elaboration of the MRV system for GHG emissions from Tourism sector, the used data is the one fixed in the Methodology for GHG Accounting Report presented by the Consortium Factor CO₂-EQO and approved by UNDP in November 2015. Using 2013 as baseline year (except the case where no specific data were available for 2013) and using top-down, bottom up and hybrid methodological approach to the emitting sector, the baseline recalculation from Tourism Sector in Montenegro was developed considering data availability, as well as an accounting GHG methodology for subsequent years.

The MRV Report is structured as follows:

- First, a brief analysis of the GHG emissions from Tourism sector with explanations of lessons learnt from the Baseline report will be presented.
- In continuation, tourism and related MRV will be defined.
- Next, the protocols for monitoring, reporting and verification with related benefits connected to the adoption of a sectorial MRV structure will be introduced.
- Further, the linkage between sectorial MRV and the national one will be put forward
- Finally, conclusions will be drawn and recommendations will be suggested to facilitate future improvements of the sectorial MRV system.

1.1. Presentation

Montenegro is a non-Annex I Country with an estimated GDP per capita equal to 5,356 EUR according 2013 estimations. In terms of climate change and related emissions, it must be cited that considering its size dimension any variation in the percentage of its emissions will affect the national emission accounting. Tourism, in particular, is among the dominant sectors for the national economy, indeed, the number of tourists visiting the

country is in numerical terms annually more than twice in comparison to the local population¹. The emissions deriving from tourism sector and related sub-sectors have been estimated to be 2.5% of the national one.

Notwithstanding the above-consolidated statement, the national GHG inventory does not cover tourism as a separate energy end-use sector, neither there are estimates of the transport-related GHG emissions from tourism activities. Only a preliminary analysis developed in the framework of this project preparatory phase, affirmed that tourism sector was responsible to directly account for some 3-5 % of Montenegro's total national GHG emissions or cca 70-100 ktCO₂/year, excluding the bunker and other fuels for international cross-border travel.

Therefore, considering the importance of tourism sector for the national economy system and considering the escalation in the numbers (in terms of number of visitors, therefore increase of electricity emissions, increase of fuel emissions, increase of waste and increase of emissions derived from accommodation and related services) of this sector and the associated sub- ones; in order to achieve quality project results, there is a requirement to establish accurate Measurement, Reporting and Verification (MRV) system for GHG emissions from tourism sector by providing the essential knowledge and data for estimating, reporting and verifying data quality, correctness, completeness, comparability, transparency and accuracy are required.

Indeed, sectorial GHG emission baseline and MRV system can be regarded as the essential building blocks and prerequisites for introducing carbon offset schemes and other financing mechanisms, such as credited NAMAs. Moreover, MRV of these actions are important to generate transparency, built trust on their effectiveness and facilitate decision-making process. For these reasons guidelines for developing and setting up MRV protocols and systems for projects need to be introduced.

Then, this sectorial MRV system needs to be linked with the national one as the competent authorities are exactly the same. In addition, as stated since the beginning of this report and as it will be better exploited in the context of this work, the voluntary character of Montenegro in adopting the national and sectorial MRV system has to be considered as the starting point of any analysis. It derives that the MRV has to be centred on the existing domestic processes, methodologies and expertise and it has to be reviewed later on in order to consider the new status of Montenegro, the experiences and lessons learnt made before 2020.

Finally, it should be evidenced that Montenegro has already gained consolidated experience with a MRV at a project level under the Kyoto Protocol's Clean Development Mechanism (CDM). Whether these activities are of direct use as MRV instruments for possible future crediting mechanisms is not clear. However, and in general, it should be mentioned that there is little consistent experience with reporting either emissions (or emission reductions) at a sectorial level.

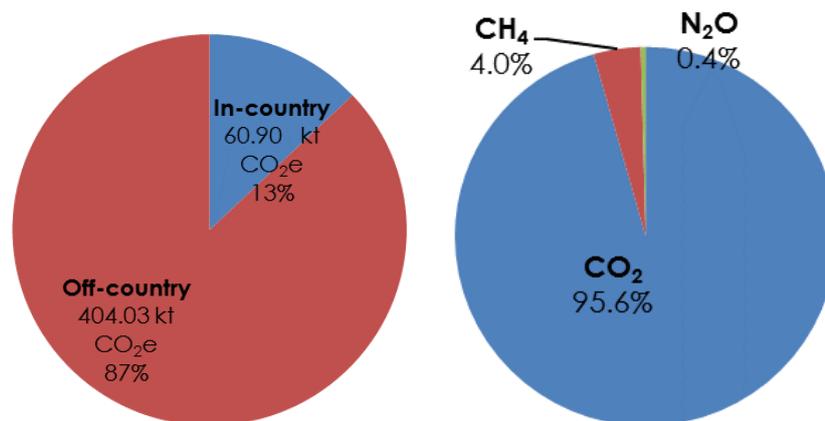
¹ INDC

1.2. Introduction

From the recalculation of the baseline emissions from tourism in Montenegro in year 2013, it emerged that the emissions are 464.93 kt CO₂e where the majority of these emissions (404.03 kt CO₂e; 87% of the total) took place out of the country, in the transportation of foreign tourists from their countries of origin to Montenegro. The missing part (60.90 kt CO₂e; 13% of the total) is country-based and has its source in the touristic activities, transportation and waste management within national borders.

Figure 1. Total Sectorial GHG emission's share by Geographical origin and by different GHG.

Source: Own elaboration.



Comparing the baseline emissions with the total emissions of Montenegro, as reported in the NIR for year 2013, it turns out that the country-based emissions from tourism stand for 2.5% of the total national emissions.

Therefore, as it emerged from the above-mentioned data and as mentioned in sectorial documents², while Montenegro contributes marginally to global emissions (0,009%), especially considering its size, the application of carbon neutral tourism principles could significantly reduce the carbon emission of the whole country especially taking into account the incidence of the transport voice on the global national figures. Moreover, this approach towards carbon neutral Tourism sector will open up further opportunities for the country in terms of benefitting financially from mitigation mainstreaming activities through a mechanism established in the framework of United National Climate Change Convention the so-called Measurement Reporting and Verification system (MRV).

The MRV under the Convention for non-Annex I countries is composed of different elements developed through the years in occasion of different COPs from 2004 to 2013 and some of them are implemented at international level and some others at national level.

² INDC, national emissions of the GHG represent only 0,009% of global emissions and the net per capita GHG emissions in Montenegro was 7.25 tCO₂eq in 2010

It derives that MRV has a double dimension:

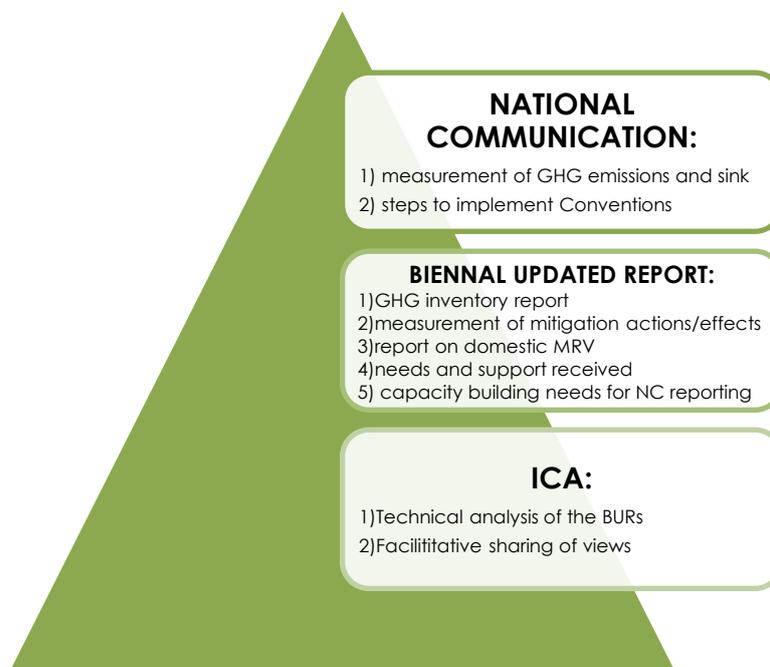
INTERNATIONAL

Where MRV for non-Annex I countries consists of:

- 1) Guidance on reporting through national communication and BURs;
- 2) Guidance on setting up domestic MRV framework;
- 3) A process for consideration on information submitted by non-Annex I Parties in their BURs through ICA.

Figure 2. International MRV

Source: Own elaboration.



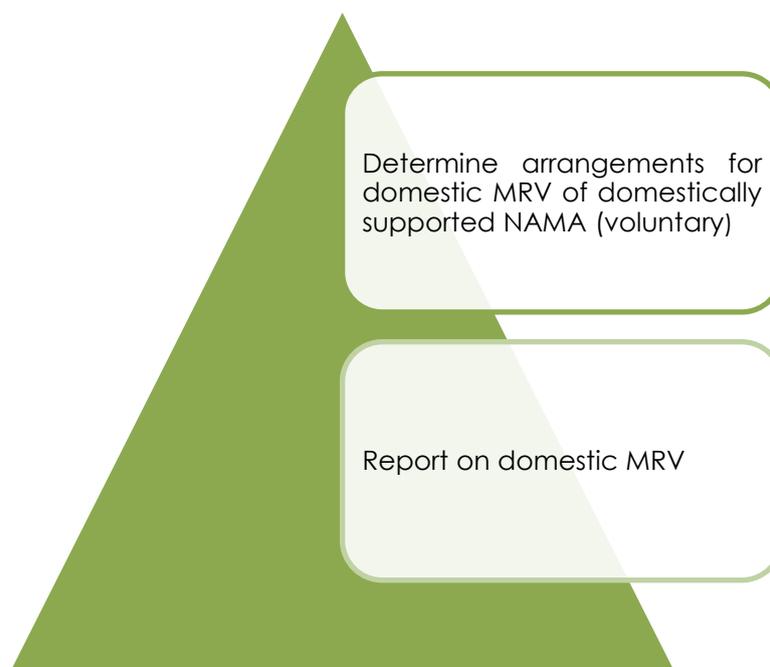
NATIONAL

Where Parties of the Convention are expected to implement the international guidelines for national MRV framework and to prepare and report information according to the guidance on reporting through National Communications and BURs, including information on GHG emissions, removals by sinks, mitigation actions and their effects and support needed and received.

Indeed, if at international dimension they are working on achieving 2^o objective, at national level the challenge is to develop national development strategies aimed at achieving the above international target considering national level, national needs and national ambition.

Figure 3. Domestic MRV content.

Source: Own elaboration.



1.3. MRV Significance

In general terms, the MRV system serves the purposes to improve continuously the intended contribution of a country³ and the related actions as defined in the national and sectorial policies and strategies. Indeed, the intended contribution and the defined actions in terms of related quantified emission reduction targets already exist and they are written on the paper. The objective of the MRV and in particular of the sectorial one is to measure, monitor through reporting processes and verify these actions, the progress towards the fixed targets settling with accurate rules how, who, when and why these ruling should be controlled.

The establishment of a MRV in the Tourism sector is imperative for the following reasons:

- 1) It helps to have transparency, accuracy, accountability and comparability of information regarding impact of climate change on tourism sector to recognize good practices, promote a capacity building process and allow an international benchmarking. This aspect is of particular relevance in a country where the constitution appoints the nation as an ecological state and where the touristic marketing campaign is focused on the quotation "MONTENEGRO WILD BEAUTY";
- 2) It helps the acknowledgment and the visibility of sectorial mitigation actions;

³ The intended contributions in terms of targets can be both quantitative and qualitative.

- 3) It helps to quantify the real impact of sectorial and sub-sectorial policies in terms of GHG emission from each different identified gaps;
- 4) It helps to account national progress in the framework of international obligations as set during UN COPs;
- 5) It helps to identify gaps and needed international support;
- 6) It helps to have access to financial support from international donors.

Indeed, during the preparation of the Baseline report for Tourism sector, it emerges the following complications, which could be solved later on with the construction of a sectorial MRV:

- 1) **QUALITY OF DATA:** some of them are lacking or not sufficient detailed. This problem could be solved in the first phase of start analysis data (table n. 2);
- 2) **TECHNICAL CAPACITY:** it is very limited due to the scarcity of Human Resources in the Environmental Protection Agency (EPA), in the Ministry of Sustainable development and Tourism and in National Statistical office (MONSTAT);
- 3) **INSTITUTIONAL SYSTEM:** *ad hoc* and appropriate institutional systems are still embryonic due to the voluntary character of MRV system pre-2020;
- 4) **FUNDING:** it is not always calibrated to the real needs of the country especially for capacity building process;
- 5) **HUMAN RESOURCES:** they are not sufficient, indeed, in EPA there is only one subject dealing with GHG emissions and keeping the contact with MONSTAT on this theme;
- 6) **AWARENESS:** lack of awareness on MRV and its importance.

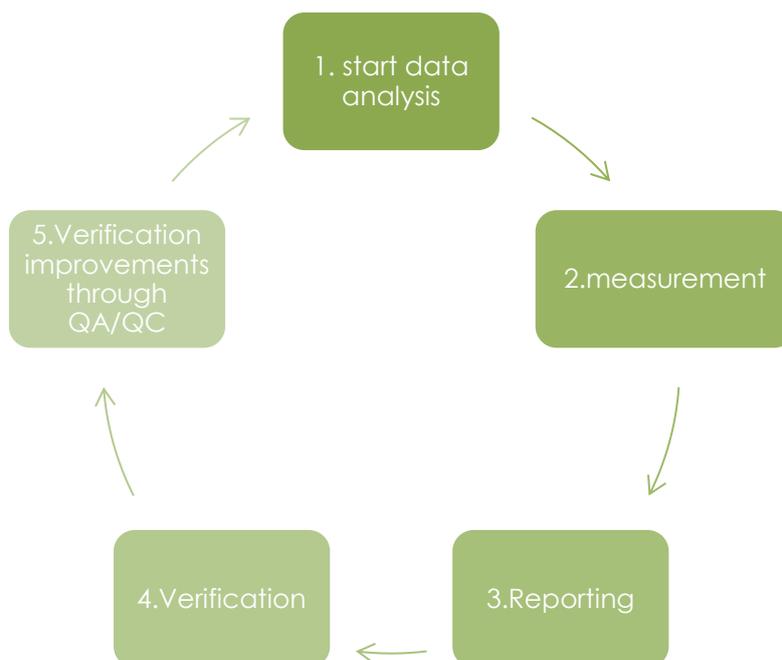
2. MRV System in the TOURSIM SECTOR

MRV of Tourism emissions will be used to measure, report and verify quantifiable emissions at sectorial and sub-sectorial level related to sectors directly and indirectly affected by tourism. This will allow improving the basis of information and to monitor mitigation actions for national and sectorial planning, implementation and coordination of sectorial mitigation activities developed through bottom up, top down or hybrid approaches.

MRV system of GHG emissions from Tourism sector will include the identification, definition and set of clear roles as well as institutional responsibilities in terms who is doing what, what will be done, how will be done and when will be done.

Figure 4. Steps for MRV System.

Source: Own elaboration.



2.1. Starting data analysis

This first phase is related to the sectorial intended contribution in form of a target as established in the National strategy for sustainable development, in the climate change mitigation action plan⁴ (where sustainable tourism is appointed as a medium priority for the country) and in Montenegro Tourism Development strategy to 2020, operationalized in actions which needs to be monitored by the sectorial MRV and around which the sectorial MRV should be built on.

It emerges, that the first step is to identify institutional arrangements, methodologies, data collection systems through GHG inventories, energy balances, NTO official report and all other existing information on data quality.

IPCC methods, sectorial specific estimations and tools will be used to start the development of a functional system for sectorial MRV.

⁴ Tourism and services, Measure 20: Support to the sustainable tourism (eco-tourism) in the with additional measure scenario: Long-term sustainability requires a balance between sustainability in economic, socio-cultural and environmental terms. The need to reconcile economic growth and sustainable development also brings in an ethical dimension. Major challenges for sustainable tourism include:

- preserving natural and cultural resources
- limiting negative impacts at tourist destinations, including use of natural resources and waste production
- promoting the wellbeing of the local community
- reducing the seasonality of demand
- limiting the environmental impact of tourism related transport
- making tourism accessible to all
- improving the quality of tourism jobs.

After this analysis and before fixing the final skeleton of the sectorial MRV system, best practices adopted by other countries should be contemplated especially in terms of cost-effectiveness of all the measures to be included in the sectorial MRV.

WHAT WILL BE MEASURED?

- GHG Emissions and emission reductions from tourism sector and sub-sectors mentioned below using as reference the baseline report for tourism sector (year of reference 2013)

Table 1. Division of Sub-sectors related to Tourism considering sources and geographical distribution.

Source: Own elaboration.

Geographical distribution	Sector	Source
IN-COUNTRY EMISSIONS	Accommodation and other services	Fuel consumption by tourists in: <ul style="list-style-type: none"> • Accommodation services. • Food and beverage services. • Travel agencies services. • Cultural services. • Sport and recreational services. • Other services.
	Road transport	Fuel consumption of vehicles used for tourists transportation within Montenegro.
	Railway transport	Fuel and electricity consumption due to tourists using the railway system within the Montenegro.
	Air transport	Fuel and electricity consumption in land activities and airport facilities due to tourists visiting Montenegro.
	Ship transport	Fuel and electricity consumption due to: <ul style="list-style-type: none"> • Inland navigation for tourists transportation. • Cruises at berth.
	Waste	Degradation of waste generated by tourists during their stay in Montenegro: <ul style="list-style-type: none"> • Solid waste • Wastewater
OFF-COUNTRY EMISSIONS	Road transport	Fuel consumption of vehicles used for foreign tourists transportation from origin country to Montenegro and back.
	Railway transport	Fuel and electricity consumption due to foreign tourists using the railway system from origin country to Montenegro and back.
	Air transport	Fuel consumption of planes due to foreign tourists transportation from city of origin to Montenegro and back.
	Ship transport	Fuel consumption of ships used for foreign tourists transportation from origin country to Montenegro and back.

WHAT WILL BE REPORTED?

- GHG Emissions from emission sources quoted in the above template as mentioned and identified in the National Communications, BURs, GHG Inventory, Energy Balance and sectorial approved studies (i.e. NTO). Therefore:
 - 1) Tourism sector, tourism sub-sectors and related type of gas (CO₂, CH₄, N₂O and HFCs⁵).
 - 2) Institutional Arrangements.
 - 3) Methodologies used (e.g. bottom up, top down and hybrid with related limitations), data sources (e.g. energy balance for 2013, gross output for 2013, emission factors, default values, CH₄ recovered, CH₄ producing capacity and similar).
 - 4) Methodology used to construct baseline (IPCC, GEF, and KYOTO PROTOCOL).
 - 5) Assumptions.
 - 6) QA/QC procedures.
 - 7) Level and sources of uncertainty in the baseline construction as well as methods to determine the uncertainty.

WHAT WILL BE VERIFIED?

- Data Emissions, activity indicators, from emission sources quoted in the above template on sectorial level considering indicators, assumptions, comparison to baseline.
- Implementation of quality assurance and quality control procedures to improve transparency, accuracy, consistency, completeness and comparability as well as the confidence in the emission estimations.

Verification can be defined as a system able to install a kind of learning process to stimulate continuous control and therefore improvement in the procedures and not as a way to control countries.

2.2. Measurement

The measurement and monitoring of Tourism sector is related to all emissions and emission reduction of gases produced in the sub-sectors affecting directly or indirectly tourism one that are:

- -ACCOMODATION AND OTHER SERVICES (accommodation services, food and beverage services, travel agency services, cultural services, sport and recreational services);
- -TRANSPORT (in- country and off country: road, railway, air and ship);

⁵ Even if this one is not mentioned in the baseline report for tourism as no data were available for HFCs

- -WASTE (solid and wastewater).

The scope of this measurement is mainly linked with accuracy, detail and transparency of information as well as good communication system at sectorial level.

The table below illustrates the main figures to be considered in the measurement phase for TOURISM SECTOR

Table 2. Measurement Phase.

Source: Own elaboration.

What is measured?	Who measures?	How to measure?	When to measure?
<p>1) Emissions and emissions reduction of the following GHG : CO2, CH4, N20 and HFCs. Actually in the baseline report for Tourism sector prepared by Factor CO2 it was not possible to determine emissions from HFCs due to lack of data. However, it should be better to consider them as well.</p> <p>2) Ad hoc and sub- sectorial activity data such as:</p> <ul style="list-style-type: none"> -FOR ACCOMODATION AND OTHER SERVICES: energy balance, gross output, TSA, tourist overnight stays, emission factors, -FOR ROAD TRANSPORT: tourist's countries of origin; tourist's off-country modes of transport, tourist's usage of vehicle, vehicles occupancy, factor emission; -FOIR RAILWAYS TRANSPORT IN COUNTRY: energy balance, gross output, TSA, tourist overnight stays, emission factors, -FOR RAILWAY TRANSPORT OFF-COUNTRY: tourist's countries of origin; tourist's off-country modes of transport, tourist's usage of vehicle, vehicles occupancy, factor emission; -FOR AIR TRANSPORT DATA: airport energy consumptions, foreign passengers, total passengers, emission factors; -FOR AIR TRANSPORT OFF-COUNTRY: flights' cities of origin, foreign passengers, total foreign passengers, emission factors; -SHIP-INLAND: energy balance, gross output, TSA, tourist overnight stays, emission factors, -MARITIME NAVIGATION: number of arrivals by vessel, number of arrival by cruise, emission factors; -CRUISES AT BERTH: number of cruises arrivals, number of cruises per gross tonnage, average time of stay, hourly fuel consumption of cruises at berth, emission factors; -FOR WASTE, SOLID WASTE: tourist waste generation rate, waste characterization, GH4 recovered, default values; -FOR WASTEWATER: CH4 producing capacity, wastewater management systems' degrees of utilization, per capita protein consumption, default values, tourists' overnight stays. 	<p>Several stakeholders are involved from governmental department of the Ministry for Sustainable Development and Tourism (Environmental Protection Agency), National Statistical Office (MONSTAT), Ministry of Interior (POLICE AUTHORITY), Ministry of Transport (Kotor, Bar, H. Novi, Budva and Zelenika Port Authorities and railway Authority).</p> <p>From Private sector there are data from National Touristic organization, Airport from Podgorica and Tivat</p>	<p>Through estimations, generally multiplying activity data with emission factors, using default values as set in IPCC and sectorial studies</p> <p>In the preparation of baseline report for tourism sector, the calculations and measurements were performed using a bottom-up approach, in which data gaps were filled through estimations and assumptions of the report's author</p>	<p>It is linked to reporting requirements as fixed at national as well as international level (National Communication- every 4 years- and Biennial Report for UNFCCC- every 2 years from the submission)</p>

2.3. Reporting

Table 3. Reporting Phase.
Source: Own elaboration.

What information is reported?	Who reports?	How reporting?	When reporting?
<p>1) GHG tourism estimation; 2) GHG tourism sub-sector estimation; 3) Tourism activity; 4) Tourism sub-sector activities; 5) Type of gas from tourism; 6) Type of gas from tourism sub-sectors 7) Institutional arrangements; 8) Description of the methodologies used to assess the baseline; 9) Description of the methodologies used to defined the sectorial GHG inventory; 10) Data sources per sector, per tourism sub-sectors, per geographical distributions (in-off country emissions); 11) Data sources and related assumptions; 12) Methodology to determine uncertainty and assumptions; 13) QA/QC</p>	<p>According to the sectorial/ sub-sectorial scope:</p> <p>1)Ministry of sustainable development and tourism through EPA;</p> <p>2) National statistical office- MONSTAT-;</p>	<p>1) Using Reporting Guidelines;</p> <p>2) With National Communications and Biennial Updated Report;</p> <p>3)NAMA registry</p>	<p>It is linked to reporting requirements as fixed at national as well as international level (National Communication- every 4 years- and Biennial Report for UNFCCC- every 2 years from the submission)</p>

2.4. Verification

Table 4. Verification Phase.
Source: Own elaboration.

Why?	What information is verified?	Who verifies?	How to verify?	When to verify?
<p>Enhance the credibility of the national policy as well as the sectorial one in terms of GHG sectorial reduction and related improvements</p>	<p>1) Tourism sectorial GHG assessment (emission-source based)</p> <p>2) Mitigation SECTORIAL measures and their results on tourism sector</p>	<p><u>DOUBLE CONTROL SYSTEM:</u></p> <p>1) AUTO CONTROL: verifying nationally-reported data against internationally statistics/ compiled estimates such as FAO, IEA</p> <p>2) Third party verification of estimates and methods;</p>	<p>1) Comparison with guidelines keeping into consideration the position of non-Annex I country of Montenegro</p>	<p>Up to now there is no real international verification of review process for national Communications and BURs submitted by non-Annex I countries.</p> <p>Montenegro has just submitted its BURs</p>

2.5. QA/QC

In order to guarantee the transparency, consistency, completeness, comparability and overall confidence of the tourism sectorial and sub-sectorial estimates a common international good practice is to develop QA/QC PROCEDURES by all the involved stakeholders, no matter if private or public, therefore data providers and entity in charge of compiling the emission estimates.

This system consists in mainly two phases where the last one (QA) should be developed by an external subject not directly involved in the compilation of data in order to guarantee a further strict control to procedures, data and indicators used and adopted in all the phases.

In the QUALITY CONTROL technical activities will be analysed in order to identify possible mistakes and omissions, ensure integrity, verify completeness of data in terms of indicators per activity data, units, emission factors and sources, identify parameters used across various sectorial calculation spreadsheets, document and record all information derived from this control.

In the QUALITY ASSURANCE instead, a peer review and/or an audit should review, verify and therefore guarantee that data quality objectives are met, determine conformity with procedures, effectiveness of the QC system and recommend improvements to be set.

3. BENEFITS FROM SECTORIAL MRV SYSTEM

As mentioned above clarity in data setting, good communication and clear share of roles and responsibilities are the first elements to guarantee the success of an MRV system, but these are not apparently enough. Indeed, the key benefits sought with the implementation of this sectorial MRV are the following:

- 1) Good quality of Data from emission sources: it will allow prioritizing effective and cost benefits towards carbon neutral tourism action in the framework of GHG mitigation actions;
- 2) Good sectorial data and good baseline will allow meeting the principles of GHG inventory (transparency, consistency, comparability, completeness and accuracy), even if Montenegro as non- Annex I country does not have yet real obligations in terms of reduction;
- 3) Considering the pivotal role of Tourism in the national economy, a clear picture of tourism sectorial data and emissions in the context of national priorities will allow to strengthen the weakness of the current system which does not consider disaggregated tourism data. Indeed, clarity on improvements needed in the tourism sector, in terms of data collection, accountability of data, roles and responsibilities of involved stakeholders, necessary capacity building process for national stakeholders, financial support needed as well as improvements to be done at the existing system will be the

key elements deriving from the preparation of a sectorial MRV not only in the national context but at international dimension;

4) Develop a better understanding of a relevant sector of the national economy due to its common objectives across a wide range of national stakeholders, fostering cooperation with other public and private actors, clarifying the roles and responsibilities of the main bodies in the governmental system in terms of GHG data management, measurement, reporting and verification. This will allow obtaining a better reputation in terms of international process as well as an international recognition for national performances.

4. LINK BETWEEN NATIONAL MRV SYSTEM AND TOURISM SECTORIAL ONE

Considering the importance of the national MRV system for each country and in this case for Montenegro in terms of:

- 1) Underpinning national GHG data quality;
- 2) Helping identify national priorities (including possible NAMAS);
- 3) Policy planning, prioritization and improving policy coherence;
- 4) Keeping a record of NAMAs in place tracking progress of the effectiveness of NAMAs;
- 5) Assurance of data quality in order to address national obligation to UNFCCC, progress national engagement (even if based on voluntary approach) in the UNFCCC process, access climate finance and participate in market mechanism (e.g. emission trading system)

-considering the basic structure of the national MRV system established following exactly the guidelines of UNFCCC where the data for the greenhouse gas inventory are obtained from various sources following this procedure:

- 1) Ministry of Agriculture and Rural development (LULUCF sector).
- 2) Ministry of Transport (Air and maritime transport).
- 3) Ministry of internal affairs (Road transportation) and then also directly from the specific industrial and energy installations.
- 4) Ministry of economy for Energy balance.
- 5) Montenegrin statistical office for providing official statistical data necessary for the greenhouse gas inventory. These data are then managed by Environmental Protection Agency (EPA) staff responsible for compiling of the greenhouse gas inventory. New IT solution to homologate standard data reporting format is in the phase to be developed, so that needed data can be automatically uploaded in to the software.
- 6) Ministry of Sustainable development and Tourism is the body entitled to approve these forms.

7) After having official standardized reporting format, EPA is responsible for monitoring and reporting of mitigation actions. The reporting is then controlled and verified.

8) EPA is conducting its own quality control procedures. 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 is used.

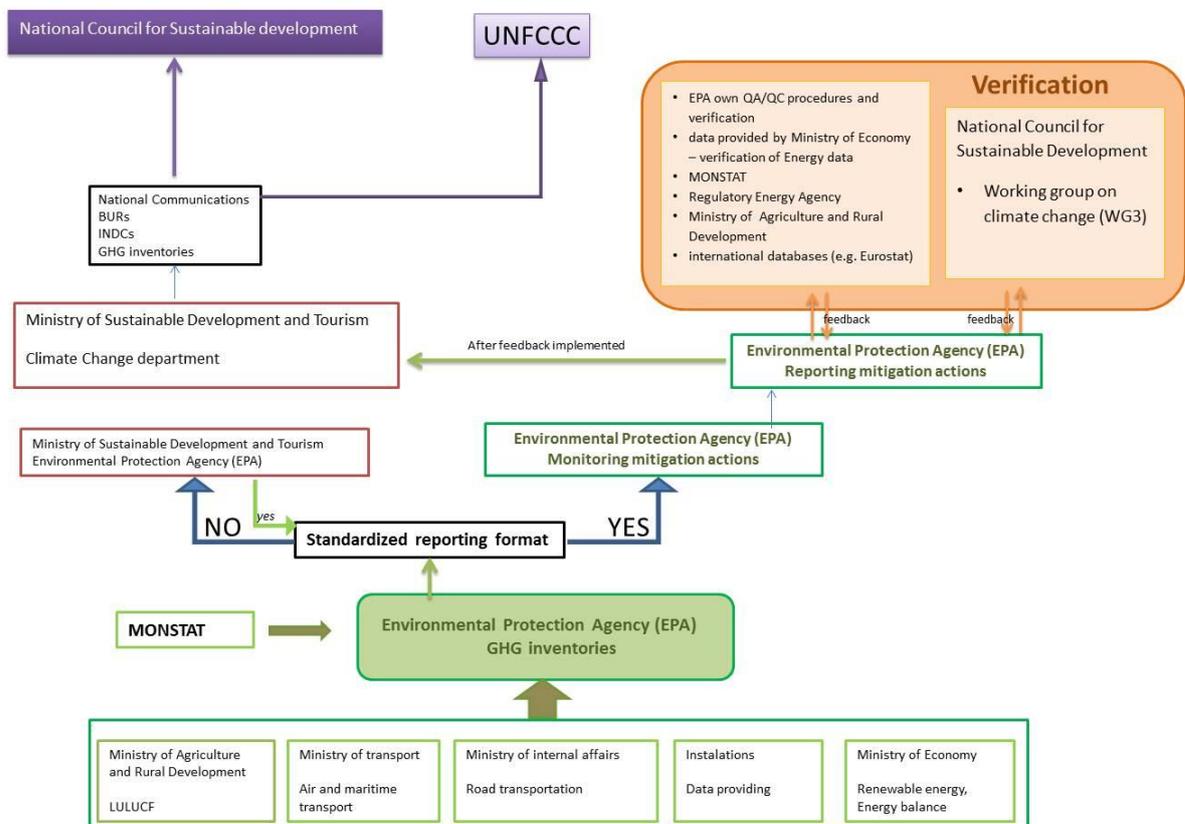
9) MONSTAT by itself is having its own verification procedures, which also includes official control from Eurostat.

10) As third party for verification, the Government has decided to use the just established Working Group on Climate Change under National Council of Sustainable Development.

11) EPA obtains comments from all experts and institutions participating on the verification and the comments are reflected in the final reporting.

12) 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 (EU, UNFCCC).

Figure 5. Structure of National MRV System.
Source: Montenegro's Domestic MRV system.



It must be said that the tourism sectorial MRV systems has to reflect the basic structure of the national one developed along 5 steps as the institutions involved, entities and competent body for GHG inventory are the same, being the Ministry of Sustainable development and Tourism the responsible body for both climate change issues and tourism. It emerges that it will be inevitable to have quite the same structure in terms of institution role and responsibilities as well as the content of the other 4 steps along which the national MRV system has been developed.

4.1. Integration of Tourism MRV system with national one

1. Institutional arrangements and processes
2. definition of GHG mitigation actions and accounting
3. establishing of data collection and reporting responsibilities
4. establishing of reporting obligations
5. verifying and quality assurance

4.2. Institutional arrangements and process

Montenegro has already recognized institutional responsibilities for policymaking, data collection, data analysis and reporting. However, due to the nature of voluntary, pragmatic, non-prescriptive, non-intrusive and country given approach of MRV guidelines for non-Annex I country, like Montenegro, for the QA/QC Montenegro is still in the phase of identifying specific, definitive responsibilities, which could vary after 2020.

Ministry of Sustainable Development and Tourism is the competent body in charge of coordinating Tourism strategy and policy as well as Climate change mitigation policies.

In this framework the reference documents are:

- 1) Montenegro tourism development strategy, December 2008;
- 2) National strategy for sustainable development where among the 7 priority areas there is "sustainable development as a leading sector of the economy (priority area n. 4)";
- 3) Development of a national climate change strategy by 2030, June 2015;
- 4) Intended Nationally Determined Contribution (INDC) to Montenegro following decision 1/CP.19 and decision 1/CP. 20, September 2015 ⁶;
- 5) First Biennial updated Report, October 2015.

The objective of establishing a sectorial MRV system for Tourism sector is to present the rights of specific institutions to reporting and monitoring of specific policies and measures as well as obligations of other institutions to provide needed data, even if up to now the

⁶ Even if Tourism sector is not a sector covered by INDC

position of Montenegro is still a voluntary one. Therefore, the sectorial MRV as well as the national one should be regarded, in this phase, only as a tool able to support the country in developing and improving already existing policies, measurements, data quality and data indicators based on national existing domestic process, expertise and methodologies.

4.3. Definition of GHG mitigation action and accounting for Tourism sector

Possible Tourism Sectorial and sub-sectorial mitigation actions can be measured using the following list of indicators to be tailored for each competent sector:

Table 5. Indicators for Tourism mitigation actions.

Source: Own elaboration.

TOURISM SUB-SECTORS	INDICATORS	UNIT
Accommodation and other Services	Average emission per tourist	Kg CO ₂ e/tourist
	Accommodation emission per overnight stay	Kg CO ₂ e/overnight stay
	Accommodation and other services employed per tourist	Kg CO ₂ e/tourist
In-country and Off-country Transport (road, railway, air, ship)	Off-Country transport emissions per foreign tourist	Kg CO ₂ e/foreign tourist
	In-Country transport emission per tourist	Kg CO ₂ e/tourist
Waste	Waste emission per tourist	Kg CO ₂ e/tourist

Measuring and reporting of GHG emissions in tourism sector as well as sub-sectors related to tourism can be used as the indicators to measure mitigations actions. Results of the GHG SECTORIAL inventory in Montenegro will then indicate the Montenegro's sectorial contribution to the global GHG levels as well as the contribution to the emission reduction.

4.4. Establishing of data collection and reporting responsibilities

This step is the same as the one mentioned in the national MRV as the main actors with responsibility for data collection are MONSTAT and Montenegro's National Touristic Organization (in the national one the responsibility for data collection were in charge of MONSTAT and installations as it emerges from the table n. 4.), while those for reporting are EPA and Ministry of Sustainable Development. The reason of this overlapping responsibility is mainly due to the fact that the Ministry of Sustainable Development and Tourism is in charge for both climate change and tourism and therefore related agencies have to work on both fields and related sub-sectors. In the framework of MRV, these governmental structures will be furthermore the subjects appointed to propose and implement sectorial policies and measures.

Regarding procedures on how to collect data, as mentioned in the national MRV, new IT solutions are in the phase of being developed in order to have standardized data and sheets to reduce time and cover all data needed. Moreover, the new role of MONSTAT after 2012 is a further guarantee that data collection system will be improved and will be in conformity with EU standards.

As mentioned in the national MRV system, this scheme is related to measurable, reportable and verifiable nationally appropriate mitigation actions, however, due to the status of non-Annex I country of Montenegro, no emission reduction targets are imposed to Montenegro in the framework of UNFCCC. However, following the decision 1/CP.19 and decision 1/CP.20 inviting parties to communicate to UNFCCC Secretariat their INDCs, Montenegro presented its Intended Nationally Determined Contribution in September 2015 where its emission reduction level is quoted as 30% by 2030 compared to the 1990 base year.

Properly established measuring and reporting system will give needed feedback information on the effectiveness of the sectorial mitigations measures, policies and projects.

4.5. Verifying and quality assurance

As mentioned in the national MRV, the last step of the MRV system is verification and quality control/assurance procedures. These activities can be appointed as the instruments able to ensure the quality and the accuracy of the measurements and reporting. Moreover, a properly established quality control system stands for a further guarantee that the sectorial mitigations actions and measures would be able to meet specific sectorial requirements as fixed at national level. It derives that verification through QA/QC is the tool to evaluate continually data and to guarantee update and improvements in sectorial and national actions, projects and programs.

Who will be in charge of controlling? The entity in charge of controlling is the same as in the reporting phase that means EPA. This represents the first stage of control, what is called auto-control in the national MRV system.

Instead, the second part related to QC needs to be set about by a third independent party, external for the purposes of this system, who will be able to set, verify, control, approve the correctness, transparency and comparability of sectorial mitigation actions, measures and reporting. In the National scheme, the role of third party has been assigned to the Working group for climate change established by the government and composed of 15 members among ministries and local authorities. Indeed, for the purpose of the sectorial tourism MRV system, the Consortium suggests to start with a real third expert reviewer. Therefore, a peer review should be utilized especially for the first stage where only few governmental staff manage some Knowledge of MRV and these few governmental subjects are too few to follow the entire MRV workload. The idea of the Consortium is to have a peer external review for verification but in the meantime develop a capacity building process inside the competent governmental bodies on how to review, verify correctness of data in order to be ready for 2020 to deal with it through national resources.

5. CONCLUSIONS AND RECOMMENDATIONS

Starting from the status of Montenegro, considering Beneficiary and directly involved stakeholder requests, it emerges that this MRV system could be regarded as structured enough for the time being and for the non-Annex I country status of Montenegro. However, in order to arrive well-organized after 2020, some improvements need to be produced to the existing basic structure mentioned above. If these recommendations will be considered in the development of the sectorial and national MRV system, the main objective of the MRV, which is to increase the transparency, consistency, comparability, completeness and accuracy of GHG data estimations, will be reached.

- First of all, new human resources should be appointed and trained inside EPA and the Ministry of Sustainable Development and Tourism (MSDT), able to deal with specific technical issues related to MRV, not only sectorial but national as well. One subject in EPA and two in the MSDT are not enough and cannot be regarded from international audience as a guarantee, able to ensure good information, ensure data transparency and accuracy. Indeed, establishing a national solid system with appointed working subjects inside of each competent body with clearly defined roles and responsibilities represents the best explanation and the warranty for a functioning MRV system.
- Then, staff institutions should be trained on methodologies to be used, using as examples concrete experiences from other countries. Therefore, it is needed to implement capacity building process as well as identifying funding and resources for training.
- Moreover, it is evident the difficulty of maintaining expert human resources (loss of institutional memory and capacity), therefore it is necessary to promote awareness on the importance of setting quality data, how to disaggregate data in order to be ready for sectorial studies. Indeed, economic data related to tourism are scarce and not detailed. It should be recommended to continue elaborating and implementing existing pilot projects (e.g. tourism satellite accounts) which could give a better understanding of the sectorial situation and which will avoid further expense in terms of human resources and waste of time.
- Least but not the last, a real coordination mechanism between governmental departments dealing with the same issues should be developed. Information should be accessible in short time to all stakeholders, no matter if private or public, should be organized according to clear, evident and international standards and especially should be always enriched through improvement plans to guide future efforts towards 2020, prioritizing resources for improving GHG data (not only sectorial but at national level first and then in disaggregated terms) estimations for the future.

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