Can developing countries meet the reporting requirements under the Paris Agreement?: insights from biennial update report (BUR) analysis

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Summary

The enhanced transparency framework (ETF) under Article 13 of the Paris Agreement (PA) builds on and enhances the existing transparency arrangements under the UN Convention on Climate Change (UNFCCC). The objective of this paper is to identify to what extent the existing reporting of greenhouse gas (GHG) inventories and mitigation actions by developing countries are already in line with new reporting requirements under the ETF at the time of submitting their latest biennial update reports (BURs) in October 2019. The paper found that the majority of the 50 developing countries analysed are in line with the ETF requirements for "use of IPCC inventory guidelines", "reporting of GHGs" and "reporting of gases affected by mitigation actions". On the other hand, only a minority of them have met the ETF requirements for "use of Global Warming Potential (GWP)", "reporting of consistent annual time series", "latest reporting year" and "projections of national GHG emissions". Detailed reporting related to Article 6 will also be new to many developing countries. These areas are the most critical for developing countries to prepare for reporting GHG inventories and mitigation actions under the ETF.

1. Introduction

1.1 Transition to the Enhanced Transparency Framework of the Paris Agreement

At the 21st session of the Conference of Parties (COP21) to the United Nations Framework Convention on Climate Change (UNFCCC) in 2015, the Parties agreed to establish an enhanced transparency framework (ETF) under Article 13 of the Paris Agreement (PA) (UNFCCC, 2015). The purpose of the ETF is to give clarity on understanding of climate change actions and support in the context of nationally determined contributions (NDCs). Parties must ensure their NDCs are progressive each time they renew them in a five-year cycle. In this process, Parties are required to regularly report on information necessary to track progress in implementing and achieving their NDCs in the ETF. By building mutual trust and confidence, the ETF ultimately aims to promote the effective implementation of the PA.

At COP24 in 2018, new "modalities, procedures and guidelines for the transparency framework (MPGs)" were adopted (UNFCCC, 2018). The MPGs require all Parties, except for the least developed country Parties and small island developing States, to submit first biennial transparency reports (BTRs) by 31 December 2024. Prior to the ETF of the PA, Non-Annex I countries (hereafter referred as developing countries) have been required to report national communications (NCs) since 1992 (UNFCCC, 1992), and biennial update reports (BURs) since 2011 (UNFCCC, 2011). Some of the required information elements under the ETF as specified in the MPGs overlap with those of the existing transparency arrangements. Examples include national GHG inventory reports and information on mitigation policies and measures, actions and plans (hereafter referred to as mitigation actions).

However, the ETF will require broader and more detailed information in BTRs, as it builds on and enhances the existing transparency arrangements of developing countries (UNFCCC, 2018) (Table 1). For instance, each Party must use the 2006 IPCC Guidelines for their GHG inventories under the ETF. On the other hand, with NCs and BURs, developing country parties can use an older set of IPCC guidelines, and so on. Since stepping up to fully reporting BTRs by 2024 under the ETF may not be feasible for some of the developing countries without adequate existing capacity, the MPGs incorporates the concept of flexibility (UNFCCC, 2018). With flexibility, these countries can adopt less strict reporting requirements on some of the reporting elements, while still being expected to improve their reporting over time under the ETF.

1.2 Why do we analyse BURs?

The purpose of this paper is to identify the gaps of reporting on GHG inventories and mitigation actions by developing countries with consideration on the requirements under the ETF. As mentioned above, there are overlapping information elements required under both the ETF and the existing transparency arrangements. Hence, an analysis of

reporting trends in submitted NCs and BURs by developing countries under the existing transparency arrangements allows us to identify the reporting requirements where they have already been in line with the MPGs and the requirements where they still need to improve, if they were to fully meet the MPGs. We hope to encourage developing countries to consider the current state of their reporting so that they can plan to make improvements in their reporting under the ETF in the future.

Of the national reports submitted under the existing transparency arrangements, this paper discusses GHG inventories and mitigation actions reported in the latest submitted BURs, based on the IGES BUR Database (IGES, 2019). NCs are not within the scope of this study, which means that this paper discusses reporting trends of the 50 countries that have submitted BURs at least once as of October 2019. This is equivalent to around 30% of the total of 154 developing countries under the UNFCCC.

2. Overview of BURs analysed

This analysis focuses on reporting of GHG inventories and mitigation actions in the most recent BURs submitted by 50 developing countries as of October 2019. The analysed BURs include the Third BUR (BUR3) from seven countries, the Second BUR (BUR2) from 21 countries and the First BUR (BUR1) from 22 countries (Figure 1). The BURs are from countries in all the regions, namely Africa, Asia-Pacific, Eastern Europe, Latin America and Caribbean, and Western Europe and Others (Figure 2).

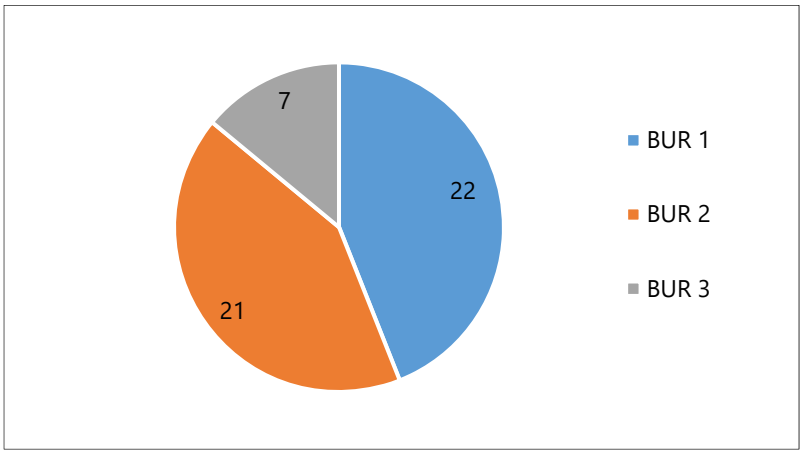

Figure 1. Number of BURs analysed by the version submitted (n=50), based on IGES. (2019a).

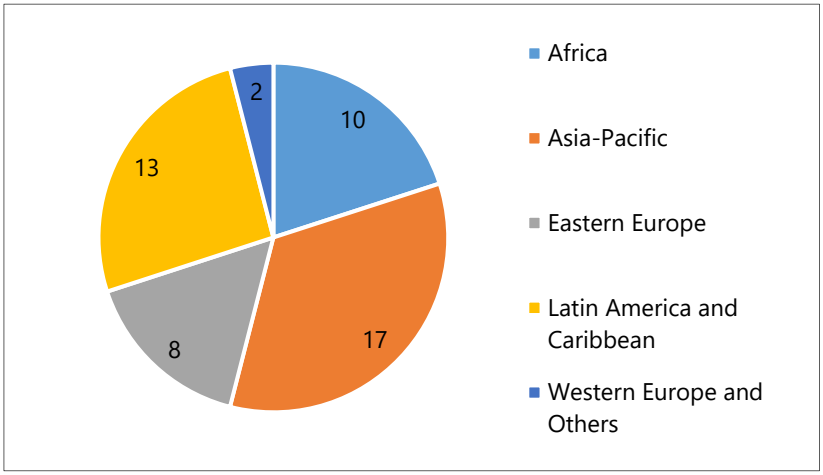

Figure 2. Regional breakdown of countries with BURs analysed (n=50) (Source: UN DGACM, 2020)

3. GHG Inventories

3.1 Use of IPCC guidelines

A total of 42 out of the 50 countries analysed used 2006 IPCC Guidelines for National Greenhouse Gas Inventories (2006 IPCC Guidelines). Among those 42 countries using the 2006 IPCC Guidelines, 30 did not use any other IPCC Guidelines. This suggests that 60% of the countries which submitted BURs are already in line with the MPGs regarding the use of IPCC Guidelines. The other 12 countries used multiple IPCC Guidelines, including the 2006 IPCC Guidelines, in their BURs.

Eight countries did not use the 2006 IPCC Guidelines; rather, they used the Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories, IPCC Good Practice Guidance and Uncertainty Management in National GHG Inventories, or IPCC Good Practice Guidance for Land Use, Land-use Change and Forestry. These countries meet the requirements of BUR guidelines (UNFCCC, 2011), but they will be required to use the 2006 IPCC Guidelines to be in line with the MPGs.

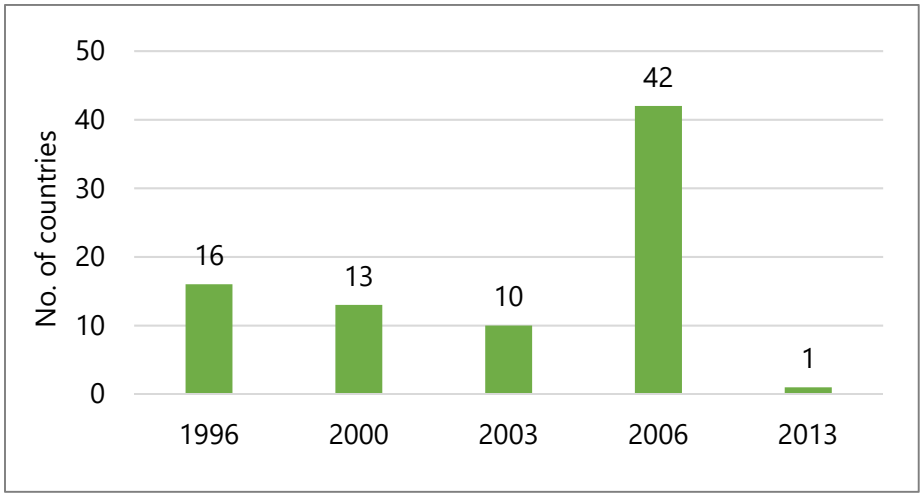

Figure 3. No. of countries by the use of IPCC Guidelines on GHG Inventories in BURs analysed, based on IGES. (2019a). (Note: The total is more than 50 since some countries used more than one set of IPCC Guidelines.)

3.2 GHGs

All of the 50 countries analysed reported on three gases (CO_2, CH_4 and N_2O), which is consistent with BUR guidelines. Approximately 30 countries reported on seven gases (CO_2, CH_4, N_2O, HFCs, PFCs, SF_6, and NF_3) except for NF_3, which is emitted from specific electronics industries (e.g. 2E1 Integrated Circuit or Semiconductor). If not counting NF_3, this suggests that approximately 60% of the countries that submitted BURs are already in line with the MPGs. Approximately 30 countries even reported on a further four gases (CO, NOx, NMVOCs, and SOx).

A total of 40% of the countries reported on only three gases, and they will be required to report other mandatory gases to be in line with the MPGs. However, if flexibility is applied, they will meet the requirements by reporting on those three gases.

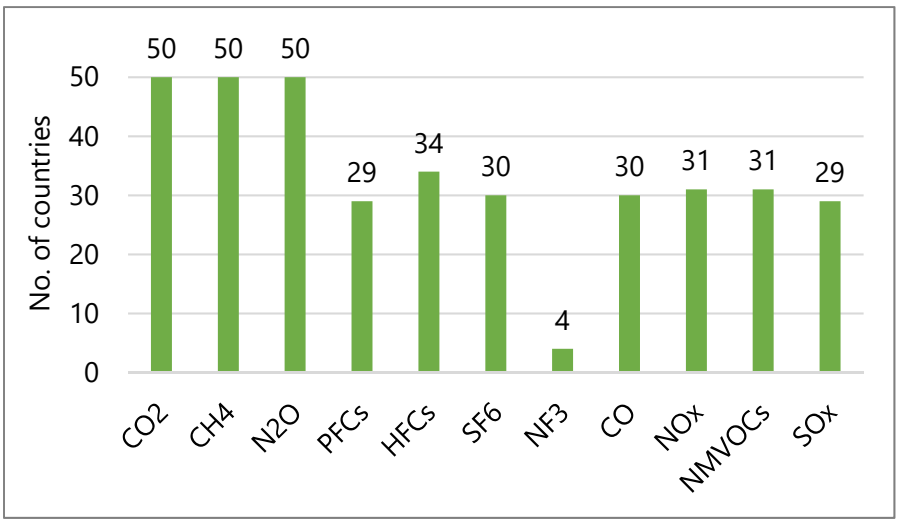

Figure 4. No. of countries by GHGs reported in BURs analysed (n=50), based on IGES. (2019a).

3.3 Global Warming Potential (GWP)

Five countries used GWP from the IPCC Fifth Assessment Report (AR5), suggesting that 10% of the countries which have submitted BURs are already in line with the MPGs. A further 32 countries used the IPCC Second Assessment Report (AR2), which is in line with BUR guidelines. Ten countries used the IPCC Fourth Assessment Report (AR4). Those countries which did not use AR5 in their BURs will be required to use it under the ETF. Flexibility is not an option for this information element.

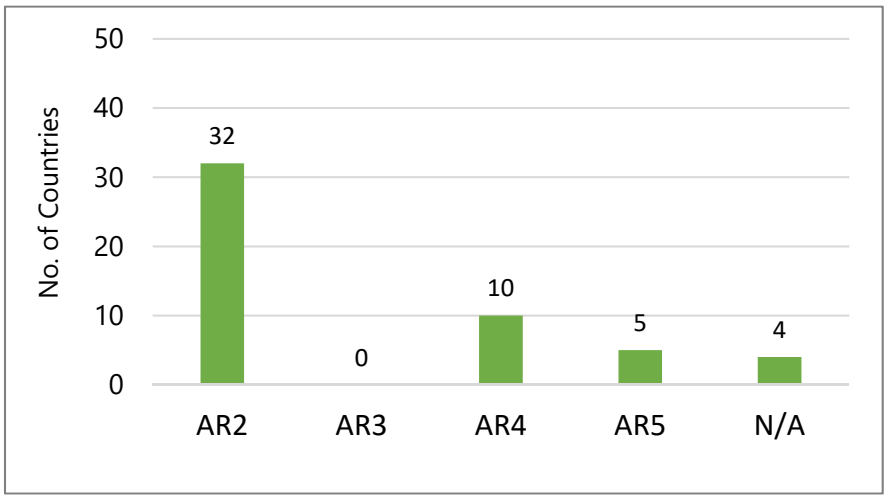

Figure 5. No. of countries by the source of GWP used in BURs analysed (n=50), based on IGES. (2019a). (Note: "AR" refers to IPCC Assessment Report. "N/A" means the use of GWP is not mentioned in the BURs.)

3.4 Consistent annual time series

16 countries reported consistent annual time series since 1990. This suggests that 32% of the countries which submitted BURs are already in line with the MPGs. Another 20 countries reported consistent annual time series since 1995 or after. These 20 countries and the other 14 countries, which reported emissions data only for spot years, will be required to improve their reporting to be in line with the MPGs. However, if flexibility is applied, these countries will be required to report only emissions data for the reference year or period for their NDCs and a consistent annual time series at least from 2020.

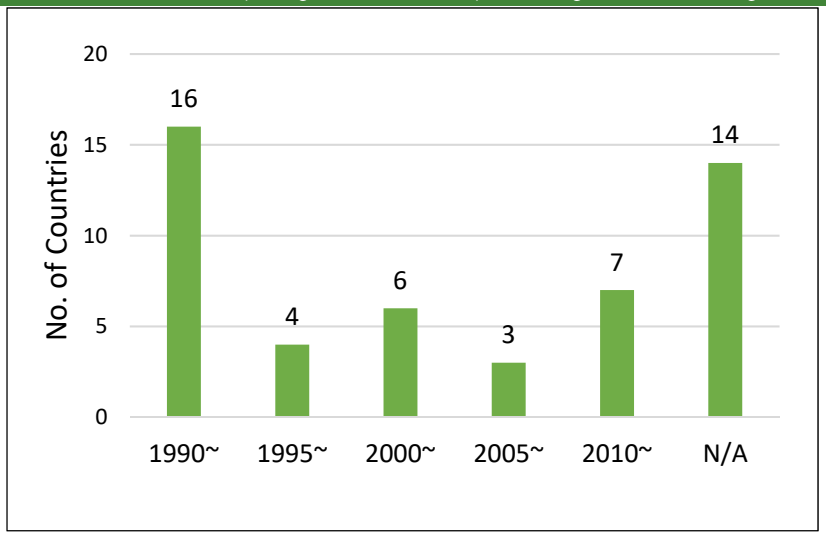

Figure 6. No. of countries by the consistent annual time series of GHG inventories data provided in BURs analysed (n=50), based on IGES. (2019a). (Note: "N/A" means that countries did not report GHG inventories for any consecutive years.)

3.5 Latest reporting year

Seven countries reported on the latest reporting year that was two years prior to the submission of their BURs. This suggests that out of the countries which submitted BURs, 14% are already in line with the MPGs. A total of 13 countries reported on their latest reporting year, that was three years prior to the submission of their BURs. If flexibility is applied in this reporting then it will be in line with the MPGs. 21 countries reported on the latest reporting year, which was four years prior to the submission of their BURs in line with BUR requirements. In order to comply fully with the MPGs, more than 80% of the countries will need to report on the latest reporting year which should be two years prior to the submission year.

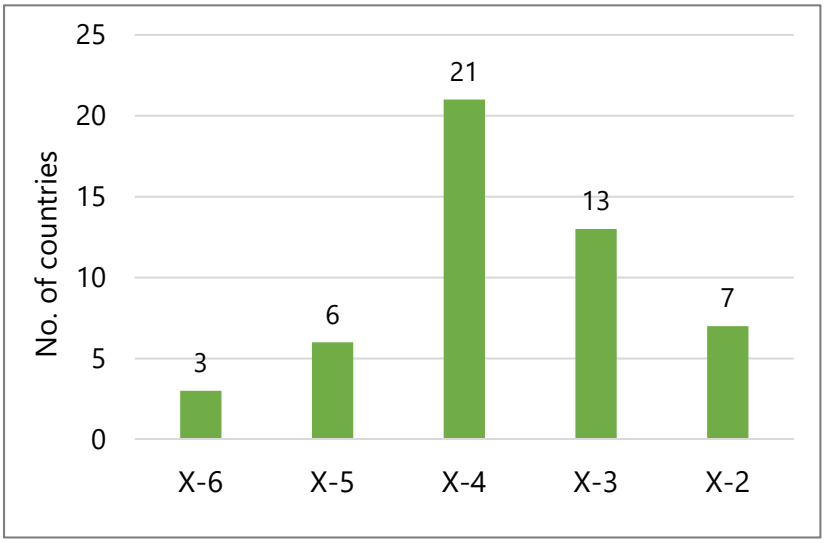

Figure 7. No. of countries by the latest reporting year of GHG Inventories in BURs analysed (n=50), given X representing the submission year of the BUR, based on IGES. (2019a).

4. Mitigation Actions

4.1 Gases affected

Depending on sectors, approximately 50% to 90% of countries submitting BURs reported gases affected by mitigation actions. Out of these, 12% to 30% of the countries reported only CO_2. This implies that these countries are already in line with the MPGs, which require Parties to report gases affected by mitigation actions to the extent possible. However, since many countries include gases other than CO_2 in their NDCs (IGES, 2019b), reporting of non-CO_2 gases seems to be essential for these countries, in order to report progress made in implementing and achieving their NDCs under the ETF.

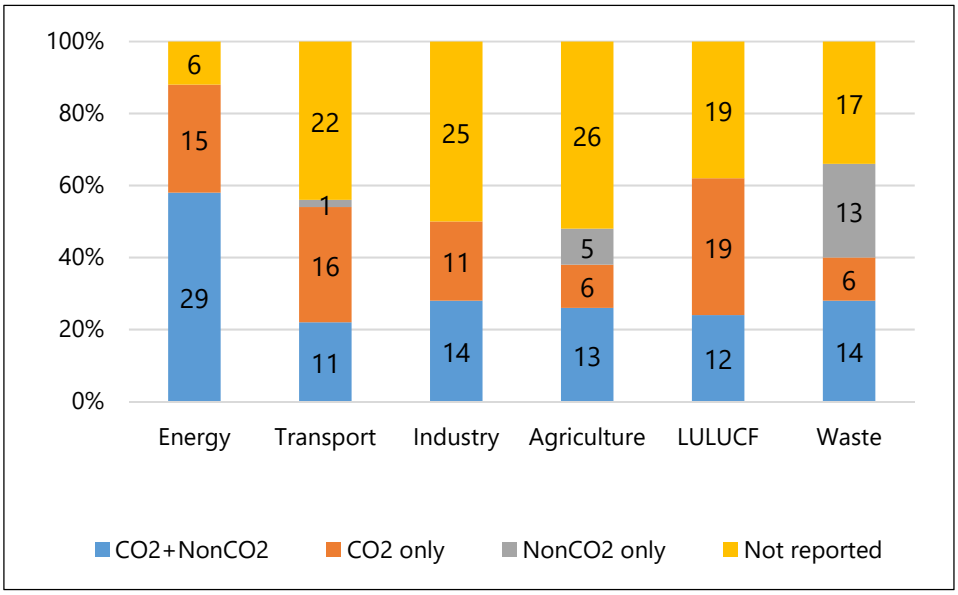

Figure 8. Distribution of countries by GHGs affected by mitigation actions and by sector reported in BURs analysed (n=50), based on IGES. (2019a). (Note: The integral numbers are amount of countries.)

4.2 Progress indicators and goals

For progress indicators of mitigation actions, the most common unit used for reporting is GHG-based quantitative (e.g. amount of reduced GHG), while non-GHG based quantitative goals (e.g. amount of electricity generated) or qualitative goals (e.g. improvement of energy efficiency) are more common than GHG-based goals. Moreover, nine countries did not report progress indicators and goals of any kind for their mitigation actions.

The MPGs do not require developing countries to report progress indicators for each mitigation action, but require reporting indicators to track progress towards the implementation and achievement of NDCs. Therefore, what current reporting in BURs can

suggest is that, given the majority of NDCs are GHG-based, it will be particularly necessary for those countries that have not reported GHG-based progress indicators and goals for their mitigation actions in their BURs to report, at minimum, GHG-based indicator(s).

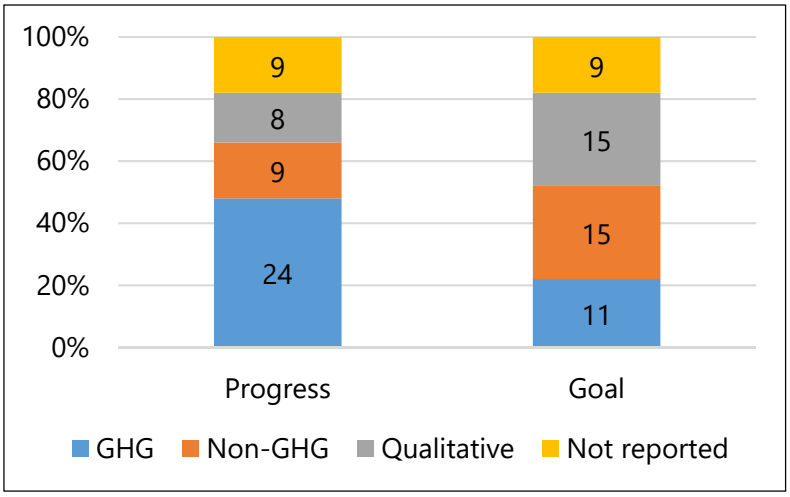

Figure 9. Distribution of countries by the types of progress indicators and goals of mitigation actions in BURs analysed (n=50), based on IGES. (2019a). (Note: The integral numbers are amount of countries.)

4.3 Projections of national GHG emissions

There were 18 countries that reported projections of national GHG emissions with measures, including 17 countries which reported projections without measures as well. This suggests that 36% of the countries submitting BURs are already in line with the MPGs. The remaining countries will be required to report projections with measures in order to meet the requirements under the ETF, although they will be only encouraged to report projections, if flexibility is applied.

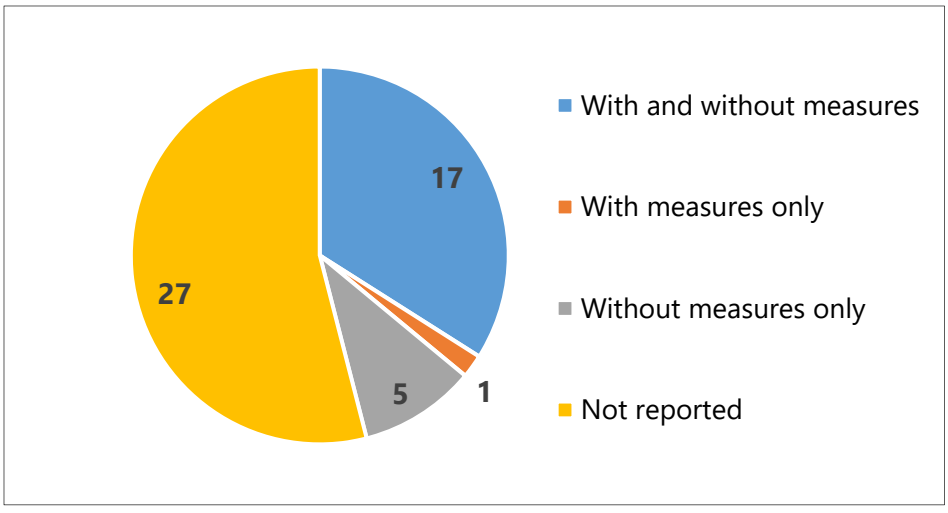

Figure 10. No. of countries which reported projections of national GHG emissions with

and without measures in BURs analysed (n=50), based on IGES. (2019a).

4.4 International market mechanisms

Approximately 70% of the countries reported information on Clean Development Mechanism (CDM) projects, while about 40% reported on projects under REDD+ (reduced emissions from deforestation and forest degradation and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries) and 10 % reported on voluntary market projects such as Gold Standard and Verra. For the Joint Crediting Mechanism (JCM), which the Government of Japan currently implements with 17 partner countries, out of the eight participating countries which submitted BURs, two countries reported on JCM projects. In addition, about 40% of the countries which submitted BURs reported issued units from international market mechanisms, in addition to information on projects as mentioned above.

The MPGs require Parties to provide more detailed information if they engage in the use of the so-called internationally transferred mitigation outcomes (ITMOs) under Article 6. This information includes an emissions balance adjusted on the basis of corresponding adjustments, as well as information on how sustainable development and environmental integrity are ensured. Parties will also be required to provide other information, depending on decisions to be made under Article 6 of the PA (UNFCCC, 2018). These requirements will be new to all countries, so they need to prepare for reporting necessary information elements under the ETF and to be in line with Article 6.

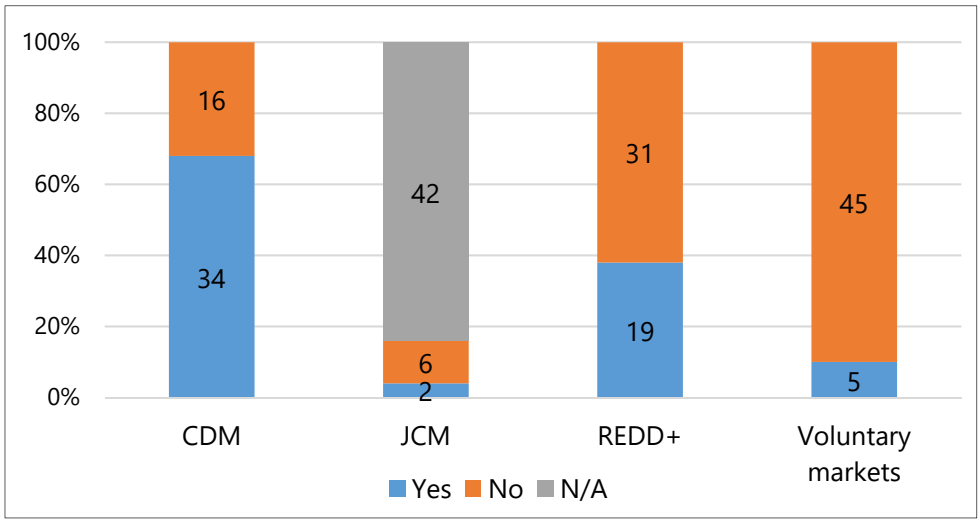

Figure 11. Distribution of countries by the reporting on projects under different international market mechanisms in BURs analysed (n=50), based on IGES. (2019a). (Note: The integral numbers are amount of countries.)

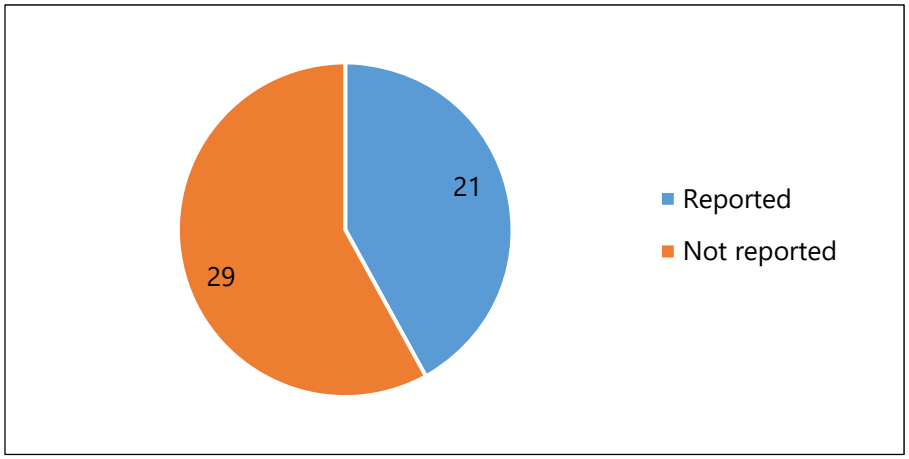

Figure 12. Number of countries reported on issued units from international market mechanisms in BURs analysed (n=50), based on IGES. (2019a).

5. Conclusion

The analysis found that the majority of the countries which submitted BURs are in line with the requirements under the ETF for the following items:

- Use of IPCC inventory guidelines
- Reporting of GHGs
- Reporting of gases affected by mitigation actions

On the other hand, only a minority of those countries which submitted BURs are in line with the requirements under the ETF for the following items:

- Use of GWP (Flexibility is not provided under the ETF.)
- Reporting of consistent annual time series (If flexibility is applied, the requirement will be to report emissions data for the reference year or period for their NDCs and a consistent annual time series at least from 2020.)
- Latest reporting year (Even if flexibility is provided, a minority are in line with the requirements under the ETF.)
- Projections of national GHG emissions (If flexibility is provided, this is "encouraged" to be reported.)

In addition, countries will need to prepare for reporting of new information elements related to Article 6, including an emission balance adjusted on the basis of corresponding adjustments etc.

Annex

Table 1. Comparison of section headings of BTR with BUR and NC

Section heading of BTR	Inclusion in BUR	Inclusion in NC
National inventory report of anthropogenic emissions by sources and removals by sinks of greenhouse gases ("Shall")	Included	Included
Information necessary to track progress made in implementing and achieving nationally determined contributions under Article 4 of the Paris Agreement ("Shall")	Partially included (mitigation actions, including international market mechanisms; domestic measurement, reporting and verification arrangements)	Partially included (programmes containing measures to mitigate climate change, information considered relevant to the achievement of the objective of the convention)
Information related to climate change impacts and adaptation under Article 7 of the Paris Agreement ("Should")	Not included	Included
Information related to financial, technology development and transfer and capacity building support needed and received under Articles 9-11 of the Paris Agreement ("Should")	Included	Included

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