



Partnership on Transparency
in the Paris Agreement



National benefits of climate reporting

DISCUSSION PAPER | AUGUST 2018

giz Deutsche Gesellschaft
für Internationale
Zusammenarbeit (GIZ) GmbH

Information Matters
Transparency through Reporting

On behalf of:



Federal Ministry
for the Environment, Nature Conservation
and Nuclear Safety

of the Federal Republic of Germany

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Imprint

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Disclaimer

Disclaimer: This paper explores additional national benefits that a country can gain from transparent and ambitious climate reporting and a sustainable MRV system. It does not aim to provide any standardised guideline to the current and future reporting requirements under the UNFCCC. GIZ is responsible for the content of this publication.

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Prepared for

Partnership on Transparency in the Paris Agreement

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Transparency through Reporting

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Table of contents

About the Information Matters project	6
About the Partnership on Transparency in the Paris Agreement	6
1. Introduction	7
2. National benefits of climate reporting	9
I. Tracking sustainable development goals	9
II. Supporting accession to political and economic communities and organisations	13
III. Contributing to national reporting on the state of the environment, climate issues and policy effects	16
IV. Providing coherent data for national policy-making	19
V. Increasing political buy-in for climate issues	19
VI. Enhancing national capacities through MRV and the reporting process	21
VII. Involving the private sector	23
VIII. Improved access to funding	27
3. Summary – key messages	29
4. Bibliography	31

Lists of tables, boxes, figures and abbreviations

Tables

Table 1. Examples of GHG reporting practice in relation to the private sector (source: Kauffman et al, OECD)	26
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Figures

Figure 1 Types of mitigation-related MRV systems (source: adapted from World Resources Institute, 2016)	8
Figure 2 National benefits resulting from MRV systems (source: adapted from own compilation by GIZ/NIRAS)	8
Figure 3 Linkages between national and private sector reporting systems (source: adapted from own compilation by GIZ/NIRAS)	24
Figure 4 Links among Project Estimates, City Inventories, and National Inventories for GHG inventories (source: adapted from ADB Southeast Asia papers, 2015) ...	28
Figure 5 Main benefits and case-related benefits of climate reporting (source: own compilation by GIZ)	30

Boxes

Box 1	Climate reporting and sustainable development indicators in Egypt	10
Box 2	Senegal's MRV system for climate reporting and SDGs	12
Box 3	Georgia's national MRV system and the linkage to the EU Association Agreement ...	14
Box 4	Colombia and OECD compliance	15
Box 5	National reporting in Mexico	16
Box 6	National reporting of climate change response in South Africa	17
Box 7	MRV system for the Tunisian Nationally Appropriate Mitigation Action (NAMA) on energy efficiency and renewable energies in buildings	18
Box 8	Reports for policy-making in Germany	19
Box 9	GHG inventories and political buy-in for the energy sector in India	21
Box 10	MRV system for the Tunisian NAMA on energy efficiency and renewable energies in buildings	22
Box 11	Enhancing data collection in Egypt	23
Box 12	The case of UNACEM climate reporting in Peru	25

Abbreviations

ADB	Asian Development Bank	INEGI	National Institute of Statistics and Geography
AFOLU	Agriculture, Forestry and Other Land Use	IPAP	Investment Promotion Action Plan
ANME	National Agency for Energy Conservation	IPCC	Intergovernmental Panel on Climate Change
BAU	Business as usual	IPPU	Industrial processes and product use
BUR	Biennial Update Report	MCEP	Mining Certification Evaluation Project
COP	Conference of the Parties	MRV	Measurement, Reporting and Verification
CDM	Clean Development Mechanism	MW	Megawatt
DANE	National Administrative Department of Statistics	NAMA	Nationally Appropriate Mitigation Action
EE	Energy efficiency	NC	National Communication
EEDSM	Energy Efficiency Demand Side Management	NCCRD	National Climate Change Response Database
EPWP	Expanded Public Works Programme	NCPC	National Cleaner Production Center
ETF	Enhanced Transparency Framework	NDC	Nationally Determined Contribution
EU	European Union	OECD	Organisation for Economic Co-operation and Development
GCF	Green Climate Fund	REIPPP	Renewable Energy Independent Power Producer Program
GHG	Greenhouse gases	SDGs	Sustainable Development Goals
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH	SEIS	Shared Environmental Information System
GRI	Global Reporting Initiative	SWH	Solar water heaters
ICA	International Consultation and Analysis	UNFCCC	United Nations Framework Convention on Climate Change
IDA	Industrial Development Authority		
IKI	Internationale Klimaschutzinitiative (International Climate Initiative)		

About the Information Matters project

On behalf of the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) and under its International Climate Initiative (IKI), the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH is providing capacity-building and technical support to a number of selected partner countries under the Information Matters (IM) project. The aim of the project is to strengthen in-country capacities for enhanced reporting under the United Nations Framework Convention on Climate Change (UNFCCC), particularly focusing on the preparation of Biennial Update Reports (BURs) and the implementation of sustainable systems for measurement, reporting and verification (MRV). During the first phase of the project (2013–2016), support was provided to the four partner countries Chile, the Dominican Republic, Ghana and the Philippines. During the second project phase (2016–2018), support was provided to three additional countries, namely Colombia, Georgia and Viet Nam, building upon results, experiences and lessons learned during the first phase of the project. During its current third project phase (2018–2019), the project will provide support to a number of additional countries under its flexible [Ad-hoc Facility](#) and continue to provide specified support to its partner countries of the second phase. In this context, the IM project also generates knowledge products based on practical experience, such as this discussion paper on the additional national benefits that a country can gain from transparent and ambitious climate reporting and a sustainable MRV system. Find more information on the project here: www.transparency-partnership.net/network/information-matters.

About the Partnership on Transparency in the Paris Agreement

In May 2010, Germany, South Africa and South Korea launched the Partnership on Transparency in the Paris Agreement (formerly: International Partnership on Mitigation and MRV) in the context of the Petersberg Climate Dialogue with the aim of promoting ambitious climate action through practical exchange. With the Paris Agreement entering into force in 2016, the way has now been paved for the Partnership to focus on implementing the Agreement and particularly on the enhanced transparency framework. Over 100 countries, more than half of which are developing countries, have taken part in the Partnership's various activities. The Partnership has no formal character and is open to new countries. Find more information on the partnership here: www.transparency-partnership.net.

01.

Introduction

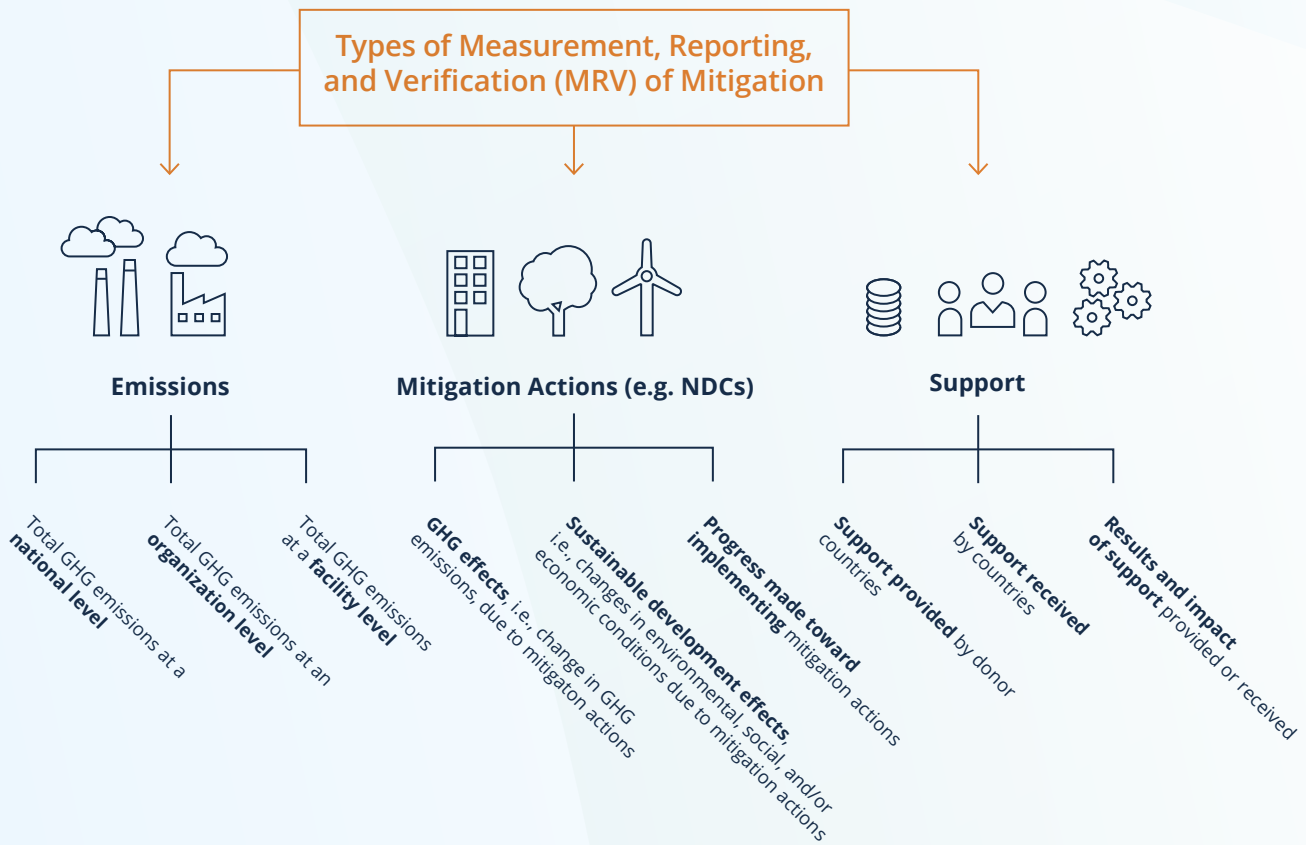
Under the United Nations Framework Convention on Climate Change (UNFCCC), all Parties are required to periodically report national climate change-related information, which, for developing countries, has been mainly provided through the national communications (NCs). The requirements for reporting have evolved over time, and with the Bali Action Plan at the thirteenth Conference of the Parties (COP), the principle of Measurement, Reporting and Verification (MRV) was applied (see [Figure 1](#)). From 2010 onwards, the frequency of the submission of NCs from developing countries was set to every four years, with an additional requirement to also provide Biennial Update Reports (BURs) every two years, including updated greenhouse gas (GHG) inventories as well. The first BURs were due in December 2014.

For many countries, the main reason for setting up an MRV system and engaging in climate reporting is to comply with the reporting requirements under the UNFCCC, i.e. in the case of developing countries by submitting NCs and BURs. Most recently, under the Paris Agreement, an Enhanced Transparency Framework (ETF) was established under which all countries will be required to provide emissions data and track progress of their Nationally Determined Contributions (NDCs), with flexibility provided to those countries that need it in light of their capacities. MRV systems will be a significant

component in effectively tracking and improving the implementation of mitigation goals and policies (Source: World Resources Institute, 2016). However, besides serving for climate reporting under UNFCCC, MRV systems can have additional benefits for a country.

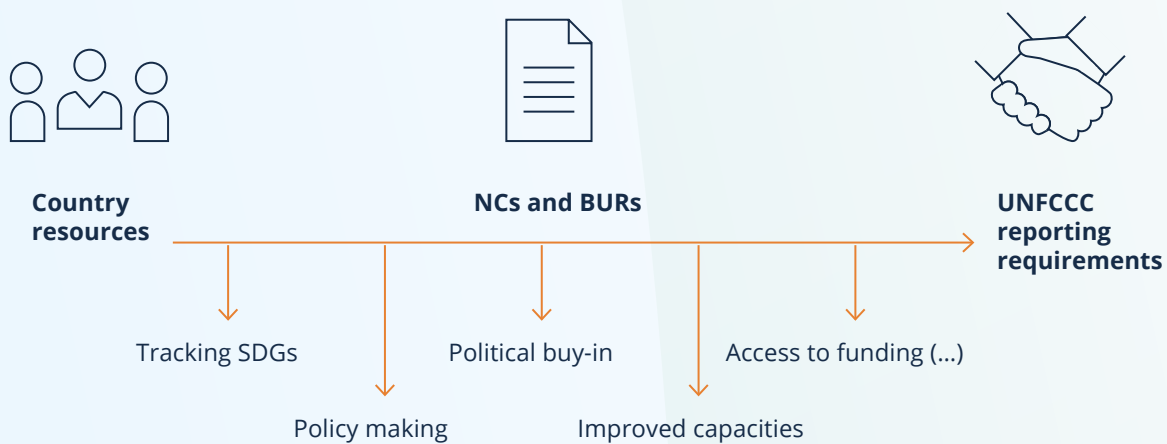
The following discussion paper intends to highlight benefits that a country can obtain through transparent and ambitious climate reporting and a robust and self-sustained MRV system, which go beyond the obvious benefit of fulfilling current and future reporting requirements under the UNFCCC. By highlighting the national benefits that are less visible at first glance, the discussion paper seeks to enhance the understanding of policy-makers and other stakeholders as to why transparency and MRV for climate reporting has merits of its own, and how countries may tap such national benefits. To this end, the discussion paper identifies and describes a number of such national benefits and provides concrete experiences and examples from various countries. Recognising that MRV systems for climate-related reporting require financial resources and personnel at the national level, the benefits described herein may help visualise how the outcomes of this allocation of budget and effort are wider and more impactful than merely the periodic reports to the UNFCCC (see [Figure 2](#)).

Figure 1
Types of mitigation-related MRV systems



Source: adapted from World Resources Institute, 2016

Figure 2
National benefits resulting from MRV systems



Source: adapted from own compilation by GIZ/NIRAS

02.

National benefits of climate reporting

This section presents a number of key national benefits of climate reporting and of enhancing transparency that are generally relevant for most developing countries despite differences in specific national circumstances. There may be many more benefits depending on the national circumstances, country priorities and the reporting systems already in place. In addition to the benefits mentioned here, countries are encouraged to explore other ways to harness climate-related MRV to their maximum advantage.

I. Tracking sustainable development goals

In the framework of the 2030 Agenda for Sustainable Development¹, 193 countries signed up to the 17 Sustainable Development Goals (SDGs) in September 2015. For many countries, implementing SDGs at the national level is of high relevance. Many countries have therefore already translated the SDGs, including the specific targets under each goal, into their own national sustainability plans. The progress towards the SDGs should be monitored via a global indicator framework, which the High-level Political Forum on Sustainable Development will review annually².

The SDGs comprise many areas of action, which for example can be covered by national statistics on poverty, health or education. Since some SDGs relate directly to climate action, having an MRV system in place for climate reporting may simultaneously assist a country in tracking its climate-related SDGs³, by providing data and information that allow the monitoring of the specific SDG. Particularly if a tracking system for SDGs is not or only partially in place, an MRV system can complement the existing structures. The following examples refer to the climate-related SDGs.

Goal 13: 'Take urgent action to combat climate change and its impacts'

This goal directly relates to the aims of the UNFCCC. As such, information reported by developing countries to the UNFCCC on mitigation actions, in NCs and BURs, and on vulnerability assessments and adaptation, is the very same type of information needed to assess the progress toward SDG 13. [Box 1](#) provides an example from Egypt on how tracking SDGs and climate reporting can be linked.

¹ <https://sustainabledevelopment.un.org/post2015/transformingourworld>

² <http://www.un.org/sustainabledevelopment/development-agenda/>

³ Mostly SDGs 7, 13 and 15.

Box 1

Climate reporting and sustainable development indicators in Egypt

Egypt has developed its sustainable development strategy until 2030⁴. The strategy includes the three dimensions of sustainable development: economic, social and environmental. The economic dimension includes four axes: economic development, energy (efficient use of various traditional and renewable resources), knowledge/innovation/scientific research and transparency of governmental institutions. Each axis includes three types of indicators: input indicators to measure the resources available, outcome indicators to measure results and strategic results indicators. Under the energy axis, an output indicator for the reduction in GHGs is included. The target is to reduce GHG emissions by 5% in 2020 and 10% in 2030. The implementation of an MRV system to comply with UNFCCC reporting requirements will help monitor the progress made in achieving this indicator by measuring the emission reductions resulting from implementation of mitigation measures in the energy sector. Thus, the monitoring of the indicators for the sustainable development strategy of Egypt can be linked with climate reporting to take advantage of synergies in data collection. Therefore, an MRV system supports or complements the sustainable development strategy of Egypt, which also directly assists in the tracking of SDG 13.

⁴ <http://sdsegypt2030.com/?lang=en>

Goal 7: 'Ensure access to affordable, reliable, sustainable and modern energy for all'

Even though this goal does not directly relate to climate change, it may also be addressed by a national MRV system that compiles information for reporting to the UNFCCC. Progress toward Goal 7 may be reflected in mitigation actions and most significantly in detailed and robust energy balances, which form the basis for accurate GHG inventories in the energy sector. In the case of the GHG inventory compilation, reporting on category 1A4b according to the methodology

provided in the 2006 Intergovernmental Panel on Climate Change (IPCC) Inventory Guidelines, residential stationary combustion captures the amount of fuel combusted by households. For a country that has estimated GHG emissions on this category over a period of time, national trends in households' use of fuels that contribute most to indoor air pollution, such as kerosene, coal and wood fuel, would become apparent. Thus, a transparent MRV system for GHG inventory that enables complete reporting would generate information relevant for Goal 7. In cases where GHG inventories have already been compiled for a certain period, existing

structures for this process may be established well enough, or can be strengthened, to generate data for this SDG indicator. As an example of how MRV of mitigation actions could help support SDG 7, any mitigation action targeted at replacing highly polluting household energy sources, such as inefficient cook stoves or kerosene lamps, would need to measure indicators such as the number of households impacted and clean technology substitutions. A national MRV system centralising data on such energy use and on such an action for UNFCCC reporting would simultaneously generate information needed to report on Goal 7.

Other Sustainable Development Goals

Progress towards specific aspects of Goal 15: ‘Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably managed forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss’ can also be captured by a complete, transparent national GHG inventory of the agriculture, forestry and other land use (AFOLU) sector. The indicators for Goal 15 include changes in land areas dedicated to forest and cultivation, and areas of managed forest. These same data are also activity data for the GHG inventory in the AFOLU

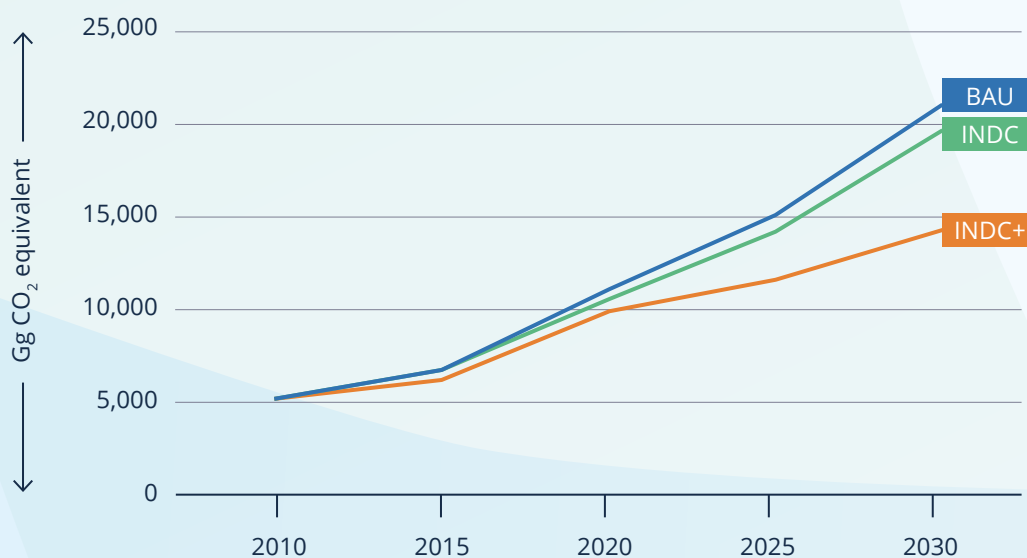
‘Since some SDGs relate directly to climate action, having an MRV system in place for climate reporting may simultaneously assist a country in tracking its climate-related SDGs, by providing data and information that allow the monitoring of the specific SDG. Particularly if a tracking system for SDGs is not or only partially in place, an MRV system can complement the existing structures.’

sector. In addition, some aspects of Goals 11 and 12, ‘Make cities and human settlements inclusive, safe, resilient and sustainable’, and ‘Ensure sustainable consumption and production patterns’, respectively, can be captured by reporting on vulnerability and adaptation such as in the NC and/or national GHG inventory. For SDG 11 for instance, this might be the case for mitigation actions for sustainable transport systems. As a result, an MRV system that is in place for climate reporting will provide data and information that the country can use for following up on its national plans related to the SDGs. [Box 2](#) shows how a multi-use MRV system is being developed in Senegal.

Box 2

Senegal's MRV system for climate reporting and SDGs

Senegal is in the process of establishing an MRV system for climate reporting⁵. The Ministry of the Environment and Sustainable Development is leading the MRV system setup, together with the Direction of the Environment. These entities have identified the 'Plan for an Emerging Senegal 2035', in which the SDGs are being integrated, as an input to the development of the MRV system. Once the information to be tracked is identified, as well as the frequency of monitoring, quality, and archiving of data, the country plans to integrate the monitoring of climate-related data with that of sustainable development and the tracking of the implementation of the NDCs. Taking into account Senegal's NDC goal for electricity generation, which involves the installation of 160 megawatt (MW) solar photovoltaic, 150 MW wind, 144 MW hydro and rural electrification of 392 villages in a mini network, it is clear that the monitoring of renewable energy development as part of mitigation under the NDC, and SDG 7 on affordable, clean energy for all, are closely linked. Thus, the MRV system for climate reporting has the potential to provide the added benefit of supporting this SDG by generating information about the progress of clean energy generation and rural electrification.

CO₂ equivalent emissions in the energy sector (Gg)

5 B. Sarr. Presentation: Système MRV du Sénégal. Sub-regional dialogue on the MRV framework West Africa, 4 – 6 October 2016, Lomé, Togo. http://unfccc.int/secretariat/regional_collaboration_centres/rcc_lome/items/10007.php

Image source: adapted from INDC of Senegal (Contribution Prévue Déterminée au Niveau National, Ministère de l'Environnement et du Développement Durable, République du Sénégal, Septembre 2015)

II. Supporting accession to political and economic communities and organisations

Worldwide, there are many multilateral organisations or communities in which countries join forces to address issues of common interest. Frequently, participating countries of such organisations perceive benefits, such as a reduction of trade barriers or access to regional funds⁶, while also incurring requirements for participation in the organisation. Two such examples are the European Union (EU) and the Organisation for Economic Co-operation and Development (OECD). Environmental regulation and enforcement is an important issue for these communities. For countries that aim

‘Colombia ... is a good example that highlights the value of a robust and sustainable MRV system, since such systems can function as a source of information for national as well as international decision-makers.’

to join them, the process of complying with admission requirements related to the environment may include conditions regarding monitoring and reporting on climate change. A country with an established MRV system for reporting to the UNFCCC might already comply with a variety of

accession requirements and might be able to use its MRV system as a source of information for complying with additional requirements.

Georgia, a country that is aiming to become a member of the EU, provides an example of the benefits of setting up a climate-related MRV system to support accession to a multilateral community. Prior to joining the EU, Georgia has to comply with, among others, environmental and climate-related requirements, as per the legal standards that apply to all member states. [Box 3](#) indicates some specific requirements, which Georgia must satisfy to comply with EU legislation and how these can be met through the setup of a climate-related MRV system.

Another example where climate reporting and accessing multilateral economic or political organisations can be mutually beneficial is Colombia's process of joining the OECD that was initiated in 2013 (see [Box 4](#)). This is a good example that highlights the value of a robust and sustainable MRV system, since such systems can function as a source of information for national as well as international decision-makers.

⁶ https://europa.eu/european-union/topics/regional-policy_en

Box 3

Georgia's national MRV system and the linkage to the EU Association Agreement

In July 2016, Georgia reached a milestone when the EU-Georgia Association Agreement entered into force (EU, Council Decision 2014/494). This legal mechanism seeking economic and political integration of both parties requires Georgia to harmonise a variety of national standards with EU requirements, including environmental and climate change issues such as:

- Adoption of the 3rd National Environmental Action Programme of Georgia (2017–2021);
- Enhancement of environmental governance by adopting and implementing new legislation in Georgia on environmental impact assessment, strategic environmental assessment, new legislation on environmental liability, by ensuring public access to environmental information and public participation in decision-making, by involving all interested stakeholders, as well as by integrating environment into other policy areas and by improving environmental information-sharing in line with the principles of the Shared Environmental Information System (SEIS);
- Full implementation of the Rotterdam Convention⁷ and drawing-up a roadmap for ratification and implementation of the Espoo Convention⁸ and Gothenburg Protocol⁹;
- Strategic planning and development of measures to mitigate and adapt to climate change;
- Finalisation and adoption of a Low Emission Development Strategy of Georgia;
- Start of the implementation of the Paris Climate Agreement;
- Elaboration of the updated Nationally Determined Contribution (NDC) document;
- Mainstreaming of climate action in sectoral policies and measures and strengthening the capacity of different authorities to implement climate action across sectors;
- Enhancement of Georgia's transparency framework for climate action, in particular through a robust national system for the monitoring and reporting of climate policies, measures and greenhouse gas emissions based upon the EU model;
- Development of Georgia's mid-century, long-term low greenhouse gas emission development strategy;
- Approximation of legislation to EU acts and international instruments.

These requirements are to be met in parallel to developing a sustainable, national MRV system in Georgia, especially related to GHG inventory compilation and the tracking of mitigation actions and their effects. The available experience of operating the GHG inventory compilation over many years may provide lessons learned as well as valuable inputs for arranging the data collection process under the SEIS. Also, the building of capacities that is currently taking place for climate MRV at the Climate Change Unit of the Ministry of Environment Protection and Agriculture (MoEPA) will support the strengthening of an entity with the ability to respond to reporting requirements under the EU related to climate change. Finally, existing data collection, data exchange and data consolidation practices for UNFCCC reports can be applied to commitments in the Association Agreement, such as future reporting under the Gothenburg Protocol and as an input to strategic planning on national climate change mitigation and adaptation.

⁷ <http://www.pic.int/>

⁸ <https://www.unece.org/env/eia/eia.html>

⁹ <http://www.unece.org/environmental-policy/conventions/envlrtapwelcome/guidance-documents-and-other-methodological-materials/gothenburg-protocol.html>

Sources:

First Biennial Update Report on Climate Change, MoENRP of Georgia, 2016;
EU Georgia Association Agreement Implementation Agenda 2017–2020.

Box 4**Colombia and OECD compliance**

Colombia initiated its process of joining the OECD in 2013 and agreed on an Initial Memorandum of the OECD that defined 250 instruments Colombia should use to create the conditions needed to join the organisation. One area of improvement was the need to strengthen statistical information for decision-making (e.g., with regard to green growth, environmental targets in the various sectors of the economy), for which Colombia created the National Statistics System under the authority of the National Administrative Department of Statistics (DANE). One specific requirement for statistical information is the Registry of Emissions and Transfer of Contaminants, which members must report to the OECD. While the scope of the GHG inventory and the registry of emissions do not coincide perfectly, there is a great amount of overlap. As DANE consolidates its structures for the registry of emissions, consultation has taken place with the government entity responsible for the GHG inventory (the Institute of Hydrology and Meteorology, IDEAM), on the basis of which DANE may strengthen its own emissions registry using the experience gained through preparation of the GHG inventory. In this way, the national climate MRV supports the nation's compliance with OECD requirements. Furthermore, the two institutions are engaged in dialogue to determine the extent to which the two emissions accounting processes can be integrated, to achieve efficiencies and build the national statistics system upon existing structures.



III. Contributing to national reporting on the state of the environment, climate issues and policy effects

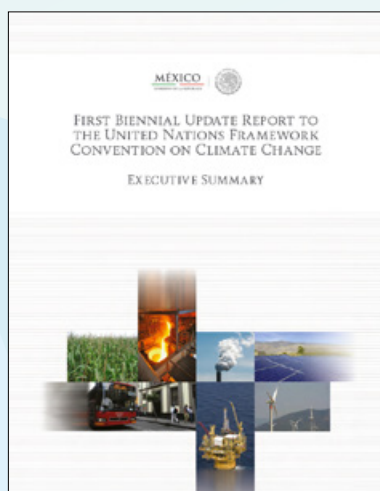
Besides international reporting requirements under the UNFCCC, national reporting on climate change is gaining importance, as citizens become increasingly interested in understanding the impacts of climate change on their lives and businesses, and expect governments to report on and account for actions on reducing climate change impacts and GHG emissions. Reporting creates opportunities for a broader national discussion, which can help national governments to demonstrate their accountability to civil society and to the

public. An example of national reporting is shown in Box 5, which depicts the national Climate Change Information System¹⁰ in Mexico under the authority of the National Institute of Statistics and Geography. This system provides the citizens of Mexico with geo references and spatial measurement of population, biodiversity, land, ecosystems, infrastructure and weather. The platform includes scenarios for vulnerability and adaptation that can assist businesses or regional and local governments with decision-making, correlating the information from the MRV system with geographic information, which can also become relevant for the ETF. National laws on climate change and the national system of information, statistics and geography support this initiative.

¹⁰ See: <http://gaia.inegi.org.mx/sicc2015/>

Box 5

National reporting in Mexico



Mexico's national legislation includes a GHG reduction goal. Thus, the country is interested in tracking its emissions goal, emphasising the importance of the quality of reporting on national GHG emissions. Furthermore, the General Climate Change Law established the national Climate Change Information System under the authority of the National Institute of Statistics and Geography (INEGI). This system aims to provide the public with up-to-date statistics, indicators and geographical information about climate change causes and impacts in Mexico. The data on GHG emissions reported by INEGI in the climate change information system is provided by the National Institute for Ecology and Climate Change, the entity in charge of national GHG inventory reporting to the UNFCCC. As such, the data that is compiled for the NC and BUR is also used to inform the public about climate change in Mexico.

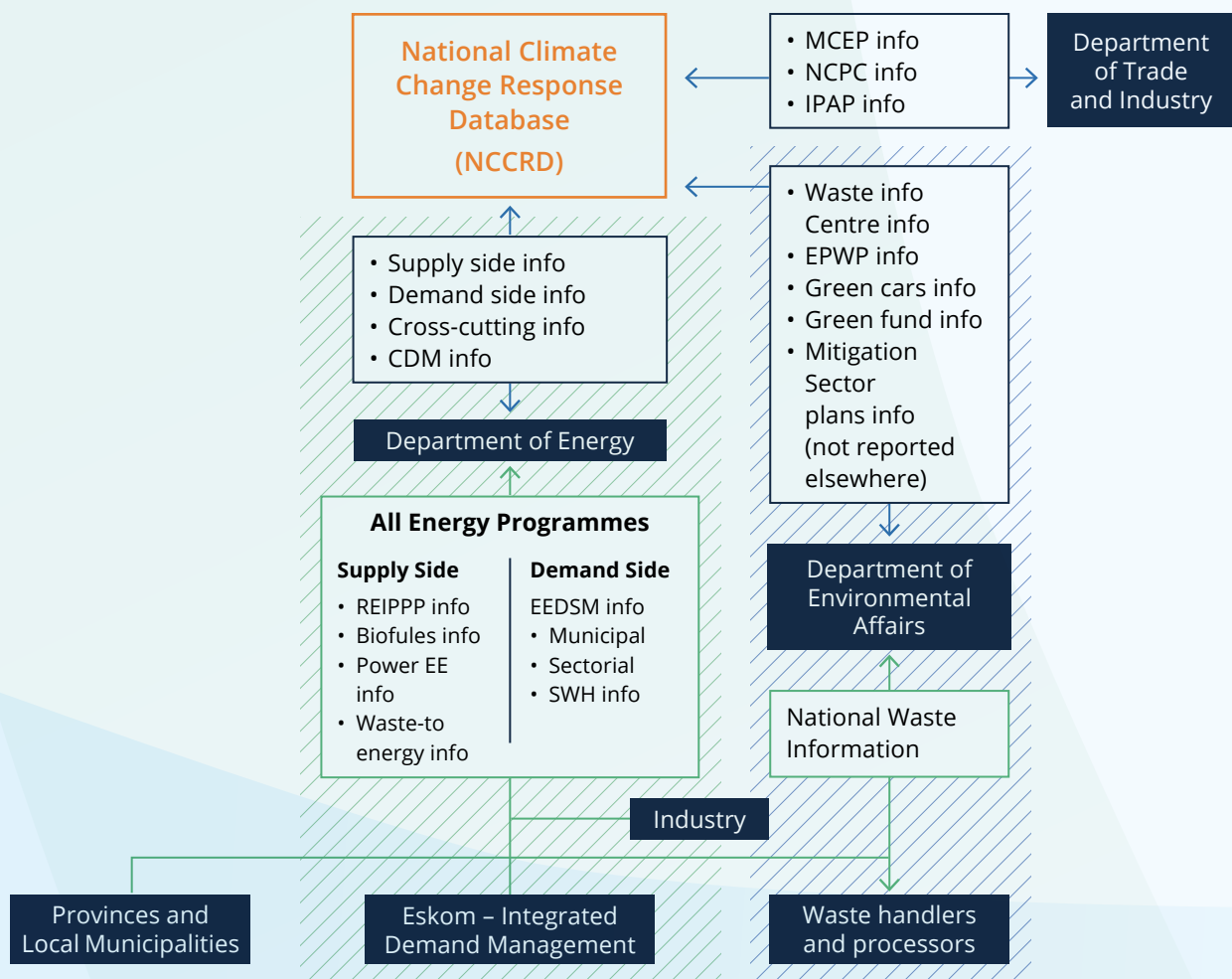
See: http://www2.inecc.gob.mx/cgacc/escenarios_cu/

Image source: https://unfccc.int/files/national_reports/non-annex_i_parties/biennial_update_reports/application/pdf/executive_summary.pdf

Box 6

National reporting of climate change response in South Africa

Since 2009, South Africa has operated its National Climate Change Response Database (NCCRD), a web-based database that permits users to access information on climate change mitigation, adaptation and research projects that have been implemented in the country. The NCCRD helps to demonstrate the extent to which the country is achieving its emission reduction goals to the South African Government and citizens, and to enable informed decision-making by the government on climate policy and mitigation strategies.



Source and image source: adapted from South Africa's 1st Biennial Update Report, Department of Environmental Affairs, Republic of South Africa, 2014

The NCCRD uses data from the Department of Environmental Affairs, Department of Energy and Department of Trade and Industry, while users can also voluntarily register projects. The MRV system that serves the needs of the UNFCCC simultaneously permits the government to:

- support South African negotiation positions in international climate change negotiations,
- avoid duplicating mitigation, adaptation and research projects, and
- track the impact of mitigation actions in the country, among others.

This system is designed to inform different national stakeholder groups. Thus, South Africa is able to generate its Annual Climate Change Reports from its MRV system that originally had been conceived for serving the UNFCCC requirements¹¹.

¹¹ https://cer.org.za/virtual-library/gvt_docs/south-africas-annual-climate-change-reports

Box 7

MRV system for the Tunisian Nationally Appropriate Mitigation Action (NAMA) on energy efficiency and renewable energies in buildings¹²

NAMAs can be an important policy element for realising countries' NDCs, and a functioning MRV system can be a key element in the development and implementation of NAMAs. Based on the MRV system, projections of GHG emissions allow policy-makers to design a NAMA suitable for the needs of the country. Monitoring and analysis during the NAMA implementation help stakeholders to better understand whether applied measures are effective and allow them to intervene and adapt instruments. Thus, MRV systems are not limited to accounting for GHG emissions, but also inform stakeholders on the progress and impact of mitigation measures such as NAMAs. MRV is hence a key element for managing mitigation policies and increasing transparency by providing the necessary information and decision-making basis for policy-makers.

In the case of the Tunisian NAMA, calculation methodologies to measure specific impacts have been translated into a so-called impact accounting module, which is part of the overall MRV system for the NAMA. This module uses a specialised software, which is accessible to the responsible department of the National Agency for Energy Conservation (ANME). It allows the ex-ante as well as ex-post calculation of relevant indicators related to the NAMA (GHG emissions, energy use, co-benefits and financial flows). To annually update the module, it is refreshed with data from recent statistics and from the different programmes conducted under the NAMA. The module calculated ex-ante that approximately 4.8 million tons of GHG emissions will be avoided between 2016 and 2030. Furthermore, by 2030, it is estimated that around 16,000 additional jobs will be created in the national economy. Energy costs for end consumers are expected to decrease by around EUR 2.9 billion and public subsidies can be reduced by EUR 3.1 billion. As a result, based on the calculations under the MRV systems, ANME has the ability to quantify the impacts of the NAMA and more importantly manage and steer its progress. In addition, these numbers also help to increase political buy-in for climate policy (see [Section 2.V](#)).

¹² ANME, Ecofys, Alcor (2016): 'NAMA for renewable energy and energy efficiency in the building sector in Tunisia', Mitigation Momentum Project, retrieved from: http://www.mitigationmomentum.org/downloads/NAMA-proposal-for-renewable-energy-and-energy-efficiency-in-the-building-sector-in-Tunisia_December%202015.pdf

Source: Greis, T. (GIZ), El Khazan, A. (ANME) and Masmoudi, A. (GIZ)

Box 8

Reports for policy-making in Germany

The German Government chose to explore a vision of how the country could become carbon-neutral by 2050. Outside the scope of international climate agreements, Germany analysed what strategies and policies would have to be put in place to achieve the necessary transformation to a low-carbon economy in the country. For this reason, the government commissioned the Klimaschutzplan 2050 (German Climate Action Plan 2050), published by BMU in 2016. To compile this action plan, BMU used inputs from the national GHG inventory, which is developed by the German Environment Agency (Umweltbundesamt).

See:

<https://www.bmu.de/en/topics/climate-energy/climate/national-climate-policy/greenhouse-gas-neutral-germany-2050/> or <https://www.bmu.de/themen/klima-energie/klimaschutz/nationale-klimapolitik/klimaschutzplan-2050/>

While most developed countries are already undertaking national climate reporting, developing countries are increasingly seeing the benefits of generating national reports and databases, both for decision-making in the private sector or by citizens, and for the government itself for policy-making. For example, a robust system with national information about climate change impacts on agriculture that evidences increasing droughts could help farmers make informed decisions about irrigation practices and enable the government to prioritise sector resources toward drought management programmes for affected farmers. The compilation of such information relies on similar institutional arrangements and data collection systems as those needed to comply with UNFCCC requirements. [Box 6](#) highlights a national reporting experience in South Africa.

IV. Providing coherent data for national policy-making

The process of data gathering and analysis for reporting to the UNFCCC involves many sources compiling information from different levels of government such as ministries, sub-national government and other agencies,

especially statistical services. As a result, the wide array of compiled data can provide a solid basis for informed national policy-making on climate and other related matters, making it possible to analyse the efficiency and effectiveness of policy implementation, which is an element of good governance. In addition, the data can be useful for countries when attempting to understand linkages between national policies and emissions or emission trends. Moreover, coherent data can improve the consistency of projections and business-as-usual (BAU) scenarios as well as the further refinement of the country's NDCs. The following example from Tunisia in [Box 7](#) shows how MRV for mitigation actions helped to improve national policy-making in the energy sector.

In [Box 8](#), another example from Germany shows how data generated as part of reporting to the UNFCCC can be used for long-term climate policy-making.

V. Increasing political buy-in for climate issues

As the IPCC Assessment Reports and countries' national reports indicate, climate change can have a variety of negative impacts on countries' productive systems, citizens

and ecosystems. Assessment Reports and national reports also describe strategies and technologies to mitigate and adapt to climate change. However, this type of technical information is not always disseminated effectively to stakeholders such as other government decision-makers, industrial associations, financial institutions (banks and insurance companies), NGOs, academia and others who are capable of influencing, i.e. supporting or jeopardising action on climate change adaptation and mitigation. Consequently, more effective communication of environment and climate information will enhance awareness, and increase the number of informed stakeholders that may exert political pressure for a more ambitious climate policy.

Thus, climate reporting can provide an opportunity to engage stakeholders and inform them about the main climate issues of interest to each stakeholder group, with the objective of enhancing their climate awareness and triggering their support for climate action, e.g. through national reporting (see [Section 2.III](#)). Since climate reporting covers many sectors and types of information (emissions, financial, mitigation actions, etc.), the different sections of the report will be relevant to a wide variety of target groups. In this context, the way in which information is communicated is essential to convince the respective audience. Communication methods targeted at industrial associations, NGOs and academics could be expected to differ. [Box 9](#) highlights how a strategically communicated climate report increased awareness and political buy-in at high political levels for the energy sector in India.

Political buy-in must be seen as a result of a communication strategy to position climate change prominently in the awareness of decision-makers. Decision-makers need to

be adequately informed in order to support climate policy. In that sense, it is important to have a regular process to introduce and update relevant information on climate change, particularly for the higher levels of government. This communication process is supported by framing the problems and solutions in the context of the decision-maker, and undertaking benchmarking/transfer of lessons learned from neighbouring countries (e.g. inviting the Ministry of Transport from another country to present how they have incorporated climate change into day-to-day actions and planning). These discussions should include the co-benefits of climate action (e.g. reducing pollution or technology transfer) and show the social and economic effects of supporting climate activities in the country. Furthermore, decision-makers may be instructed on how they can document their successful climate change actions to maintain or win political support. Another useful practice is to make frequent presentation of the NC and BUR contents for high-level decision-makers, translating contents according to the mandates and priorities of the government and sector ministries. [Section 2.VII](#) describes in more detail the involvement of the private sectors.

In communication with government line ministries or industry representatives, it could be appropriate to explain the development benefits related to the improvement of the emissions in their sector. Sectors that have gained business opportunities through mitigation actions, such as the energy sector (e.g. energy efficiency, new renewable energy sources) or waste (e.g. waste-to-energy, improved separation and recycling), can be informed about the magnitude and distribution of emissions in the sector and by technology, to initiate their interest in further analysis of green business opportunities.

Box 9

GHG inventories and political buy-in for the energy sector in India

The Government of India is facing a number of challenges in its efforts towards low-carbon development, especially in the energy sector. At the same time, for the BUR, about 26 studies were carried out by 17 national institutions involving over 50 scientists, which benefited from the involvement of high political levels, led by the Ministry of Environment, Forest and Climate Change.

One accomplishment in the energy sector of India is the reduction of the emission intensity of GDP by 12% from 2005 to 2010, which is on course to meeting the voluntary target of 20–25% reduction in emission intensity of GDP by 2020. The country has also announced a significant increase in the installed capacity of renewable energy generation from 35 GW (through March 2015) to 175 GW by 2022. To improve the energy efficiency of the coal-based power plants, and to reduce GHG emissions, it was decided that new thermal power plants should be based on supercritical¹³ technology. The national plan includes cuts in petroleum subsidies and the introduction of carbon taxes for coal.

One pillar of the sustainable development strategy is the National Action Plan on Climate Change (NAPCC), which relates to the National Clean Energy Fund (NCEF), Integrated Power Development Scheme (IPDS), the Twelfth Energy Five Year Plan (2012–2017), the Renewable Purchase Obligations (RPO) and the National Programme for LED-based Home and Street Lighting. These large-scale mitigation actions and climate policy-making gained a higher profile through the reporting of their inventories and the country context. These reports are also subject to open discussions with civil society and experts' groups, which resulted in instigating climate actions by the Indian Government.

13 <https://www.greenfacts.org/glossary/pqrs/supercritical-ultra-supercritical-technology.htm>

Source: India, 1st BUR (2015)

VI. Enhancing national capacities through MRV and the reporting process

Climate change reporting to the UNFCCC requires knowledge, data and analysis from a variety of government entities and experts, which need to be coordinated as part of the national MRV system. Since reporting covers diverse topics such as agriculture, energy, forests and land use, heavy industry, waste and more, the different institutions involved

employ different types of professionals. This opens up opportunities for professionals to acquire and/or improve their capacities by operationalising MRV arrangements. For instance, MRV systems have the potential to improve capacities by introducing new technical standards. An example from Tunisia shows how establishing an MRV system for a NAMA introduced improvements in data provision (see also [Section 2.IV](#)), combined with improved technical and procedural capacities (see [Box 10](#)).

Box 10

MRV system for the Tunisian NAMA on energy efficiency and renewable energies in buildings

In the case of the MRV system for the Tunisian NAMA on energy efficiency and renewable energies in buildings, the original programmes of the government and respective agencies relied on inefficient procedures, for instance when registering applicants and entering needed data. Due to the high number of applicants for the programmes (3,500 in 2015), processes were slow and staff members allocated a significant amount of time to administrative tasks. Consequently, a new data management system was designed coinciding with the purchase of adequate hardware and provision of training on the new software for staff members. The results in terms of capacity improvements have been twofold:

1. The new software ensures a highly automated procedure where the concerned officers from the different departments use simple functions in user-specific interfaces for approval, verification, refusal, post-editing and transfer to the next officer in the procedure line. Pre-defined algorithms automatically check consistency and conformity of the demands/ applications and thereby increase quality control without replacing verification by an officer. Previously, officers had to invest three working hours per request, which has now been reduced to only one working hour, corresponding to a reduction of effort by 67%. As a result, staff members have significantly more time to allocate to technical work on the programme, improving the quality of work throughout the department.
2. The technical capacities and knowledge of staff members throughout the department were enhanced immediately following training in using the new software.

Source: Greis, T. (GIZ), El Khazan, A. (ANME) and Masmoudi, A. (GIZ)

Furthermore, capacity building that a country undertakes for peripheral¹⁴ stakeholders for effective participation in its climate change MRV system can result in improvements in, for example, existing data collection systems and increase the relevance of the collected data for climate reporting. As stakeholders who participate in climate reporting understand how their own data feed into the national reports, and the data types and quality needed for reporting, they can use this knowledge to adjust the scope and methods of their

established data collection systems, thereby enhancing the usefulness of the information for climate reporting. An example of this type of improvement is presented in [Box 11](#).

Another important opportunity to improve capacities is, for instance, provided by international reviews under the UNFCCC or similar processes to which experts from developing countries can be nominated (e.g. UNFCCC Roster of Experts¹⁵). These experts conduct reviews of annual GHG inventories or NCs of Annex I Parties, or participate as

14 Understood as organisations different to the primary direct stakeholders related to MRV (e.g. a national office for GIS mapping). These groups do not work routinely with the reports but have an information system related to their core activities that can provide some information for the primary stakeholders.

15 <http://www4.unfccc.int/sites/roe/Pages/Home.aspx>

Box 11**Enhancing data collection in Egypt**

In Egypt, the Industrial Development Authority (IDA) is improving its data collection system to include components on energy and climate-related data. The IDA issues the operating licenses for all industrial establishments in the country. The institution is currently developing a new database for data collection, which should be updated on a regular basis using information from industrial facilities. During the preparation of Egypt's first BUR, the BUR team recognised the need for the development of an MRV system to obtain the data for the industrial sector on a continuous basis. The team involved in the development of the industrial processes and product use (IPPU) sector of the GHG inventory held several meetings with IDA to discuss means of collecting the activity data required for estimating emissions from the IPPU sector for Egypt's GHG inventory. The IDA accepted the idea and is currently considering adding the required data in the design of its new database, which would enhance the quality of data in the industrial sector that can be used for inventory purposes.

Source: Amr Osama Abdel-Aziz (NIRAS)

a member of a team of technical experts undertaking technical analyses of other Parties' BURs under the International Consultation and Analysis (ICA) process. The experts who participate in these processes must first take part in international training sessions designed by the UNFCCC. Through this training and the experiences gained as reviewers, these experts deepen their knowledge and enhance their capacities for reporting to the UNFCCC, which in turn generates valuable in-country expertise that can be applied and shared in the national context to further strengthen national reporting and the national MRV system.

VII. Involving the private sector

The initiation of national MRV of GHGs and mitigation also triggered the private sector to action. When developing countries started their NCs in the 1990s, this motivated some private companies in the countries to initiate reporting, as well. Private sector activity in climate-related reporting began mainly in sectors dominated by large production companies, such as oil and gas, iron and steel and cement; however, they faced some

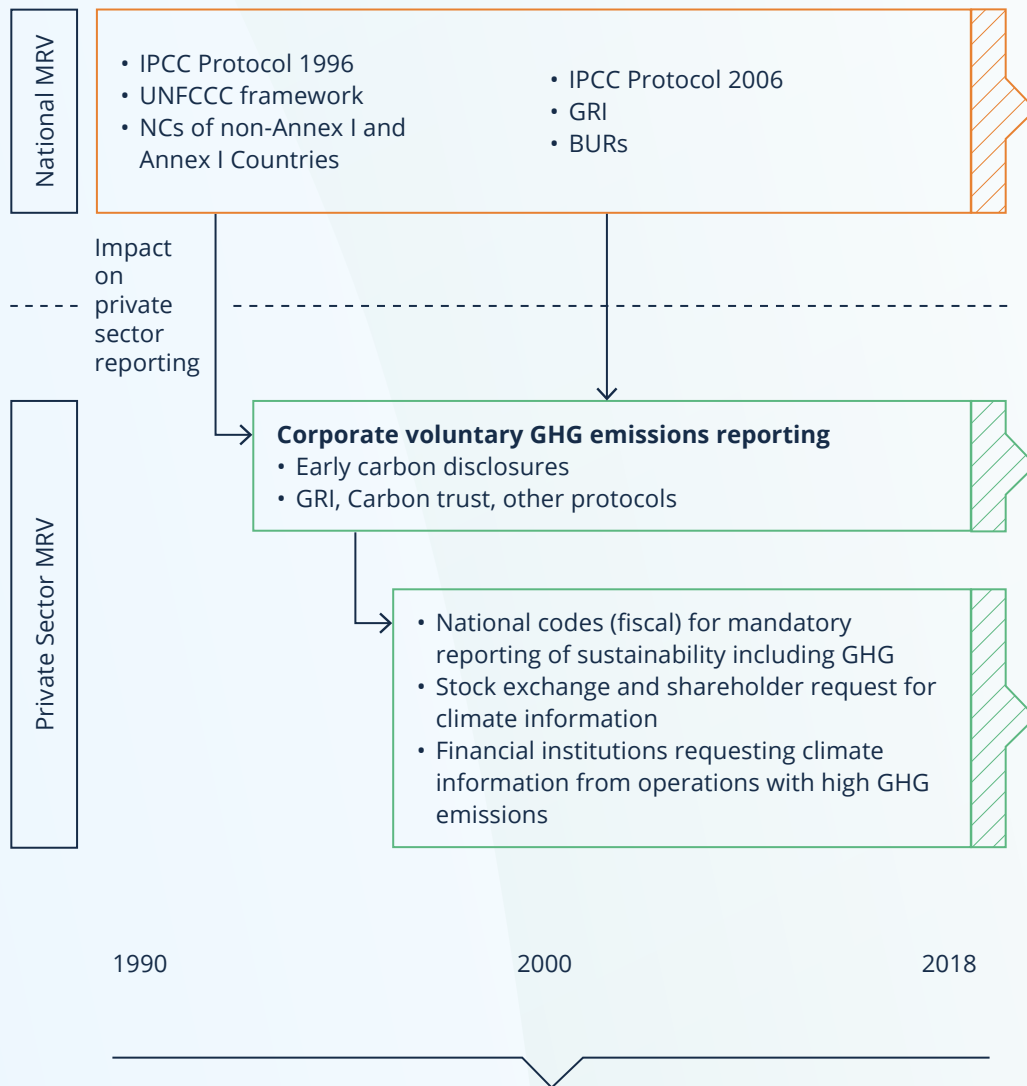
barriers since there were few or no service companies specialised in GHG inventories, and the first IPCC Guidelines only became available in 1996.

[Figure 3](#) depicts this process, in which the involvement of the private sector that started with voluntary reporting transitioned into a response to the demand from consumers and investors for transparency and the search for business opportunities.

As private sector actors see themselves reflected in national reports to the UNFCCC that are available to a global audience, their motivation grows to cross check the results against their own records. These internal processes of the private sector can contribute to national reporting processes, improving accuracy and precision. In this respect, [Figure 3](#) also shows how the national and private sector can interact on MRV issues and generate mutually beneficial conditions by sharing experience on methodologies, building the capacity of local consultants and aligning common interests in the implementation of mitigation actions, e.g. NAMAs and NDCs. [Box 12](#) gives an example of this type of interaction for the cement sector of Peru.

Figure 3

Linkages between national and private sector reporting systems



Sharing / exchange on:

- Methodologies (international methods, national emission factors)
 - Collaboration with national GHG inventory team
 - Local experts and capacity building processes
 - Aligning strategies with NAMAs and INDCs

Source: adapted from own compilation by GIZ/NIRAS

Box 12

The case of UNACEM climate reporting in Peru

The cement sector of Peru generates around 4.3 million tCO₂ per year according to the first BUR. Within the sector, UNACEM is one of the largest cement producers in Peru. Since the mid-2000s, the company has considered GHG emissions as part of its business strategy, starting with a CDM project for fuel switch and later introducing the use of clean energy and the manufacture of blended cements, with the aim of reducing emissions. UNACEM is aware of the impact of its operations on the national inventory and works through the national association of cement producers ASOCEM in a long-term collaboration with the Ministry of Environment, responsible for the NCs and BUR, to supply activity data on the production of clinker and cement to ensure the accuracy of the IPPU estimates of the national GHG inventory. Furthermore, UNACEM reports on emissions and energy in line with the Global Reporting Initiative (GRI) in sustainability reports for shareholders and the Lima stock exchange. UNACEM is currently working with ASOCEM on a draft NAMA for the sector, the first of its kind in the country, which is supported by its established in-company MRV practices.

See: http://www.unacem.com.pe/?page_id=8977&lang=en and <http://unfccc.int/resource/docs/natc/perbur1.pdf>

Private sector actors have taken voluntary steps to improve reporting, such as carbon footprint preparation, reports on sustainability, moves to permanent systems such as ISO 14064¹⁶ for quantification of GHG and ISO 50001¹⁷ for energy management and, since 1997, the GRI¹⁸ standard for corporate social responsibility (CSR). With more than 44,588 reports today, a strong national MRV system also can set the stage for governments to require private companies to measure and report in more detail. [Table 1](#) provides examples of how governments have utilised legislation to regulate the involvement of the private sector in climate change reporting in emerging economies, mostly related to their stock markets and fiscal regulations.

Finally, it is worth noting that other companies, particularly in the insurance industry¹⁹, saw climate change reports and the evolution of international climate policy as a clear indication to revise the scope of their services and differentiate the costs of insurances to account for climate risks to infrastructure, changes in regional energy generation matrices and the level of climate resilience of countries. A transparent national MRV system can provide country-specific information to inform this type of decision-making.

16 See: <https://www.iso.org/standard/38381.html>

17 See: <https://www.iso.org/iso-50001-energy-management.html>

18 See: <http://database.globalreporting.org/>

19 See: <https://hbr.org/2017/08/how-the-insurance-industry-can-push-us-to-prepare-for-climate-change>

Table 1.

Examples of GHG reporting practice in relation to the private sector

Country	Legislation	GHG reporting practice
Brazil	Sustainability Reporting law 3034/2006	The scheme was implemented by the <i>Agencia Nacional de Energia Eletrica</i> (ANEEL) to promote GHG reporting practices amongst public electricity providers and other companies.
China	National Development and Reform Commission (NDRC) Regulation 2014	The aim of this scheme is to increase transparency among major air pollutant emitters and strengthen the national infrastructure for MRV of carbon emissions by mandating reporting of GHG emissions across 10 specific industry sectors. The scheme applies to 20,000 companies.
India	The Securities and Exchange Board of India mandate for GHG emissions disclosure (2012)	The top 500 companies listed on the Bombay Stock Exchange (BSE) and the National Stock Exchange (NSE), based on market capitalisation, are required to disclose Business Responsibility Reports on environmental, social and governance issues as part of their annual reporting process, including GHG emissions.
Mexico	National Register of GHG emissions regulation 2014	Compliance with the scheme is necessary to obtain an annual operating licence for companies within the scope. The Ministry for Environment and Natural Resources is responsible for its development and implementation.
Peru	Decree N° 26126 for sustainability reporting	The sustainability report is now mandatory for all large enterprises and should be annexed to the yearly financial statements for the stock market superintendent. This includes reports on GHG emissions and mitigation actions of their operations.

Source: Kauffman et al, OECD, 2012

VIII. Improved access to funding

As recognised in the international climate negotiations, such as the Copenhagen Accord of COP 15, which states that developed countries commit to a goal of mobilising USD 100 billion a year to address the needs of developing countries²⁰, funding and access to finance is an important component of the response to climate change. The Climate Policy Initiative estimates that the global investment for climate change was USD 383 billion in 2016²¹, which, when compared to the USD 825 billion of total fossil fuel investment in the same year, gives evidence that much improvement is still needed in access to funding for climate-friendly investments. One challenge for climate finance is that, to qualify as such, it needs to be clear how the finance contributes to climate change mitigation and/or adaptation.

Consequently, national reporting is an excellent source of robust information on climate-friendly project aspects such as baselines and assessment of the mitigation potential. For many donors, development banks and other financiers, the information from national reports, NAMAs, monitoring and evaluation systems in recipient countries and NDC commitments is key to understanding the needs and opportunities for funding of climate change mitigation and adaptation in developing countries.

For example, the Asian Development Bank (ADB) has identified that it is critical for cities that are requesting funding for long-term cleaner development investments to establish clear linkages between the carbon impacts, national GHG inventory and specific mitigation actions. [Figure 4](#) shows how this

approach links project, city and national inventories. In such a case, the presence of an established national MRV system improves the accessibility of information needed by the funding request to describe the impacts on the main emission sources at the national level.

Similarly, regular national reporting may help countries access finance from sources such as the Green Climate Fund (GCF). A funding proposal to the GCF requires detailed information on baseline conditions, quantitative mitigation and adaptation impacts, alignment with national climate policies and goals, etc. When a country has a series of ambitious national reports to draw from, it facilitates access to this type of information, thereby making the funding request process easier for applicants from both the public and private sectors. Furthermore, since monitoring of GCF-funded projects requires the application of a series of quantitative indicators, a country with a developed MRV system offers better conditions for setting up and implementing a system for project monitoring. In some cases, project indicators may even overlap with existing elements of the national MRV system. Thus, a national MRV system can serve as a solid foundation for launching proposals to funding sources such as the GCF.

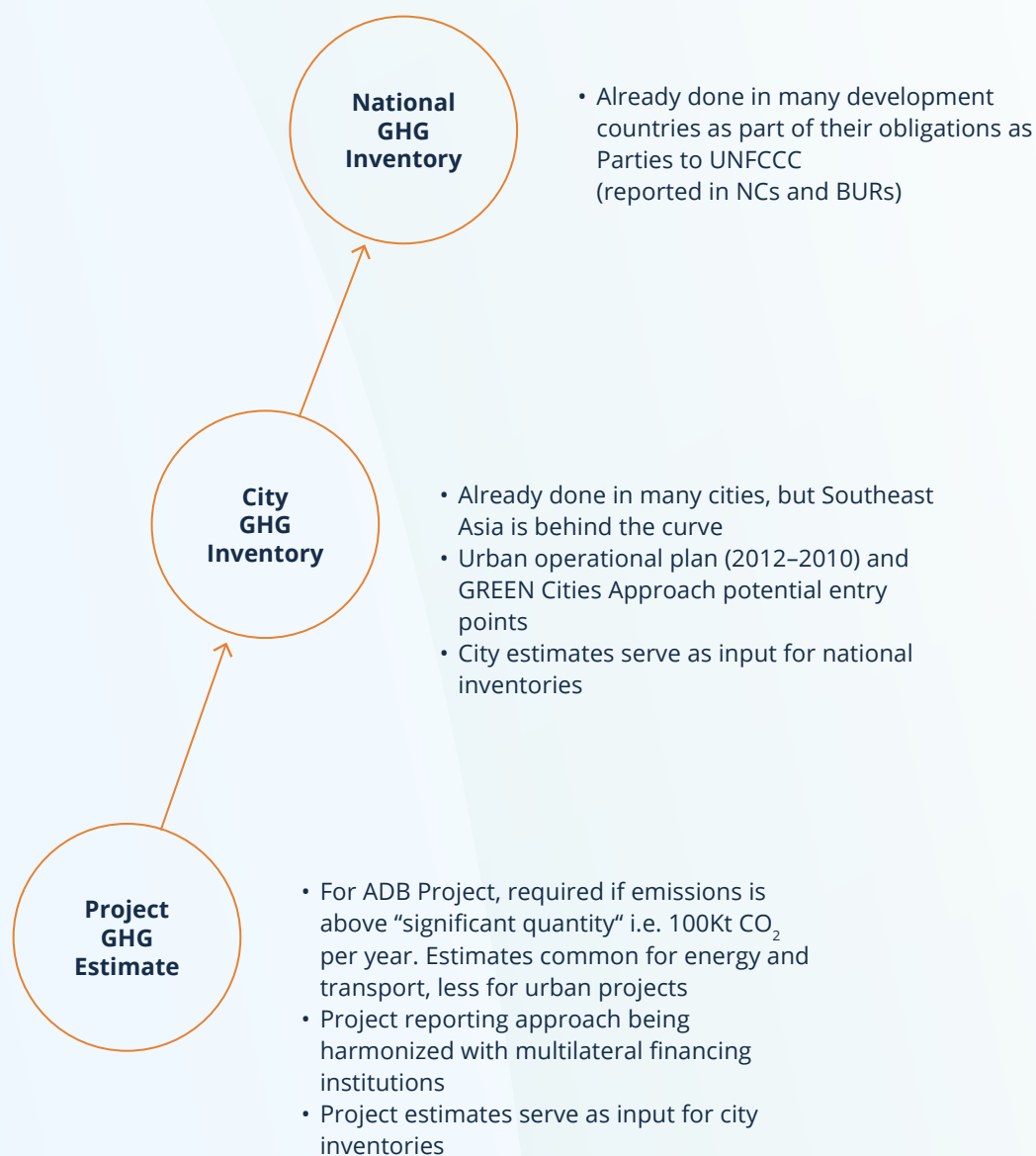
Finally, national climate reports of developing countries include sections to describe climate finance needs, for example, the ‘support needed’ section of the BUR. An ambitious national MRV system can fully exploit this opportunity to inform the international community, including potential donors and sources of finance, of the areas where investment is needed in the country, easing the process of matching available funds with activities needing finance.

²⁰ See: [Decision 2/CP.15](#)

²¹ Global Landscape of Climate Finance 2017, CPI

Figure 4

Links among Project Estimates, City Inventories, and National Inventories for GHG inventories



Source: adapted from ADB Southeast Asia papers, 2015

03.

Summary – key messages

The effort of transparent and ambitious climate reporting has benefits beyond reporting to the UNFCCC that may not be directly visible. This discussion paper attempts to provide a first glimpse of the multiple benefits a country can generate by setting up a robust and sustainable MRV system. The benefits elaborated on in this discussion paper intend to set a first starting point and should motivate countries to explore further benefits of MRV systems.

This discussion paper highlights national benefits of international reporting requirements, which include

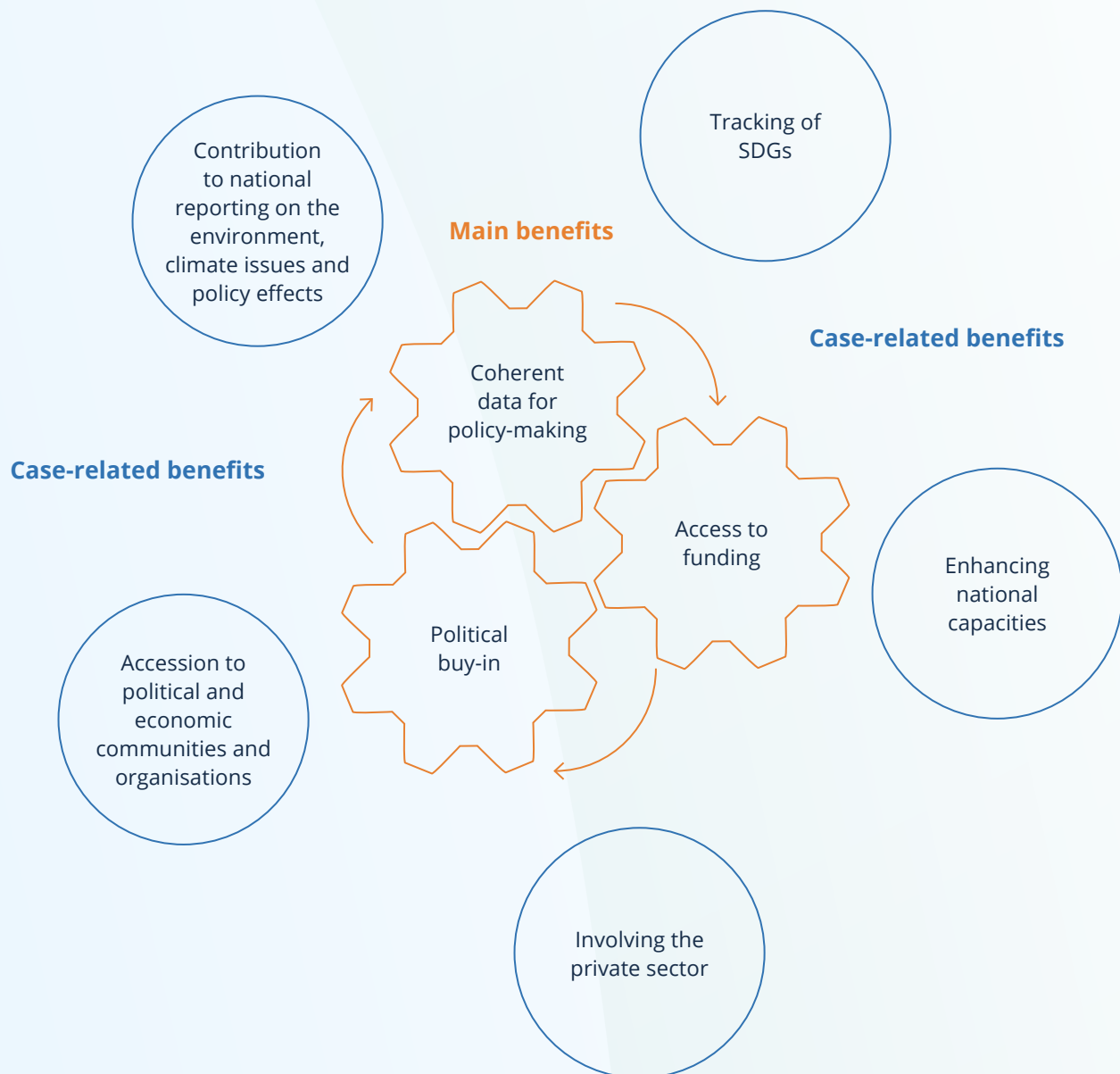
1. **supporting the tracking of SDGs;**
2. paving the way for **accession to economic and political communities and organisations;**
3. **contributing to national reporting on environmental, climate and policy questions** and communicating these to different target audiences, including the general public,
4. **providing coherent data for informed national policy- and decision-making** on climate issues and other related matters, making it possible to analyse the efficiency and effectiveness of policy implementation, which is an element of good governance;

5. **increasing the political buy-in for climate issues** at the national level;
6. **enhancing national capacities** by involving a large number of stakeholders from a variety of national institutions in the operationalisation of the MRV system;
7. **increasing the involvement of the private sector** in climate actions; and
8. **improving access to funding.**

A well-functioning reporting system can bring a number of benefits, which, to a certain degree, depend on countries' national circumstances. The examples provided in this discussion paper may not be exhaustive and countries may identify additional benefits relevant to their country's circumstances, which would contribute to enhancing the national understanding of the merits of transparent and sustained reporting on climate action.

Figure 5

Main benefits and case-related benefits of climate reporting



Source: own compilation by GIZ

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