# Methodology for data analysis

## Overview of the data

**Data source**

The analysis is based entirely on data that are publicly available through OECD DAC in the Climate-related finance dataset of the *External Development Finance Statistics* database (http://www.oecd.org/dac/financing-sustainable-development/development-finance- topics/climate-change.htm) which provides transaction-level data.

**Accounting methods for estimating and reporting of climate-related development finance**

Two main methodologies are presently used for tracking and reporting climate-related finance by bilateral and multilateral funders: the OECD Rio Marker and the Climate Components methodologies.

All funders other than the MDBs report transaction-level data on commitments and disbursement to the OECD’s *Creditor Reporting System (CRS)* database, and denote which of this finance targeted climate change by using the Rio Markers for climate change (OECD DAC n.d.). For each transaction, funders indicate whether adaptation and/or mitigation was targeted as a “principal” objective, a “significant” objective or was “not targeted”. “Principal” denotes that the objective (mitigation or adaptation) is clearly stated and is fundamental in the motivation for the project and in design of the activities. “Significant” is used where mitigation or adaptation is an explicit objective but is not the primary driver for the project. Activities that the funder considers not to target adaptation or mitigation in any meaningful way are tagged as “Not targeted”. The mitigation and adaptation markers can be applied to the same project, meaning they are not mutually exclusive – which needs to be taken account of when the data is analysed.

For funders using the Rio Markers when reporting in the Creditor Reporting System, the data included in this analysis is for financial support that was reported as *principally* targeting climate change – in other words, this was the main aim of the activity and the activity would not have been implemented without this aim. Previous studies have concluded that finance reported as ‘significantly’ targeting climate change is likely to overstate the level of relevant financial support (Weikmans et al. 2017; Michaelowa and Michaelowa 2011; Junghans and Harmeling 2012; AdaptationWatch 2015; Weiler, Klöck, and Dornan 2018). Thus, activities tagged as ‘significantly’ targeting climate change are excluded.

The MDBs report data on their support for climate change based on their own *Joint MDB Methodology for Tracking Climate Mitigation Finance* and *Joint MDB Methodology for Tracking Climate Adaptation Finance* (‘Climate Components’ methodology)(MDB Group 2020). Whereas funders using the Rio Marker approach tag a project’s full financial value as targeting climate change, the MDBs specify the individual components within a project that are most relevant. This is a notable difference in accounting approach. As a result, it is not advisable to directly compare the total amounts reported by MDBs with the amounts reported by other funders, since the level of effort (finance) is not directly comparable. When analysing financial support from the perspective of a recipient country, combining the data obtained from both reporting approaches still provides the most comprehensive picture of how and where financial support for adaptation has been targeted. When analysing donors individually, this is not an issue.

**Climate database**

Detailed data on climate-related finance commitments reported under the Rio marker approach and the climate components methodology is compiled in the OECD DAC *Environmental Development Finance Statistics* database and made publicly available at <http://www.oecd.org/dac/financing-sustainable-development/development-finance-topics/climate-change.htm> under the link ‘Climate-related development finance at the activity level’.

The OECD provides data in two different perspectives, the recipient and the provider perspective. The present analysis is based on data presented in the **recipient perspective**, in order to capture and represent the funding decisions that are governed by the MDBs in-country (as requested in the TOR).

Data for this analysis were downloaded on 11 May, 2021 and accessed in Microsoft Excel format.

For each transaction (individual row), the database includes a wide range of information types, such as the funder (country if bilaterally channelled, or institution if multilaterally channelled), the recipient country or region, commitment amounts (in US$, both in current amounts and in constant amounts whereby inflation and exchange rate variations are taken into account by deflating to a consistent year, 2017), the main sector and sub-sector targeted, and the financial instrument (grant, concessional or non-concessional loan, equity, etc). The methodology used for tagging climate change as an objective (Rio Marker or Climate Components) is also noted.

**Data limitations**

The OECD databases on development finance provide the most comprehensive and comparable data on international development finance for climate change. There are however some important limitations to acknowledge in relation to these primary data sources.

First, the attribution of financial support to climate change objectives is subjective. This judgement is made by the funders and is not independently verified. A number of studies argue that the self-reporting of donors and the lack of independent quality control results in low data reliability and sometimes significant overestimations of finance flows identified with the use of Rio markers (Weikmans et al. 2017; Michaelowa and Michaelowa 2011; AdaptationWatch 2015; Junghans and Harmeling 2012). According to Weiler et al (2018) over-reporting seems less prevalent for commitments tagged as principally targeting adaptation when compared with those significantly targeting adaptation; for this reason, for transactions tagged with the Rio Markers the analysis here includes only those that principally target mitigation of climate change.

Second, the rigour and level of disaggregation used by funders when reporting data to the OECD varies, and can introduce errors.

Finally, not all development finance transactions are screened against the Rio Markers for climate change mitigation, which means there may be relevant finance flows that are not captured in the dataset used for this analysis. In general, most financial support is screened so the omission of relevant flows here seems likely to be relatively low.

**Which amounts to use?**

The dataset provides financial amounts in two ways: As *current* prices (i.e. reflecting the amount at the exchange rate prevailing in the year in which it was reported), and *constant* prices (i.e. the current values of each transaction or activity in the actual year it was reported are deflated by a factor that takes account of exchange rates and currency inflation between the year of the financial flow and the present). For constant amounts, the automatic conversion in the OECD's data is to the second-most recent year of the full data set. For this study the latest data available is from 2018, so the deflators convert all amounts in all years to 2017 US dollars (see the OECD Development Assistance Committee’s [Information Note on the DAC Deflators](https://www.oecd.org/dac/stats/informationnoteonthedacdeflators.htm) for further explanation).

**Our analysis uses the data for *constant* prices,** whichare shown in column S (adaptation), U (mitigation) and W (both adaptation and mitigation simultaneously). This follows OECD DAC recommendations for analyses of trends over multiple years (OECD n.d.).

## Preparing the data

Several steps were followed to prepare the data before calculating the *commitment* amounts presented in this study*.* Initially, four spreadsheets were downloaded directly from the OECD site: these are data sheets from the *recipient perspective*, and cover the years 2014-15, 2016, 2017 and 2018[[1]](#footnote-2). These were then merged, and the data for year 2014 was removed since it is not part of our study period.

Next, to prepare this single combined dataset for analysis, the following steps were performed.

1. The dataset was filtered to include only finance from the 20 listed donors (12 bilateral, 8 MDBs) (**Column C**);

|  |  |
| --- | --- |
| Bilateral donors | The 12 bilateral donors of interest are:  United Kingdom, Germany, France, The Netherlands, Denmark, Switzerland, Sweden, USA, Canada, Australia, Japan and South Korea |
| Multilateral donors | The 8 multilateral donors of interest are:  the European Union, the Green Climate Fund, IRENA, UNDP, UNEP, World Bank, Asian Development Bank and European Investment Bank. |

1. The dataset was filtered to include only finance targeting the 10 listed recipient countries (**Column J**);

|  |  |
| --- | --- |
| Recipient countries | The 10 recipient countries of interest are: China, India, Brazil, Indonesia, Mexico, South Africa, Pakistan, Thailand, Vietnam and the Philippines. |

1. The dataset was filtered to include only the 5 listed sectors (Transport and storage; Energy; Industry, construction and mining; General environment protection; and Other multisector) (**Column AC**).
2. The Rio Marker for all Green Climate Fund (GCF) transactions was manually changed from “Significant” to “Principal” in the column “*Climate objective (applies to Rio-marked data only) or Climate Component*” (**Column O**). This is necessary to correct a miscoding error by the GCF itself when reporting to the OECD[[2]](#footnote-3);
3. The data was filtered to include only transactions tagged as “Principal” and “Climate Components” within the column “*Climate objective (applies to Rio-marked data only) or Climate Component*” (**Column O**). In other words, the transactions tagged as “Significant” were excluded;
4. The columns “*Adaptation objective (applies to Rio Marked data only)*” and “*Mitigation objective (applies to Rio Marked data only)*” were cleared of entries to make them blank (**Columns P and Q**).
5. The “*Overlap*” column (**Column W**) denotes amounts of finance that target both adaptation and mitigation simultaneously. Whenever financial support has targeted both adaptation and mitigation simultaneously, the amounts shown in the Overlap column are the same as the amounts shown in each of the columns for adaptation and mitigation. Therefore, to avoid double counting, in these rows where there is an Overlap amount that is not zero, the amounts under adaptation (**Column S**) and mitigation (**Column U**) were deleted.

As a result:

* The amounts in the adaptation column (“Adaptation-related development finance - Commitment - 2018 USD thousand”)(**Column S**) represent the amounts reported exclusively for adaptation – *and will not be used in this study since adaptation is excluded from our analysis*;
* The amounts in the mitigation column (Mitigation-related development finance - Commitment - 2018 USD thousand”) (**Column U**) represent amounts exclusively for mitigation;
* The amounts in the Overall column (“Overlap - Commitment - 2018 USD thousand”) (**Column W**) are amounts targeted to both objectives simultaneously.

This is the interim data set we will use. Before we concentrate only on the purpose (sub-sector) codes identified in the CRUX methodology, we will:

1. Conduct a keyword search in the *title / description columns* (**Columns AH and AI**) for ‘capacity’, policy’, ‘technical assistance’, ‘TA’, ‘ energy access’, ‘energy efficiency’ and ‘climate finance’ All transactions that record a positive result (i.e. include one or more of these terms) will be copied into a separate spreadsheet, for subsequent inspection.
2. Reviewing these transactions, identify all those that are not coded using any of the purpose (sub-sector) codes identified by the CRUX methodology. Copy these into a new spreadsheet and keep these transactions separate (since these are additional relevant transactions to the data set we obtain in the next step and will be re-integrated back into the final dataset after the following steps).
3. Review these, to determine which if any sound relevant for the scope of this study. Some of the keyword entries may not actually sound relevant once they are reviewed, in which case we should remove them from the data. For transparency, we should keep the full list but e.g. highlight those that do not seem relevant in RED.

Then, we further refine the interim data set by filtering the purpose (sub-sector) codes column so that the data contains only those codes identified in the CRUX methodology:

1. Filter data set to remove all transactions other than those with purpose codes (**Column AB**):
2. Transport and storage sector
   1. 21010 Transport policy and administrative management (Transport and storage sector);
   2. 21050 Air transport (Transport and storage sector);
3. Energy sector
   1. 23110 Energy policy and administrative management (Energy sector);
   2. 23181 Energy education/training (Energy sector);
   3. 23182 Energy research (Energy sector);
   4. 23183 Energy conservation and demand-side efficiency (Energy sector);
4. Industry, mining and construction sector
   1. 32110 Industrial policy and administrative management (Industry, mining and construction sector);
   2. 32120 Industrial development (Industry, mining and construction sector);
   3. 32210 Mineral/mining policy (Industry, mining and construction sector);
   4. 32310 Construction policy (Industry, mining and construction sector);
   5. 32182 Technological research and development (Industry, mining and construction sector)
5. General environmental protection sector
   1. 41010 Environmental policy (General environmental protection sector);
   2. 41081Environmental education/training (General environmental protection sector);
6. Other multisector/cross-cutting sector
   1. 43030 Urban development management (Other multisector/cross-cutting sector).
7. Manually copy the relevant rows from the spreadsheet saved in Step 10 (i..e those that are not highlighted RED) and paste them into this main spreadsheet below the existing data. These are transactions that are not in any of the purpose codes filtered for in step 10 but were found to be relevant using the keyword search. Those we decided are not relevant, highlighted RED in step 10, should not be copied over to the main dataset.

**This is the final dataset we will use for our analysis.**

## Analysis

Using the final dataset, we do the following:

* Create pivot tables (and associated datasets) for each of the **20 individual donors**. For each donor, individual spreadsheets should show all transactions, by year, recipient (up to 10 in total), and sector/purpose code. *These will be used to provide donor-perspective snapshots of technical assistance funding to the countries and sectors of interest*.
* Create pivot tables (and associated datasets) for each of the **7 purpose codes**. For each purpose code, individual spreadsheets should show all transactions, by year, donor (up to 20 in total) and recipient (up to 10 in total). *These will be used to provide sector-perspective snapshots of technical assistance funding.*

The information to be included in each report is:

XXX

### Assessing disbursements

The individual reports for donors and sectors are to include several types of information, including a comparison between commitments and disbursements.

* We cannot do this for the MDBs because they do not report disbursed amounts for their climate finance.
* We can do this for all other (bilateral) funders, but need to use a different dataset than the one above. Suggest we use Aid Atlas, if we only want quick total numbers to compare with total commitment amounts. TO BE DISCUSSED.

1. Unfortunately, 2019 data is not yet published in this database at the time of our analysis. [↑](#footnote-ref-2)
2. The GCF exists to channel financial support to developing countries specifically for climate change action. However, in reporting to the OECD, all of the GCF’s commitments have been tagged as “significantly” rather than “principally” targeting climate change. This is in fact a coding error by the GCF itself (confirmed by personal communication with the GCF Secretariat in October 2020). Thus, to ensure the GCF data are included in the analysis, all GCF commitments are re-coded manually as ‘principally’ targeting climate change mitigation and/or adaptation [↑](#footnote-ref-3)