We created this dataset and scripts with the research aim to analyze the influence of Integrated Assessment Modelling (IAM) research on Intergovernmental Panel of Climate Change (IPCC) reports. We analyzed the following research questions (Table 1):

1. Which IAM researchers have been cited in IPCC WG3 reports?
2. To what extent are IPCC WG3 reports based on IAM research?
   1. What share of IPCC WG3 references are authored by any IAM researcher individually?
   2. How much of the evidence base of IPCC WG3 reports is IAM research?
      1. What share of IPCC WG3 references are authored by all IAM researchers together?
      2. How sensitive are the results to different sample sizes of IAM researchers?
   3. How many IAM researchers are responsible for the majority of IAM research in IPCC reports?
   4. What share of IPCC WG3 references in each chapter are authored by IAM researchers?
3. To what extent are IPCC WG3 SPM statements based on IAM research?
4. How diverse is the sample of IAM research covered in IPCC WG3 reports?

We provide more detail for each research question in separate sections.

RQs that can be answered using the same dataset:

* Who are the most cited researchers by IPCC WG3 reports? (Section 1)
* Which chapters act as knowledge bridges in IPCC reports? Which chapters are most commonly co-cited in the SPM? Which chapters are not well covered in the SPM? (Section 3)
* What share of evidence in IPCC WG3 reports is attributable to the top 30 most cited researchers? (Section 1 & 2.3)
* What is the distribution of affiliated institutes for IAM researchers who have been cited in IPCC WG3 reports? (Section 4)

RQs that can be answered by modifying the script/files:

* Who are the most cited researchers in other reports (e.g. UNEP reports)? (Section 1)
* To what extent has research from another research field (e.g. nuclear energy research) been cited in IPCC WG3 reports? (Section 2.1, 2.2 & 2.4)
* To what extent has IAM research been covered in other reports (e.g. UNEP reports)? (Section 2.1, 2.2 & 2.4)
* How diverse is the IAM research covered in IPCC WG3 reports regarding ethnicity and academic experience level? (Section 4)

Table 1. List of research questions and associated script and data

|  |  |  |
| --- | --- | --- |
| Research question | Relevant script | Relevant data |
| 1. Which IAM researchers have been cited in IPCC WG3 reports? | IAM researchers operationalization/Bottom-up approach/Text minning for most cited researchers.R | IAM researchers operationalization/IAM researchers from top-down approach.xlsx, IAM researchers operationalization/Bottom-up approach/FAR.xlsx, IAM researchers operationalization/Bottom-up approach/SAR.xlsx, IAM researchers operationalization/Bottom-up approach/TAR.xlsx, IAM researchers operationalization/Bottom-up approach/AR4.xlsx, IAM researchers operationalization/Bottom-up approach/AR5.xlsx, IAM researchers operationalization/Bottom-up approach/AR6.xlsx, IAM researchers from bottom-up approach.xlsx, IAM researchers operationalization/Final list of IAM researchers.xlsx |
| 2.1. What share of IPCC WG3 references are authored by any IAM researcher individually? | AR analysis/Individual results/Automated text-mining for calculating results table.R | AR analysis/Individual results/results\_table\_template.xlsx, AR analysis/Individual results/inputs.xlsx, AR analysis/Individual results/outputs.xlsx, AR analysis/Individual results/IA-researchers.xlsx, AR analysis/Individual results/FAR.xlsx, AR analysis/Individual results/SAR.xlsx, AR analysis/Individual results/TAR.xlsx, AR analysis/Individual results/AR4.xlsx, AR analysis/Individual results/AR5.xlsx, AR analysis/Individual results/AR6.xlsx, AR analysis/Individual results/Results per researcher, AR analysis/Individual results/Results corrected.xlsx |
| 2.2.1. What share of IPCC WG3 references are authored by all IAM researchers together? | AR analysis/Text-mining script for calculating cumulative contribution of IAM research to ARs.R | AR analysis/Inputs, AR analysis/Results table template.xlsx, AR analysis/outputs.xlsx, AR analysis/inputs.xlsx, AR analysis/IAM researchers with unique surnames.xlsx, AR analysis/Corrections.xlsx, AR analysis/Final results with corrections.xlsx, AR analysis/Results |
| 2.2.2. How sensitive are the results to different sample sizes of IAM researchers? | AR analysis/Sensitivity analysis/Script for sensitivity testing.R | AR analysis/Sensitivity analysis/Corrections, AR analysis/Sensitivity analysis/Data, AR analysis/Sensitivity analysis/Inputs, AR analysis/Sensitivity analysis/Inputs.xlsx, AR analysis/Sensitivity analysis/Outputs, AR analysis/Sensitivity analysis/Result tables, AR analysis/Sensitivity analysis/Results, AR analysis/Sensitivity analysis/Results table template.xlsx |
| 2.3. How many IAM researchers are responsible for the majority of IAM research in IPCC reports? | IAM researchers analysis/Contribution analysis/Script for contribution analysis.R | IAM researchers analysis/Contribution analysis/AR2, IAM researchers analysis/Contribution analysis/AR3, IAM researchers analysis/Contribution analysis/AR4, IAM researchers analysis/Contribution analysis/AR5, IAM researchers analysis/Contribution analysis/AR6, IAM researchers analysis/Contribution analysis/Corrections.xlsx |
| 2.4. What share of IPCC WG3 references in each chapter are authored by IAM researchers? | AR analysis/Chapter level analysis/Script for chapter level analysis.R | AR analysis/Chapter level analysis/FAR, AR analysis/Chapter level analysis/SAR, AR analysis/Chapter level analysis/TAR, AR analysis/Chapter level analysis/AR4, AR analysis/Chapter level analysis/AR5, AR analysis/Chapter level analysis/AR6, AR analysis/Chapter level analysis/Corrections.xlsx, AR analysis/Chapter level analysis/Final chapter-level results corrected.xlsx, AR analysis/Chapter level analysis/IAM researchers with unique surnames.xlsx, AR analysis/Chapter level analysis/inputs.xlsx, AR analysis/Chapter level analysis/outputs.xlsx, AR analysis/Chapter level analysis/results, AR analysis/Chapter level analysis/Results table template.xlsx |
| 3. To what extent are IPCC WG3 SPM statements based on IAM research? | NA | SPM analysis/AR4.xlsx, SPM analysis/AR5.xlsx, SPM analysis/AR6.xlsx, SPM analysis/TAR.xlsx |
| 4. How diverse is the sample of IAM research covered in IPCC WG3 reports? | IAM researchers analysis/Affiliation analysis/Script for indexing.R | IAM researchers analysis/Affiliation analysis/IAM researchers details.xlsx, IAM researchers analysis/Affiliation analysis/IAM researchers input.xlsx, IAM researchers analysis/Affiliation analysis/results template.xlsx |

# Which IAM researchers have contributed to IPCC WG3 reports?

|  |  |
| --- | --- |
| File name | Description |
| IAM researchers operationalization/IAM researchers from top-down approach.xlsx | Manually created list of IAM researchers by following the method set in Gusheva et al. (2023) and cleaning the list based on the results from RQ 2.1 |
| IAM researchers operationalization/Bottom-up approach/Text minning for most cited researchers.R | R script that mines through the references lists of all ARs and identifies the most common words |
| IAM researchers operationalization/Bottom-up approach/FAR.xlsx | Input file to R script |
| IAM researchers operationalization/Bottom-up approach/SAR.xlsx | Input file to R script |
| IAM researchers operationalization/Bottom-up approach/TAR.xlsx | Input file to R script |
| IAM researchers operationalization/Bottom-up approach/AR4.xlsx | Input file to R script |
| IAM researchers operationalization/Bottom-up approach/AR5.xlsx | Input file to R script |
| IAM researchers operationalization/Bottom-up approach/AR6.xlsx | Input file to R script |
| IAM researchers operationalization/Bottom-up approach/IAM researchers from bottom-up approach.xlsx | Manually created list of researchers based on running the R script for each input file |
| IAM researchers operationalization/Final list of IAM researchers.xlsx | Manually integration of “IAM researchers from top-down approach” and “IAM researchers from bottom-up approach” |

# 2.1. What share of IPCC WG3 references are authored by any IAM researcher individually?

|  |  |
| --- | --- |
| File name | Description |
| AR analysis/Individual results/Automated text-mining for calculating results table.R | R script that text mines through the reference list for each R searching for instances of the surname of all IAM researchers and saves the results as a folder for each researcher |
| AR analysis/Individual results/results\_table\_template.xlsx | Template for the cumulative results of the R script |
| AR analysis/Individual results/inputs.xlsx | Input file paths |
| AR analysis/Individual results/outputs.xlsx | Output file paths |
| AR analysis/Individual results/IA-researchers.xlsx | List of IAM researcher surnames |
| AR analysis/Individual results/FAR.xlsx | Reference list of AR1 |
| AR analysis/Individual results/SAR.xlsx | Reference list of AR2 |
| AR analysis/Individual results/TAR.xlsx | Reference list of AR3 |
| AR analysis/Individual results/AR4.xlsx | Reference list of AR4 |
| AR analysis/Individual results/AR5.xlsx | Reference list of AR5 |
| AR analysis/Individual results/AR6.xlsx | Reference list of AR6 |
| AR analysis/Individual results/Results per researcher | Folders for each IAM researcher |
| AR analysis/Individual results/Results corrected.xlsx | Manually corrected results for researchers without unique surnames |

# 2.2.1. What share of IPCC WG3 references are authored by all IAM researchers together?

|  |  |
| --- | --- |
| File name | Description |
| AR analysis/Text-mining script for calculating cumulative contribution of IAM research to ARs.R | R script that mines through the references lists of all ARs and counts how many references include the surname of any IAM researcher |
| AR analysis/Inputs | Folder of lists of machine-read references for each AR |
| AR analysis/Results table template.xlsx | Results table template which serves an input to the R script |
| AR analysis/outputs.xlsx | Output files’ location paths |
| AR analysis/inputs.xlsx | Input files’ location paths |
| AR analysis/IAM researchers with unique surnames.xlsx | List of IAM researchers with unique surnames |
| AR analysis/Corrections.xlsx | Manually counted results for IAM researchers without unique surnames |
| AR analysis/Final results with corrections.xlsx | Manual integration of Corrections.xlsx and R script output file |
| AR analysis/Results | Folders where the IAM research references are saved for each AR |

# 2.2.2 How sensitive are the results to different sample sizes of IAM researchers?

|  |  |
| --- | --- |
| File name | Description |
| AR analysis/Sensitivity analysis/Script for sensitivity testing.R | R script based on “AR analysis/Text-mining script for calculating cumulative contribution of IAM research to ARs.R”, which is modified to analyze the sensitivity of different samples of IA researchers. The script is run for each sample size ranging from 4 to 184. |
| AR analysis/Sensitivity analysis/Corrections | Folder containing the corrections for each run |
| AR analysis/Sensitivity analysis/Data | Folder containing the list of IAM researchers (ordered by their contribution) for each sample size |
| AR analysis/Sensitivity analysis/Inputs | Folder of lists of machine-read references for each AR |
| AR analysis/Sensitivity analysis/Inputs.xlsx | List of input file paths |
| AR analysis/Sensitivity analysis/Outputs | Folder where the list of IAM references for each sample size is saved |
| AR analysis/Sensitivity analysis/Result tables | Folder where the cumulative results for each run are saved |
| AR analysis/Sensitivity analysis/Results | Folder where the intermediary run results are saved |
| AR analysis/Sensitivity analysis/Results table template.xlsx | Results table template which serves an input to the R script |

# 2.3. How many IAM researchers are responsible for the majority of IAM research?

|  |  |
| --- | --- |
| File name | Description |
| IAM researchers analysis/Contribution analysis/Script for contribution analysis.R | R script that mines through the references through each report and calculates the instances of IAM researchers surnames only for researchers who have contributed to the report (based on the results from RQ2.1). The resulting numbers are manually compared with the results from RQ (2.2.1)”. |
| IAM researchers analysis/Contribution analysis/AR2 | Folder containing all the input and output files for running the script for AR2 and the corrected results based on “IAM researchers analysis/Contribution analysis/Corrections.xlsx” |
| IAM researchers analysis/Contribution analysis/AR3 | Folder containing all the input and output files for running the script for AR3 and the corrected results based on “IAM researchers analysis/Contribution analysis/Corrections.xlsx” |
| IAM researchers analysis/Contribution analysis/AR4 | Folder containing all the input and output files for running the script for AR4 and the corrected results based on “IAM researchers analysis/Contribution analysis/Corrections.xlsx” |
| IAM researchers analysis/Contribution analysis/AR5 | Folder containing all the input and output files for running the script for AR5 and the corrected results based on “IAM researchers analysis/Contribution analysis/Corrections.xlsx” |
| IAM researchers analysis/Contribution analysis/AR6 | Folder containing all the input and output files for running the script for AR6 and the corrected results based on “IAM researchers analysis/Contribution analysis/Corrections.xlsx” |
| IAM researchers analysis/Contribution analysis/Corrections.xlsx | Manually counted results for IAM researchers without unique surnames |

# 2.4. What share of IPCC WG3 references in each chapter are authored by IAM researchers?

|  |  |
| --- | --- |
| File name | Description |
| AR analysis/Chapter level analysis/Script for chapter level analysis.R | R script that mines through the references lists of all ARs and counts how many references include the surname of any IAM researcher for each chapter |
| AR analysis/Chapter level analysis/Results table template.xlsx | Results table template which serves an input to the R script |
| AR analysis/Chapter level analysis/outputs.xlsx | Output files’ location paths |
| AR analysis/Chapter level analysis/inputs.xlsx | Input files’ location paths |
| AR analysis/Chapter level analysis/IAM researchers with unique surnames.xlsx | List of IAM researchers with unique surnames |
| AR analysis/Chapter level analysis/Corrections.xlsx | Manually counted results for IAM researchers without unique surnames |
| AR analysis/Chapter level analysis/Final chapter-level results corrected.xlsx | Manual integration of Corrections.xlsx and R script output file |
| AR analysis/Chapter level analysis/results | Folders where the IAM research references are saved for each AR |
| AR analysis/Chapter level analysis/FAR | Folder of lists of references for all chapters in AR1 |
| AR analysis/Chapter level analysis/SAR | Folder of lists of references for all chapters in AR2 |
| AR analysis/Chapter level analysis/TAR | Folder of lists of references for all chapters in AR3 |
| AR analysis/Chapter level analysis/AR4 | Folder of lists of references for all chapters in AR4 |
| AR analysis/Chapter level analysis/AR5 | Folder of lists of references for all chapters in AR5 |
| AR analysis/Chapter level analysis/AR6 | Folder of lists of references for all chapters in AR6 |

# 3. To what extent are IPCC WG3 SPM statements based on IAM research?

|  |  |
| --- | --- |
| File name | Description |
| SPM analysis/TAR.xlsx | List of all statements and cited subsections in AR3 in the sheet “All” and corresponding frequency calculation in the sheet “All analysis” |
| SPM analysis/AR4.xlsx | List of all statements and cited subsections in AR4 in the sheet “All” and corresponding frequency calculation in the sheet “All analysis” |
| SPM analysis/AR5.xlsx | List of all statements and cited subsections in AR5 in the sheet “All” and corresponding frequency calculation in the sheet “All analysis” |
| SPM analysis/AR6.xlsx | List of all statements and cited subsections in AR6 in the sheet “All” and corresponding frequency calculation in the sheet “All analysis” |

# How diverse is the sample of IAM research covered in IPCC WG3 reports?

|  |  |
| --- | --- |
| File name | Description |
| IAM researchers analysis/Affiliation analysis/Script for indexing.R | R script that automates indexing of an input dataset according to a set framework |
| IAM researchers analysis/Affiliation analysis/IAM researchers details.xlsx | Manually created list of all IAM researchers and their gender, model, institution and country affiliation |
| IAM researchers analysis/Affiliation analysis/IAM researchers input.xlsx | Same as above, but the researchers names have been processed to be easily read by the R script |
| IAM researchers analysis/Affiliation analysis/results template.xlsx | A results template based on RQ2.3 results |