

Global Assessment of Environmental-Economic Accounting and Supporting Statistics

Additional analysis

Version 3.0

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Abbreviations and acronyms

AFF	Agriculture, forestry and fishery accounts
BIOFIN	Biodiversity Finance Initiative
EEA	Environmental-Economic Accounts
EGSS	Environmental goods and services sector accounts
EPEA	Environmental protection expenditure accounts
MFA	Material flow accounts
SEEA	System of Environmental-Economic Accounting
UN	United Nations
UNCEEA	United Nations Committee of Experts on Environmental-Economic Accounting
UNDP	United Nation Development Programme
UNSD	United Nations Statistics Division

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1. Introduction

This is a complementary document to the *Global Assessment of Environmental-Economic Accounting and Supporting Statistics* report¹, which was compiled by the United Nations Statistics Division (UNSD) under the auspices of the United Nations Committee of Experts on Environmental-Economic Accounting (UNCEEAA). The aim of the Global Assessment was to assess the progress made in meeting targets of the System of Environmental-Economic Accounting (SEEA) implementation strategy across the globe.

The Global Assessment took the form of an online survey that was emailed on 8 June 2017 to the statistical offices of 193 Member States and 22 territories. In total, 109 countries responded to the survey. The results of the survey, covered in the *Global Assessment of Environmental-Economic Accounting and Supporting Statistics* report, provides valuable understanding of the current status of SEEA implementation across countries, including information on institutional arrangements, the availability of funding, future plans to compile new accounts, and whether a country is receiving technical assistance.

The *Global Assessment of Environmental-Economic Accounting and Supporting Statistics* report¹ was published in March 2018. Information on SEEA implementation for 18 additional countries was sourced by the UNSD from UN regional commissions and international agencies after this date and stored on an additional Excel spreadsheet (UNSD Excel spreadsheet)². In total, the consolidated spreadsheet includes information from 127 countries.

This document covers additional analysis done on the data from this spreadsheet, together with data from the original Global Assessment dataset. The two objectives of this document is to (1) provide an update on descriptive statistics covering all 127 countries, and (2) conduct gap analysis for selected accounts, namely: water, energy, air emissions, material flow accounts (MFA), environmental protection expenditure accounts (EPEA) and agriculture, forestry and fishery accounts (AFF).

2. Descriptive statistics

2.1 Compiled and planned accounts

The following maps and graphs provide an overview of the extent of environmental-economic accounting (EEA), using data for 127 countries from the updated UNSD Excel spreadsheet². The analysis is based on the following questions from the Global Assessment questionnaire¹:

- Question 4: *Does your country have a programme on environmental-economic accountingⁱ?*
- Question 8: *Which modules of environmental-economic accounting have been or are currently being compiled by you country?*
- Question 21: *Please let us know which environmental-economic accounts you plan to begin compiling?*

Figure 1: Geographical coverage of respondents

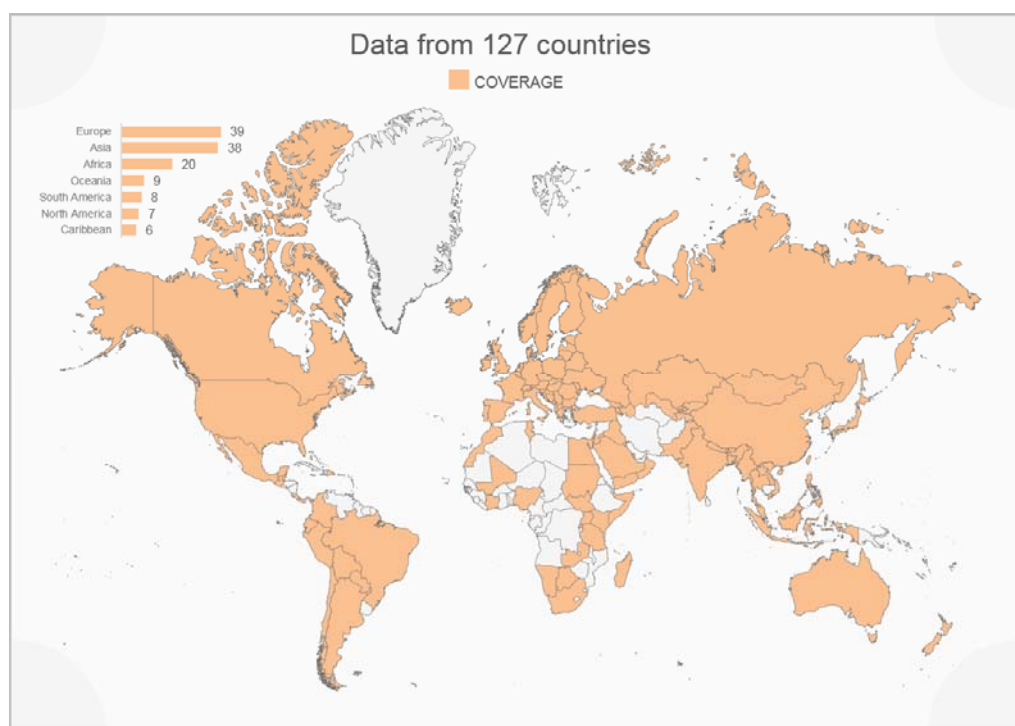
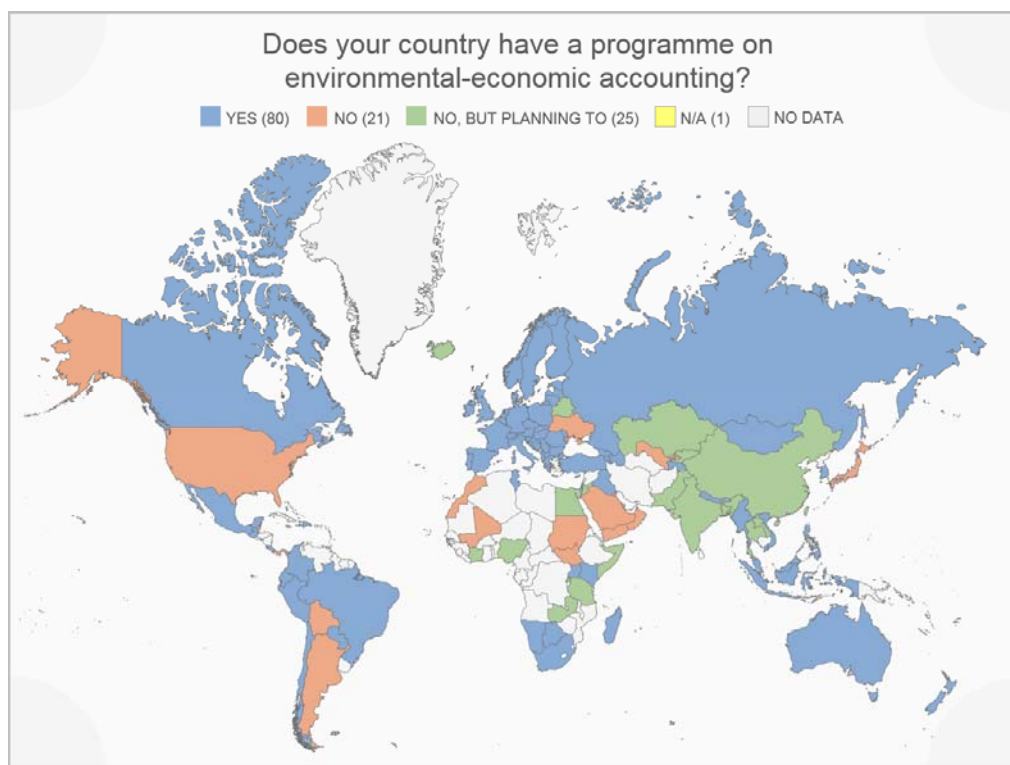


Figure 1 shows the geographical coverage of all 127 countries for which data are available. This includes the 109 respondents from the original survey and the additional 18 countries of which the UNCEEA has information on. The map shows all countries who responded,

ⁱ A country is defined as having a programme if they have compiled an account or module at least once. Other organisations might use a different definition.

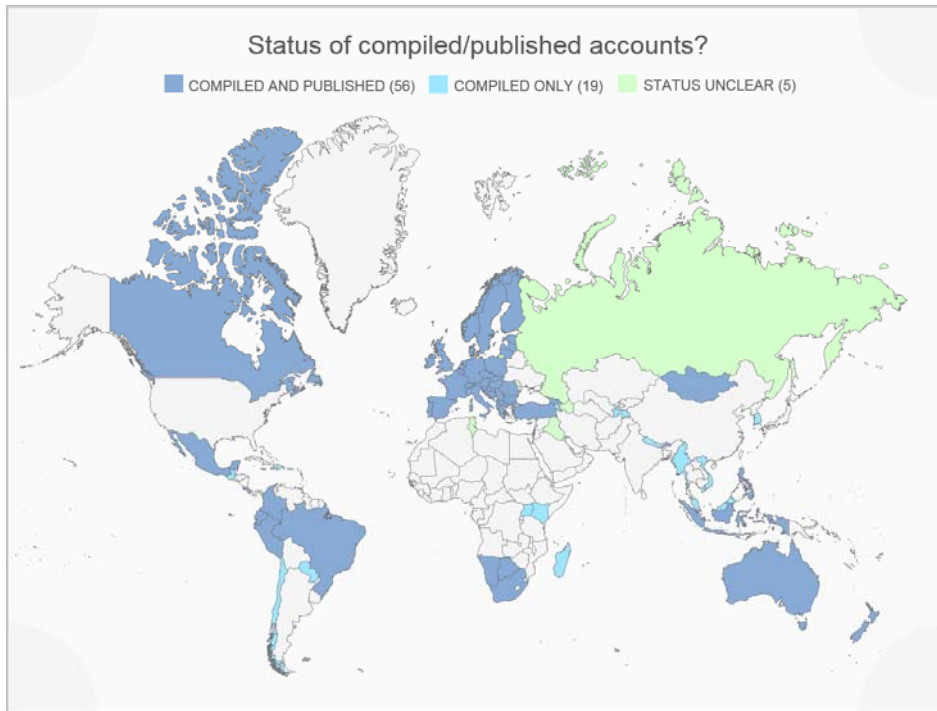
irrespective of whether they are compiling accounts or not. Europe and Asia dominate the Global Assessment with the most number of respondents.

Figure 2: Account compilation



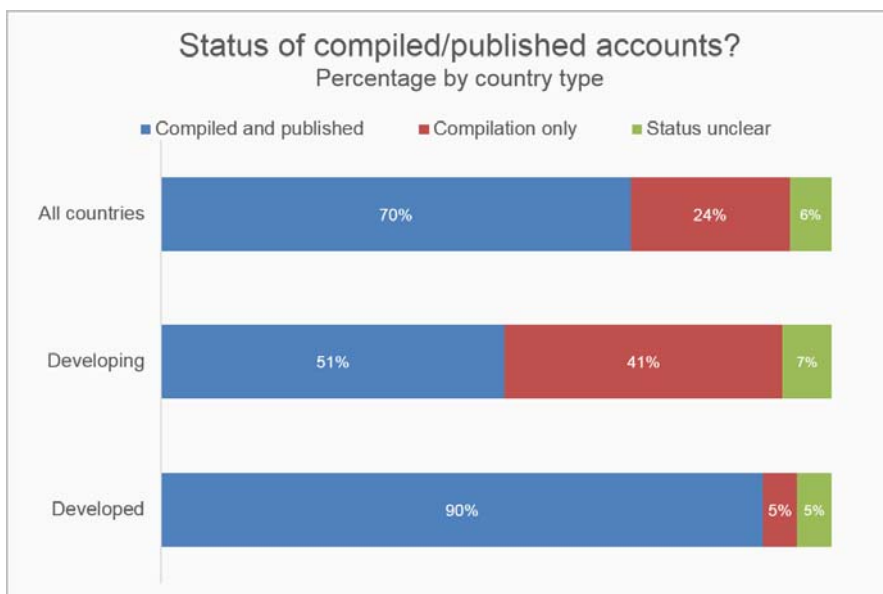
Question 4 in the Global Assessment questionnaire asked countries to indicate if they had implemented a programme on EEA. Figure 2 shows that, of the 127 countries covered in the survey, 80 (63%) indicated that they have a programme, while 25 (20%) are planning to implement one. Twenty-one countries (17%) do not have a programme and are not planning to start one.

Figure 3: Status of compiled/published accounts



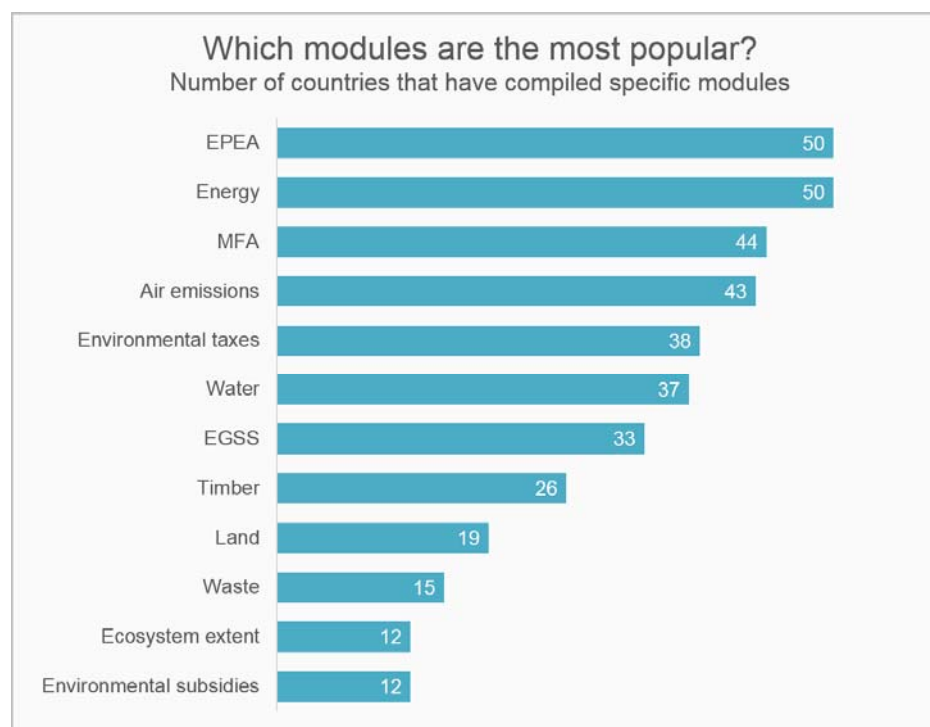
If a country indicated the presence of an EEA programme, Question 4 further prompted that country to indicate whether it has compiled and/or published at least one EEA. Of the 80 countries that indicated that they have a programme, 56 (70%) indicated that they have compiled and published accounts, while 19 (24%) indicated that they've only compiled accounts (refer to Figure 3).

Figure 4: Status of compiled/published accounts (by country type)



Broken down by country type, 90% of developed countries have compiled and published at least one account, while only 51% of developing countries have done the same (refer to Figure 4).

Figure 5: Most popular modules (all countries)



Data from the UNSD Excel spreadsheet² (based on Question 8 in the Global Assessment questionnaire) provides an indication of which modules have been or are currently being compiled by the 80 countries that have a programme. Note it is possible for a country to have compiled (or to be compiling) more than one module.

Figure 5 shows that EPEA and energy accounts are the most compiled modules across the countries surveyed, followed by MFA and air emissions accounts.

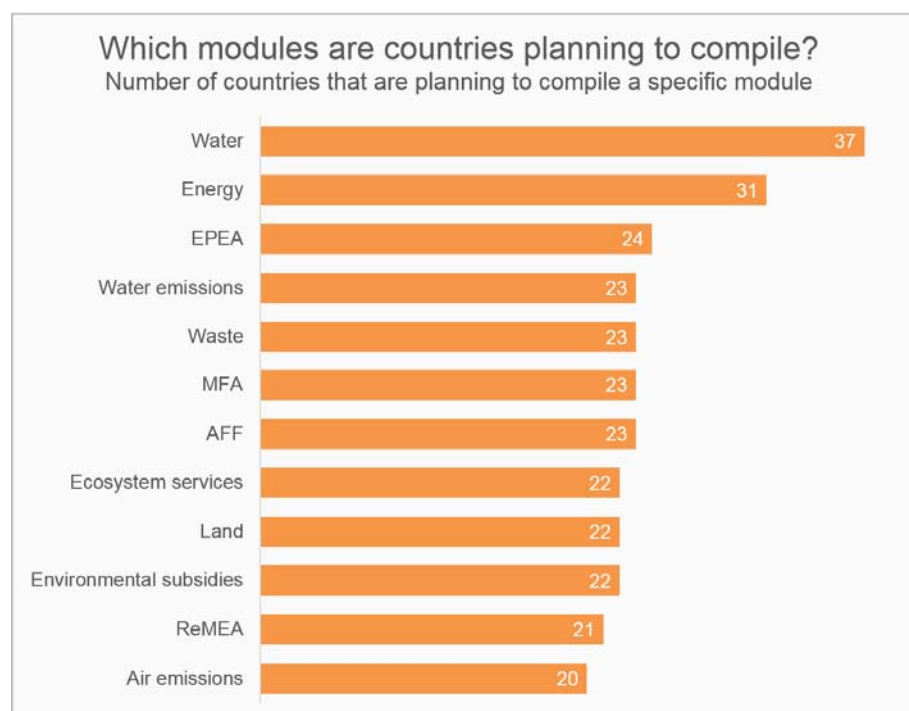
Table 1: Most popular modules (by country type)

Which modules are the most popular?
Number of countries that have compiled specific modules

	Developed	Developing
EPEA	33	17
Energy	26	24
MFA	35	9
Air emissions	32	11
Environmental taxes	34	4
Water	12	25
EGSS	28	5
Timber	13	13
Land	7	12
Waste	9	6
Ecosystem extent	4	8
Environmental subsidies	10	2

Table 1 provides the same breakdown, but by country type. Developed countries have focussed mostly on compiling data related to MFA, environmental taxes and EPEA. Developing countries, on the other hand, have concentrated on water and energy accounts, followed by EPEA.

Figure 6: Accounts in the pipeline (all countries)



Question 21 from the Global Assessment questionnaire asked which environmental-economic modules countries are planning to compile. Figure 6, based on the UNSD Excel spreadsheet², shows that 37 countries indicated that they are planning to compile water accounts, while 31 are looking into developing energy accounts.

Table 2: Accounts in the pipeline (by country type)

Number of countries that are planning to compile a specific module			
	Developed	Developing	Total
Water	12	25	37
Energy	8	23	31
EPEA	7	17	24
AFF	6	17	23
MFA	3	20	23
Waste	5	18	23
Water emissions	4	19	23
Environmental subsidies	10	12	22
Land	6	16	22
Ecosystem services	5	17	22
ReMEA	7	14	21
Air emissions	4	16	20

Table 2 provides the same breakdown, but by country type. Developed countries are focussing their planning efforts on accounts related to water, environmental subsidies and energy. Developing countries are focussing on accounts related to water, energy, MFA, and water emissions.

2.2 Technical assistance

The following provides an overview of the extent of technical assistance received by countries for the compilation of EEA, using the data covering 127 countries in the updated UNSD Excel spreadsheet². The analysis is based on the following questions from the Global Assessment questionnaire¹:

- Question 12: *Has your country received technical assistance from international/regional organisations, NGOs or other institutions for the development of environmental-economic accounts?*
- Question 13: *Please provide details all technical assistance received.*
- Question 14: *Has your country provided technical assistance to other countries or groups in the past three years?*

The Global Assessment¹ provides information on technical assistance up until 2017, while the UNSD Excel spreadsheet² provides additional information on assistance received in 2018.

Table 3: Technical assistance received from organisations

Providers and receivers of technical assistance								
Number of mentions by continent (prior to 2018 and 2018)								
Organisation providing assistance	Africa	Asia	Caribbean	Europe	North America	Oceania	South America	Total
UN regional commissions	4	21	1	3	2	7	4	42
UNSD	8	13	0	0	2	1	3	27
UNDP	4	13	0	0	2	1	4	24
Eurostat	0	3	0	16	0	0	0	19
World Bank	3	5	0	0	1	0	2	11
Other country's NSO	0	4	0	0	0	1	1	6
IEA	2	2	0	0	1	0	1	6
UN Environment	1	3	0	0	1	0	1	6
OECD	0	1	0	0	1	0	1	3
National development agencies	0	1	0	0	0	0	1	2
Regional development agencies	0	1	0	0	0	0	0	1

Table 3 shows the United Nations (UN) as the major player in providing technical assistance to countries on EEA. When asked from whom they had received technical assistance (assistance prior to 2018 and in 2018), countries mentioned the UN regional commissions the most (42 mentions in total), followed by UNSD and United Nation Development Programme

(UNDP). The UNDP in particular has provided assistance via its Biodiversity Finance Initiative (BIOFIN). Asia garners the majority of support from many of the organisations mentioned, with the notable exception of Eurostat that focusses primarily on European countries.

Figure 7: Countries that received the most assistance from organisations

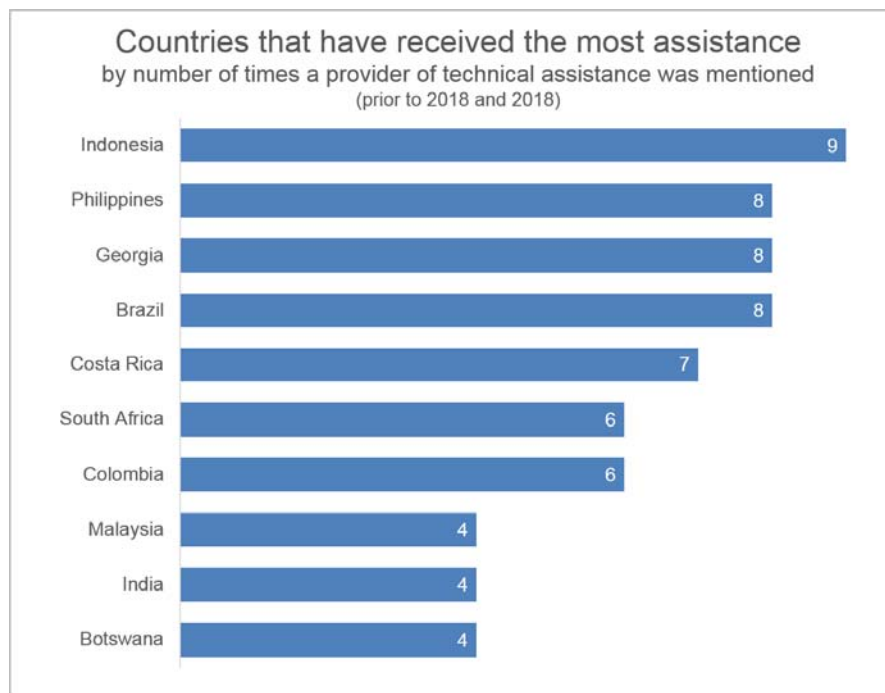
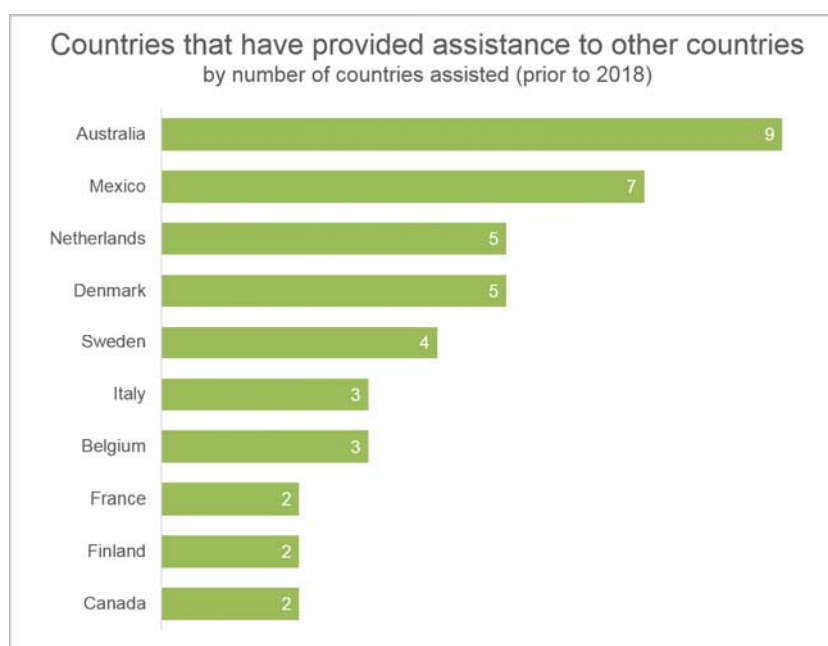


Figure 7 shows which countries received the most assistance from organisations. Indonesia receives the most technical assistance, if we count the number of times a country mentioned an organisation from whom it has received help.

Figure 8: Countries that have provided technical assistance

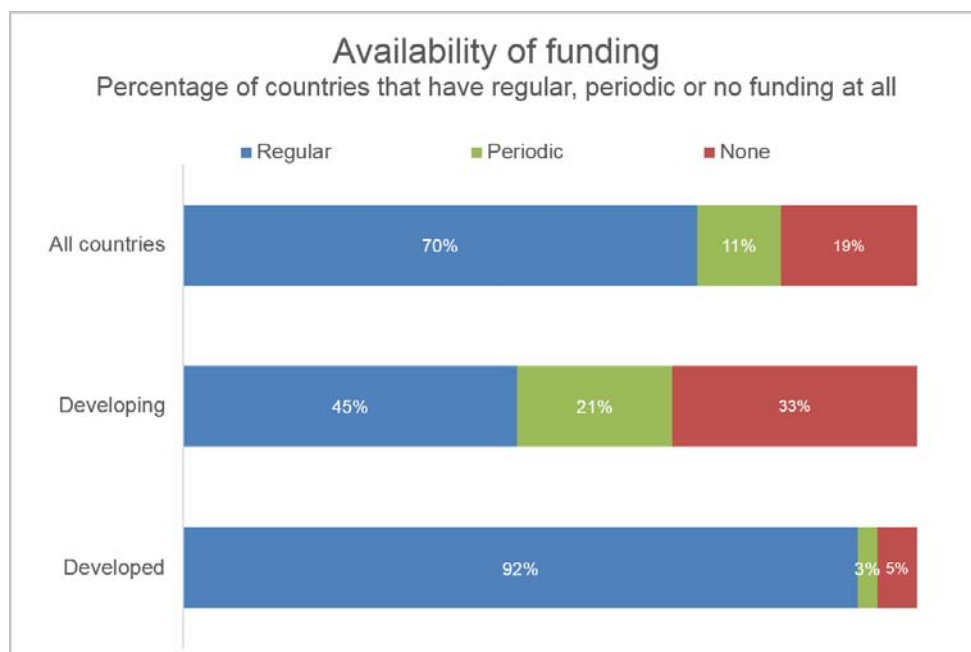
Question 14 asked countries to provide an indication of whether they had provided technical assistance to other countries. Figure 8 shows Australia, Mexico and the Netherlands as the top three helpers in providing assistance to other countries. Australia in particular mentioned that it has assisted nine other countries prior to 2018.

2.3 Funding

The following provides an overview of the extent of funding for EEA, using the data from the updated UNSD Excel spreadsheet². The analysis is based on the following questions from the Global Assessment questionnaire¹:

- Question 5: *Please describe the funding mechanisms in place for your programme on environmental-economic accounting.*

Figure 9: Availability of funding by country type



Of the 127 countries surveyed, 70 provided information on whether they have adequate funding (regular, periodic or none). Figure 9 shows that 70% (49 countries) have regular funding. One-third of developing countries indicated that they have no funding at all for EEA, while 45% indicated that they have regular funding.

Figure 10: Countries with the most funding risk?

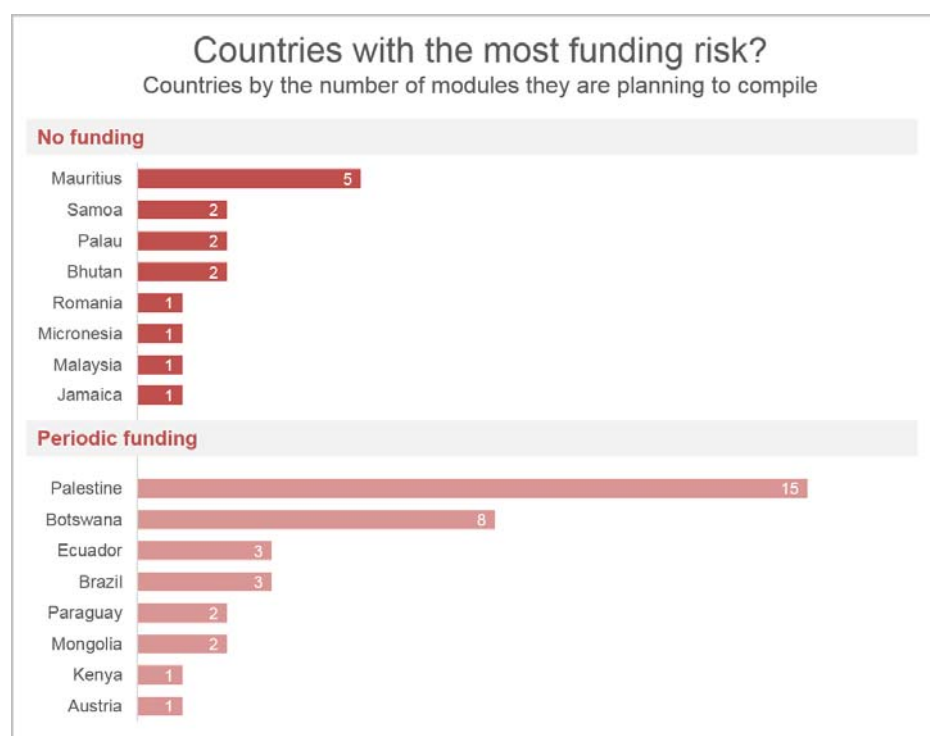


Figure 10 is a list of countries with periodic or no funding by the number of modules that they are planning to compile. Mauritius indicated that it has plans to compile five different modules (Environmental goods and services sector (EGSS) accounts, agriculture, forestry and fishery (AFF) accounts, ecosystem services, ecosystem assets, and integrated ecosystem accounts), but it also indicated that there is no funding currently available for EEA. Palestine has outlined its intention to compile 15 accounts, but it only has periodic funding at present. However, Palestine indicated that it plans to only compile these accounts after 2020.

3. Gap analysis for selected modules

Figure 5 provided an overview of the most popular modulesⁱⁱ that countries have compiled. The top four accounts from that table are EPEA, energy, MFA and air emissions. The following section provides a gap analysis of these accounts, including agriculture, forestry and fishery (AFF) accounts.

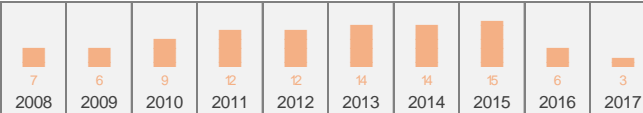
The gap analysis provides insight into two main aspects:

- *Compilation gaps across time:* Question 8 in the Global Assessment questionnaire¹ asked countries to indicate specific years (from 2008 to 2017) when they had compiled modules. The tables below summarise these data, providing an indication of which countries have been consistent in their compilation of specific modules. This analysis provides an indication of which countries are the most experienced. The data used in the tables are from the results of Global Assessment survey¹, covering the original 109 countries only.
- *Compilation gaps across space:* The countries mentioned in the tables are then mapped together with those countries who indicated, in the UNSD Excel spreadsheet², that they are planning to compile specific modules (based on Question 21 in the Global Assessment questionnaire¹). This provides an indication of the spatial gaps between countries that might possibly require assistance and those who have the most experience in compiling modules. This points to possible opportunities for capacity building: is a country that is planning to compile a specific module closely located to another country with experience?

ⁱⁱ The use of the terms 'modules' and 'accounts' are used synonymously.

3.1 Water

Table 4: Water accounts: regularity of account compilation

25 countries have compiled water accounts since 2008	Number of times compiled										
		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
MEXICO	9										
GEORGIA	9										
COLOMBIA	8										
THE NETHERLANDS	7										
AUSTRALIA	7										
CANADA	6										
DENMARK	6										
BOSNIA AND HERZEGOVINA	5										
IRELAND	5										
SAMOA	5										
BOTSWANA	4										
FIJI	4										
MAURITIUS	4										
SPAIN	3										
COSTA RICA	3										
PALAU	3										
NEW ZEALAND	2										
ISRAEL	1										
TURKEY	1										
ARMENIA	1										
BRAZIL	1										
NAMIBIA	1										
P.R.CHINA	1										
TAJIKISTAN	1										
UNITED KINGDOM	1										

The number of countries compiling water accounts peaked in 2015 (15 countries). The table shows that only three countries compiled water accounts in 2017. However, it is possible that some countries had not yet finalised the 2017 round of water accounts at the time the Global Assessment was conducted.

Mexico and Georgia were the most active countries in terms of compiling water accounts on an annual basis.

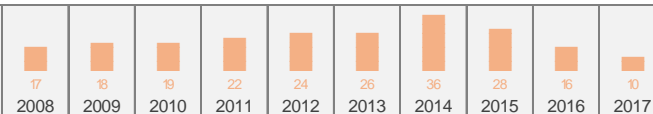
Figure 11: Water accounts: experienced countries



In the Oceania region, Australia has experience in compiling water accounts and can possibly be a source of assistance for Indonesia who are planning to compile water accounts in the future. In fact, in the UNSD Excel spreadsheet², Australia indicated that it has already started assisting Indonesia, contributing to water account workshops in that country.

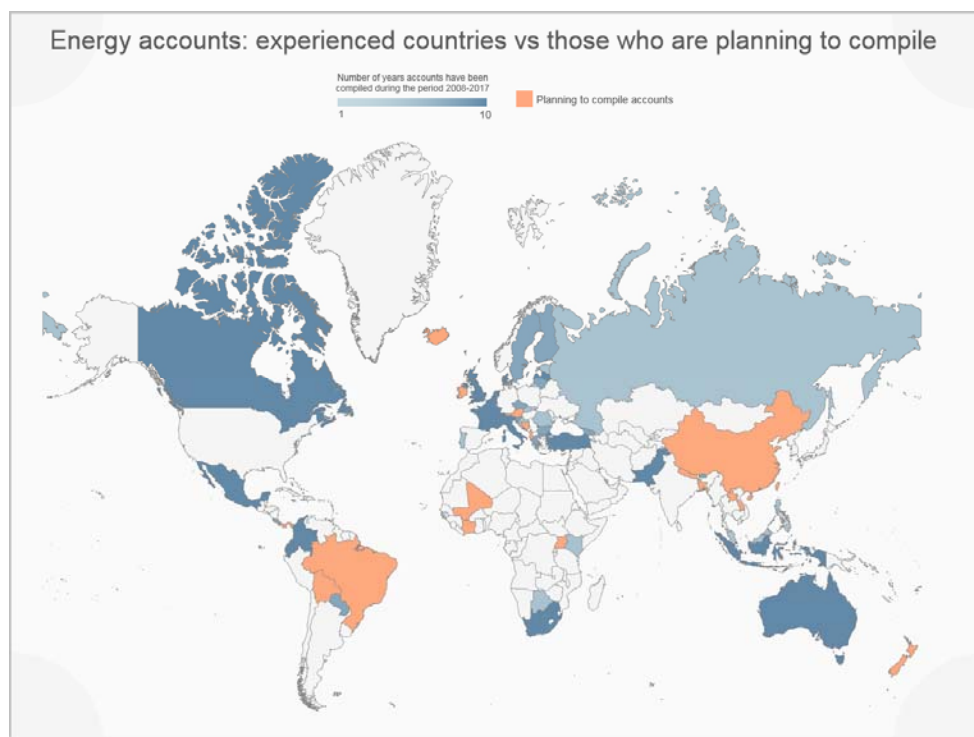
3.2 Energy

Table 5: Energy accounts: regularity of account compilation

43 countries have compiled energy accounts since 2008	Number of times compiled										
		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
CANADA	10										
ITALY	10										
MEXICO	10										
PAKISTAN	10										
AUSTRALIA	9										
COLOMBIA	9										
DENMARK	9										
FRANCE	9										
INDONESIA	9										
SOUTH AFRICA	9										
BELGIUM	8										
ECUADOR	8										
LATVIA	8										
SWITZERLAND	8										
THE NETHERLANDS	8										
TURKEY	8										
UNITED KINGDOM	8										
GEORGIA	7										
FIJI	6										
FINLAND	6										
SLOVENIA	6										
PARAGUAY	4										
COSTA RICA	3										
JAMAICA	3										
CZECH REPUBLIC	3										
MICRONESIA	3										
PALAU	3										
SWEDEN	3										
LITHUANIA	2										
BHUTAN	2										
BULGARIA	2										
GREECE	2										
PORTUGAL	1										
BOTSWANA	1										
CROATIA	1										
ESTONIA	1										
MAURITIUS	1										
ROMANIA	1										
SLOVAK REPUBLIC	1										
MALAYSIA	1										
PHILIPPINES	1										
KENYA	1										
RUSSIAN FEDERATION	1										

The number of countries compiling energy accounts peaked in 2014 (36 countries). Canada, Italy, Mexico and Pakistan were the most active countries in terms of compiling accounts on an annual basis.

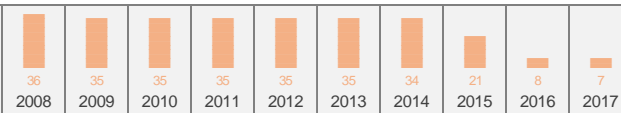
Figure 12: Energy accounts: experienced countries



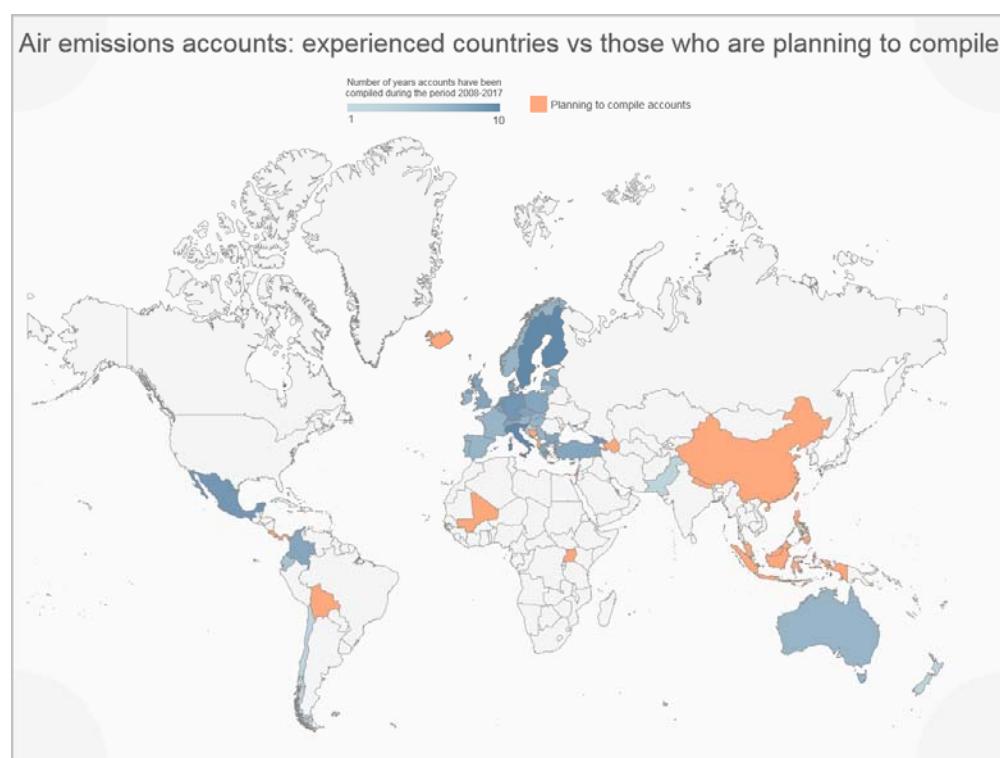
Kenya compiled energy accounts in 2017 and can be a source of assistance to its neighbour, Uganda, which is planning to produce energy accounts in the future. In South America, Colombia, Ecuador, and Paraguay are in close proximity to Brazil, Bolivia and Panama who are planning to compile energy accounts.

3.3 Air emissions

Table 6: Air emissions accounts: regularity of account compilation

39 countries have compiled air emissions accounts since 2008	Number of times compiled										
		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
FINLAND	10										
ITALY	10										
SLOVENIA	10										
SWEDEN	10										
GERMANY	9										
MEXICO	9										
THE NETHERLANDS	9										
GEORGIA	9										
BELGIUM	8										
BULGARIA	8										
COLOMBIA	8										
CZECH REPUBLIC	8										
DENMARK	8										
LATVIA	8										
LUXEMBOURG	8										
MAURITIUS	8										
POLAND	8										
SWITZERLAND	8										
TURKEY	8										
UNITED KINGDOM	8										
GREECE	8										
AUSTRALIA	7										
AUSTRIA	7										
CYPRUS	7										
ESTONIA	7										
FRANCE	7										
HUNGARY	7										
IRELAND	7										
LITHUANIA	7										
NORWAY	7										
PORTUGAL	7										
SLOVAK REPUBLIC	7										
SPAIN	7										
THE REPUBLIC OF SERBIA	7										
ECUADOR	6										
CROATIA	1										
PAKISTAN	1										
CHILE	1										
NEW ZEALAND	1										

The number of countries compiling air emissions accounts peaked in 2008 (36 countries). Many countries have shown a high level of consistency in terms of compiling accounts annually. The consistency is most evident in Europe where there is a legal mandate to compile air emissions accounts.


Figure 13: Air emissions accounts: experienced countries

During the period 2008 to 2017, the development of air emissions accounts was mostly focussed in Europe and South America. However, there are a number of countries outside these two regions that are planning to compile air emissions accounts in future (e.g. China in Asia and Mali in Africa).

At the time of the assessment, Indonesia indicated that it was planning to compile air emissions accounts. However, sometime after the assessment the country announced that it has completed experimental air emissions accounts.

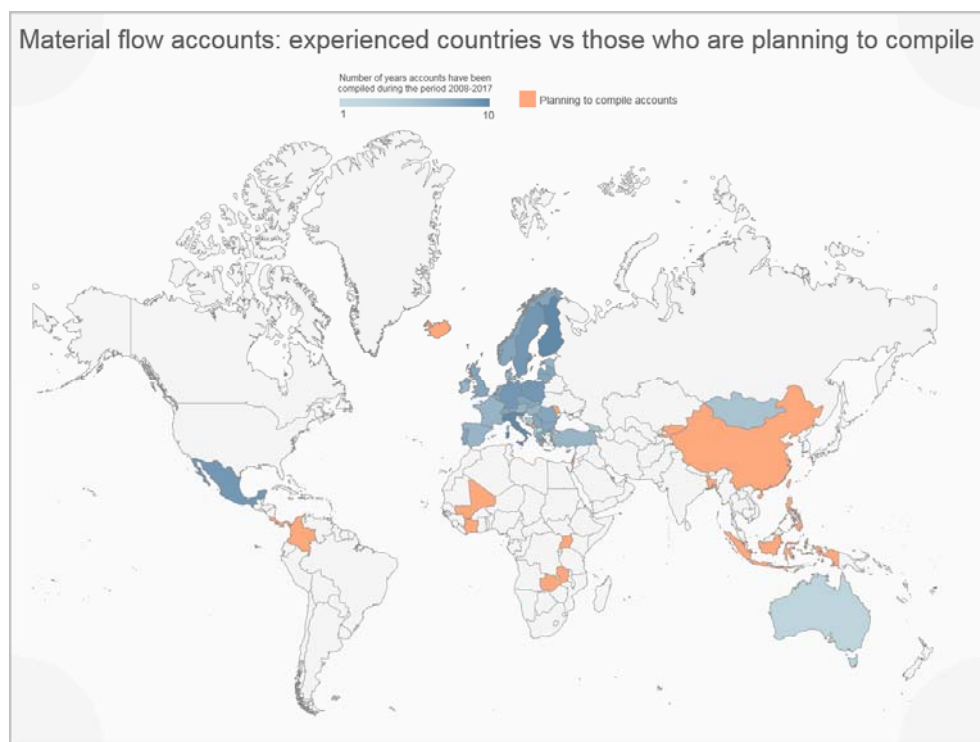
3.4 Material flows

Table 7: MFA: regularity of account compilation

39 countries have compiled MFA accounts since 2008	Number of times compiled										
		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
FINLAND	10										
ITALY	10										
SLOVENIA	10										
GERMANY	9										
MEXICO	9										
POLAND	9										
SWEDEN	9										
BELGIUM	8										
BULGARIA	8										
CZECH REPUBLIC	8										
LATVIA	8										
LITHUANIA	8										
LUXEMBOURG	8										
MAURITIUS	8										
NORWAY	8										
PORTUGAL	8										
ROMANIA	8										
SLOVAK REPUBLIC	8										
SWITZERLAND	8										
THE NETHERLANDS	8										
THE REPUBLIC OF SERBIA	8										
UNITED KINGDOM	8										
GREECE	8										
AUSTRIA	7										
CYPRUS	7										
DENMARK	7										
ESTONIA	7										
FRANCE	7										
HUNGARY	7										
IRELAND	7										
SPAIN	7										
TURKEY	7										
ALBANIA	6										
MALTA	6										
MONGOLIA	6										
GEORGIA	6										
BOSNIA AND HERZEGOVINA	4										
AUSTRALIA	1										
REPUBLIC OF MACEDONIA	1										

According to Table 7, Finland, Italy and Slovenia have been the most consistent in compiling MFA every year from 2008 to 2017. There was a significant drop after 2014 in the number of countries compiling MFA.

Figure 14: MFA: experienced countries



Experience for compiling MFA is mainly concentrated in Europe. Moldova, Montenegro and Iceland, who are planning to compile MFA, can take advantage of the wealth of experience in this region. Mexico also has a great deal of experience. It can possibly share this experience with Columbia, Panama and Costa Rica.

3.5 Environmental protection expenditure

Table 8: EPEA: regularity of account compilation

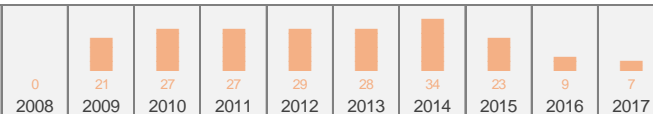
43 countries have compiled EPEA accounts since 2008	Number of times compiled										
		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
FINLAND	9										
GEORGIA	9										
ITALY	9										
PAKISTAN	9										
SLOVENIA	9										
MEXICO	8										
BELGIUM	7										
DENMARK	7										
ECUADOR	7										
SWITZERLAND	7										
THE NETHERLANDS	7										
THE REPUBLIC OF SERBIA	7										
GERMANY	7										
AUSTRIA	6										
FRANCE	6										
IRELAND	6										
LUXEMBOURG	6										
PARAGUAY	6										
TURKEY	6										
LITHUANIA	6										
SLOVAK REPUBLIC	5										
SPAIN	5										
CYPRUS	5										
UNITED KINGDOM	5										
LATVIA	5										
CZECH REPUBLIC	4										
COLOMBIA	4										
ISRAEL	3										
SWEDEN	3										
AUSTRALIA	2										
PORTUGAL	2										
PALESTINE	2										
BULGARIA	2										
MALTA	2										
POLAND	2										
GREECE	2										
INDONESIA	2										
REPUBLIC OF MACEDONIA	1										
CROATIA	1										
ESTONIA	1										
COSTA RICA	1										
CHILE	1										
PERU	1										

Table 8 shows that countries only started compiling EPEA since 2009, according to the data from the Global Assessment Survey¹. Finland, Georgia, Italy, Pakistan and Slovenia are the most experienced in compiling these accounts.

Figure 15: EPEA: experienced countries



European countries have a wealth of experience in compiling EPEA, according to Figure 15. They can possibly be in a position to assist other nearby countries – such as Belarus and Hungary – who are planning to compile EPEA.

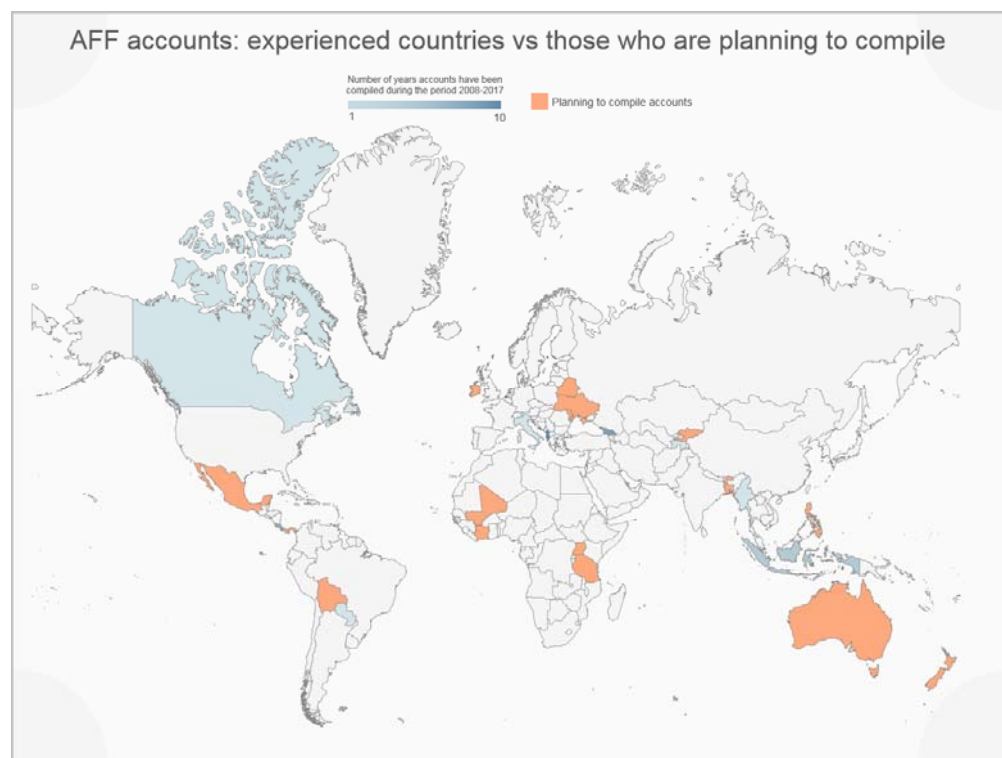
3.6 Agriculture, forestry and fisheries

Table 9: AFF accounts: regularity of account compilation

10 countries have compiled forestry accounts since 2008	Number of times compiled	Number of years accounts have been compiled during the period 2008-2017									
		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
ALBANIA	8										
GEORGIA	4										
COSTA RICA	3										
INDONESIA	2										
CANADA	1										
ITALY	1										
MYANMAR	1										
PARAGUAY	1										
TAJKISTAN	1										
THE NETHERLANDS	1										

Only 10 countries have compiled AFF accounts since 2008 (Table 9) with Albania compiling on the most consistent basis.

Figure 16: AFF accounts: experienced countries



Australia and New Zealand are planning to compile AFF accounts. They can possibly draw on the experience of Indonesia who have compiled these already.

4. Conclusion

This analysis provided here complements the *Global Assessment of Environmental-Economic Accounting and Supporting Statistics* report¹ that was released in March 2018. The additional analysis done here was to:

- Provide an update to the descriptive statistics in the *Global Assessment of Environmental-Economic Accounting and Supporting Statistics* report¹ by including data for 18 additional countries from the UNSD Excel Sheet². This includes updates to the extent of compilation of EEA, the availability of funding to compile accounts, and the extent of technical assistance received by countries for the compilation of accounts.
- Provide a gap analysis on the extent of account compilation across time (from 2008 to 2017), providing an indication of the most experienced countries that have compiled specific modules.
- Provide a gap analysis on the extent of account compilation across space, by providing an indication of the spatial gaps between countries that might possibly require assistance and those who have the most experience in compiling modules.

References

- 1 United Nations Committee of Experts on Environmental-Economic Accounting, 2018. *Global Assessment of Environmental-Economic Accounting and Supporting Statistics 2017*. New York.
- 2 United Nations Statistics Division, 2018. *UNSD Excel spreadsheet*. New York.