#semanticClimate

Creating Open Knowledge Graph for Climate

SHWEATA HEGDE AND #SC TEAM

2025-02-15

@shweataHegde

Shweata N. Hegde

https://semanticclimate.github.io/p/en/

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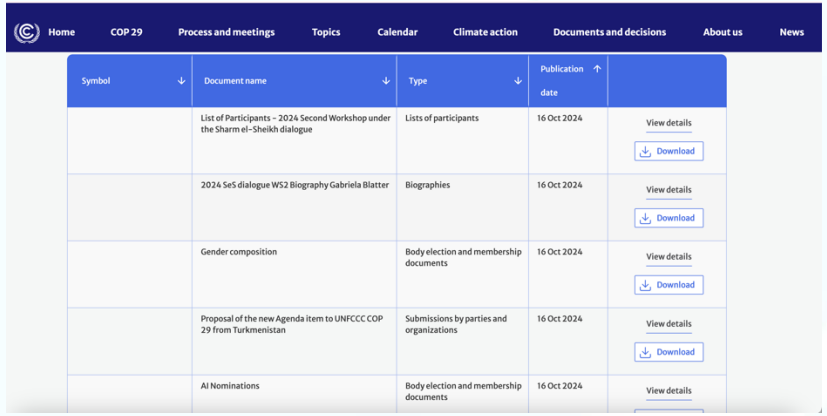
So much climate knowledge!

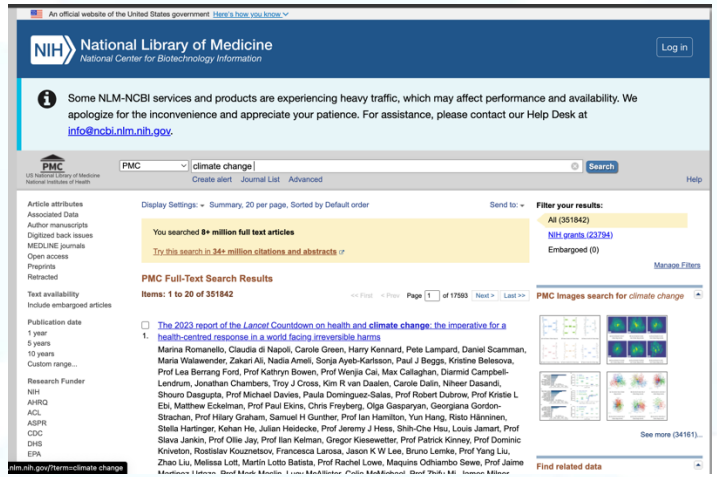
IPCC Reports

(10000+ pages)



UNFCCC Documents

(1000 Pages)



Scientific literature

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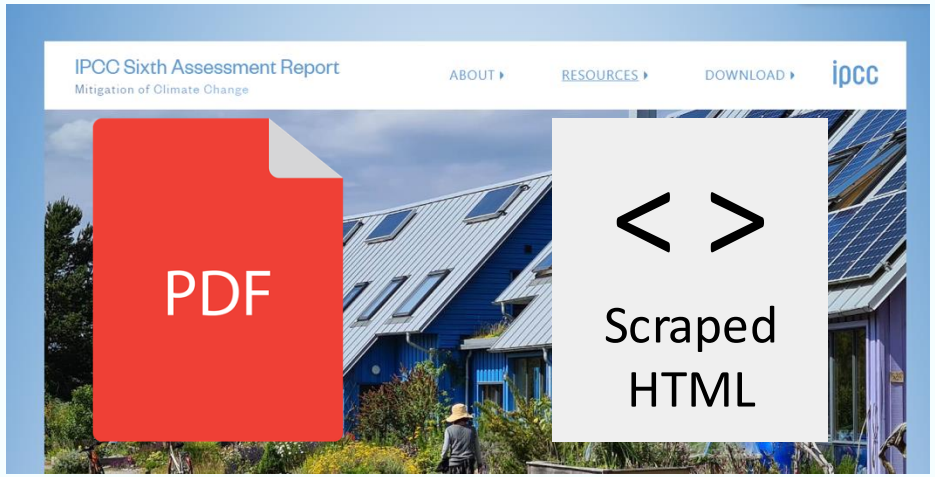
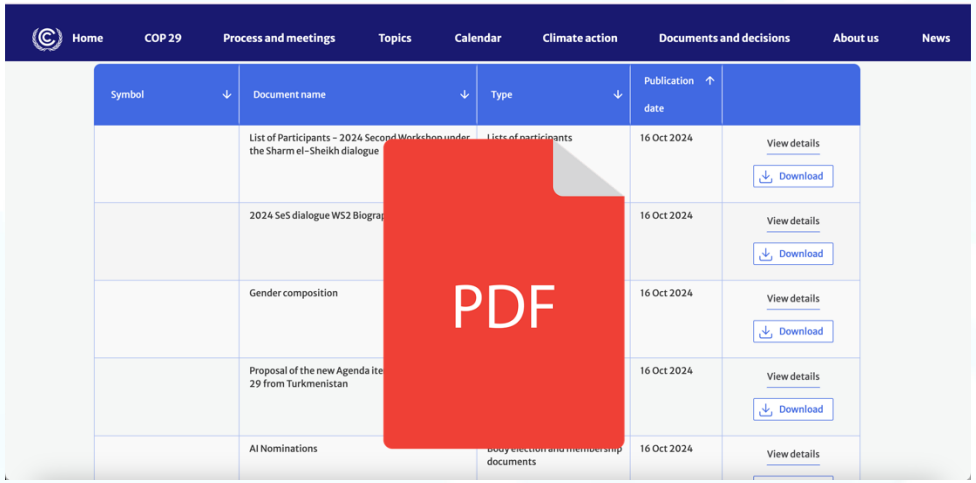
PDFs are not sustainable (1-star); knowledge locked up; cause massive wastage



IPCC Reports

(10000+ pages)



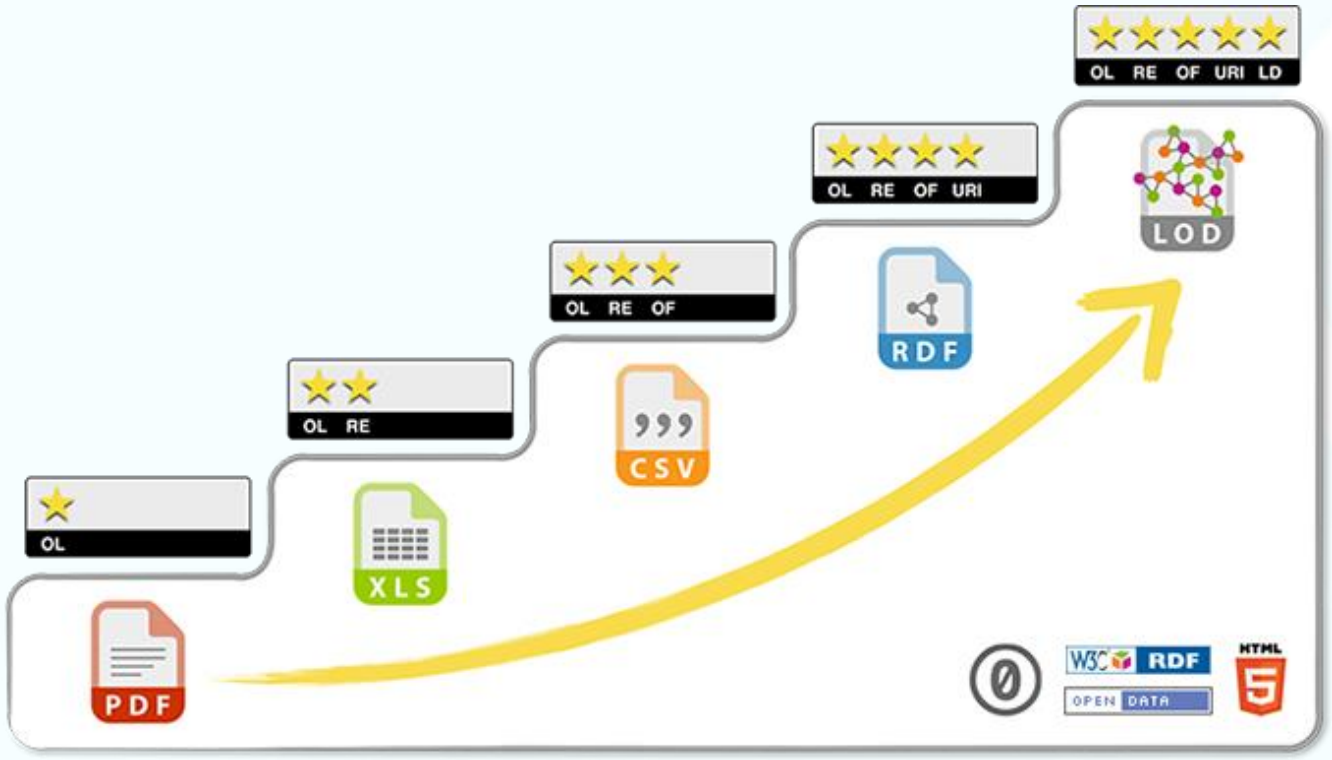
UNFCCC Documents

(1000 pages)

AMI, need your help. What do we do with these PDF?

You've come to the right person, Chuff. I can turn the PDFs into a semantic 5-star documents so the knowledge is usable

What Do We Mean by 5-star Document?



Tim Berners-Lee's Classification

5-star: Semantic HTML + Unique Identifiers + Annotation

Our Mission

To create verifiable computable climate knowledge (5-star-documents)

we take the following as verifiable sources of truth

- IPCC framework (PDF or web-HTML)
- UNFCCC reports (COPs)
- 1000/week scholarly climate publications

Framework of IPCC Reports

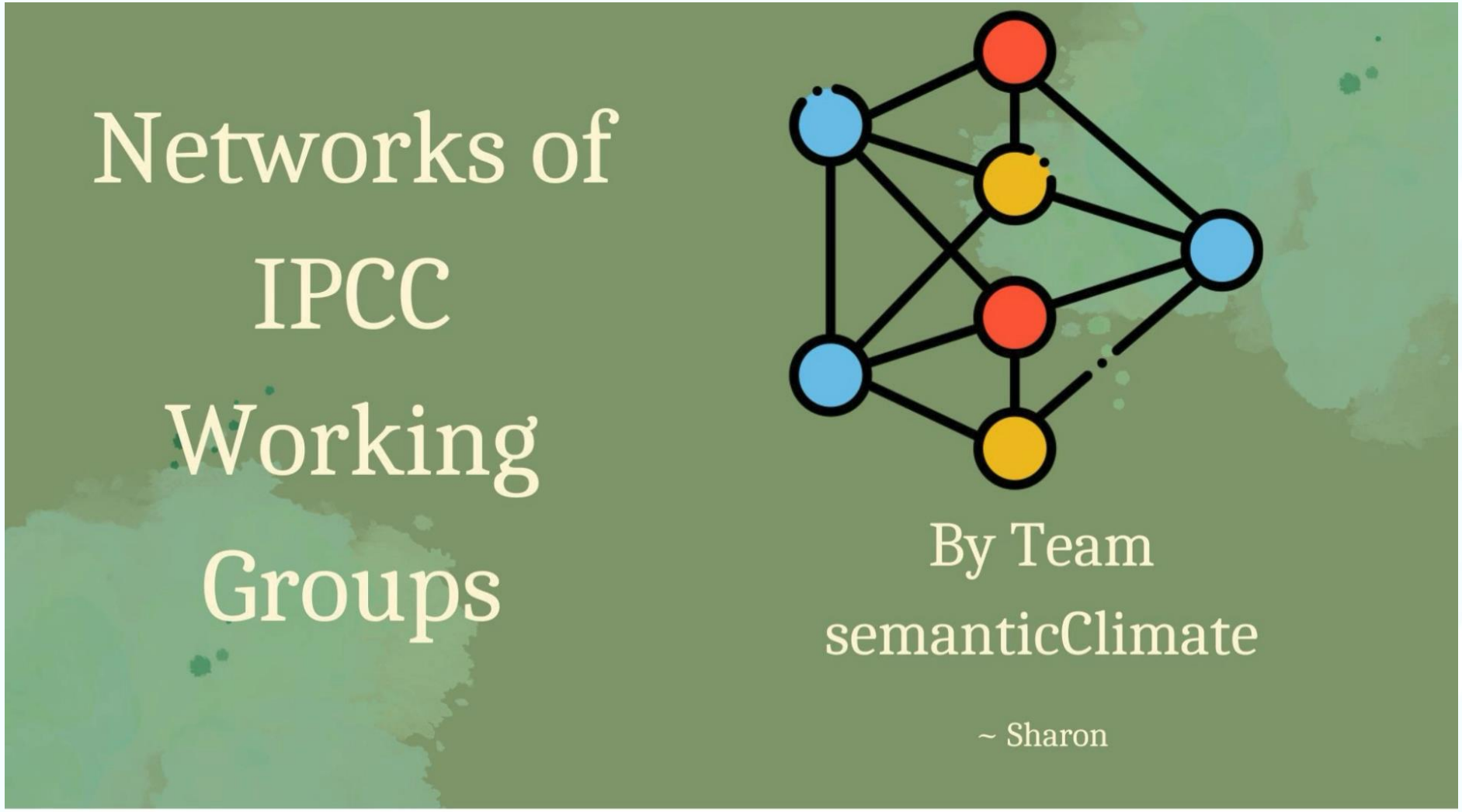
Reports

- 3 Working Groups (WG1, WG2, WG3)
- Several Special Reports
- Synthesis Report

- 20,000 pages of PDF => HTML
- 1000 figure captions
- 15000+ bibliography
- 700-term Glossary
- 1500 acronyms

We make all these semantic (machine parsable into structured, annotated data).

Climate Knowledge Graph



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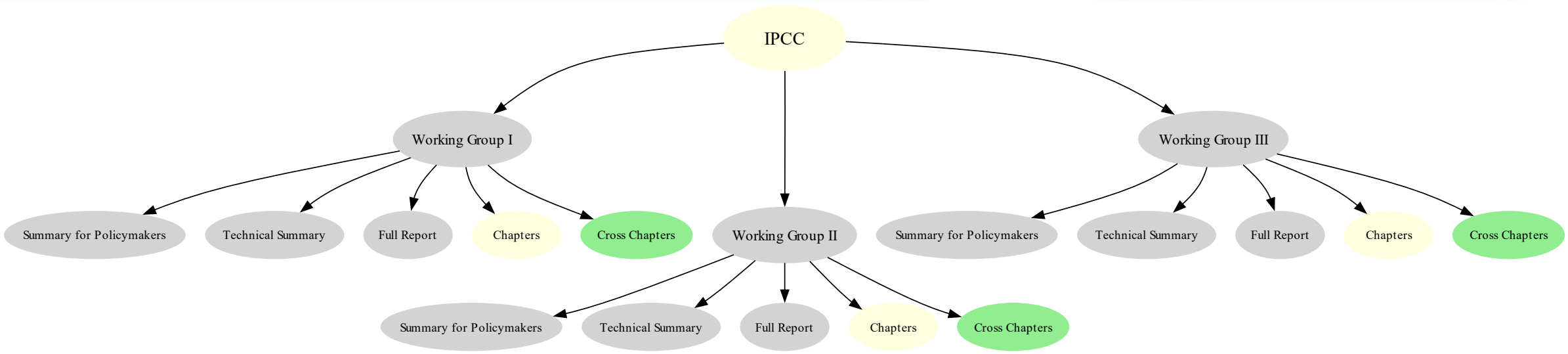
#semanticClimate's IPCC Knowledge Graph (HTML and SVG)



Anudev, Shabnam and Sharon (Present Interns)

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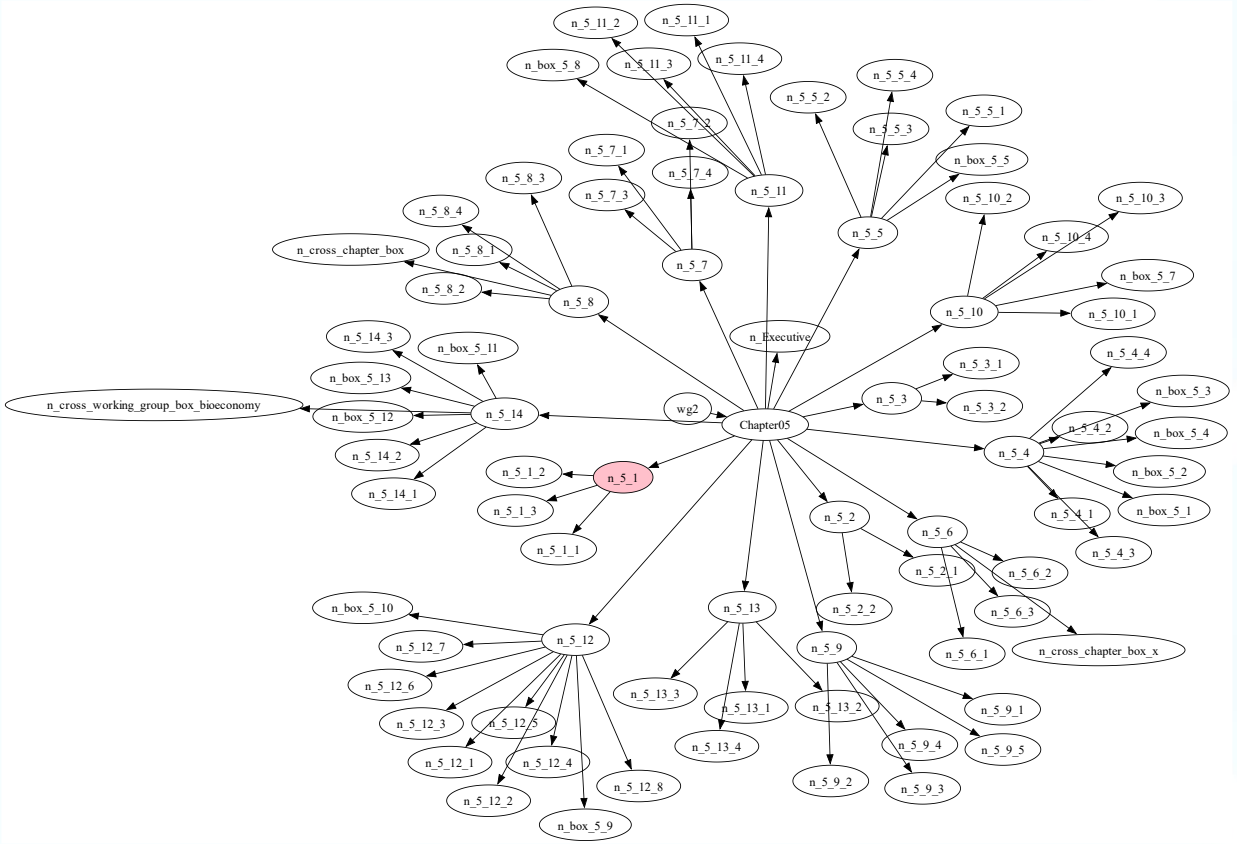
Knowledge Graph of WG2/Chapter 05



https://raw.githubusercontent.com/petermr/amilib/refs/heads/pmr_aug/temp/ipcc/wg2/Chapter05/toc.fdp.svg

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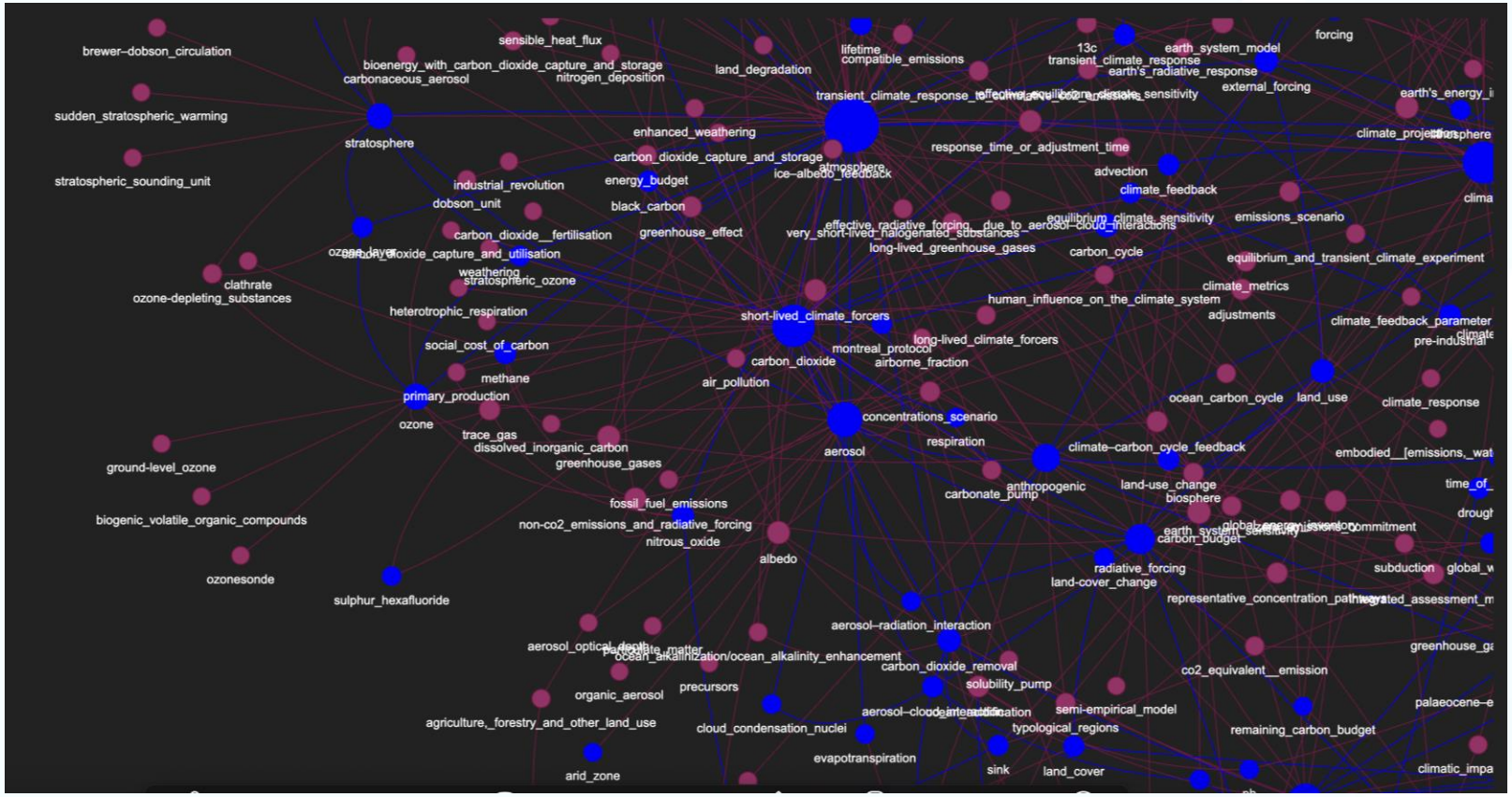
Glossary Knowledge Graph



[IPCC Glossary]

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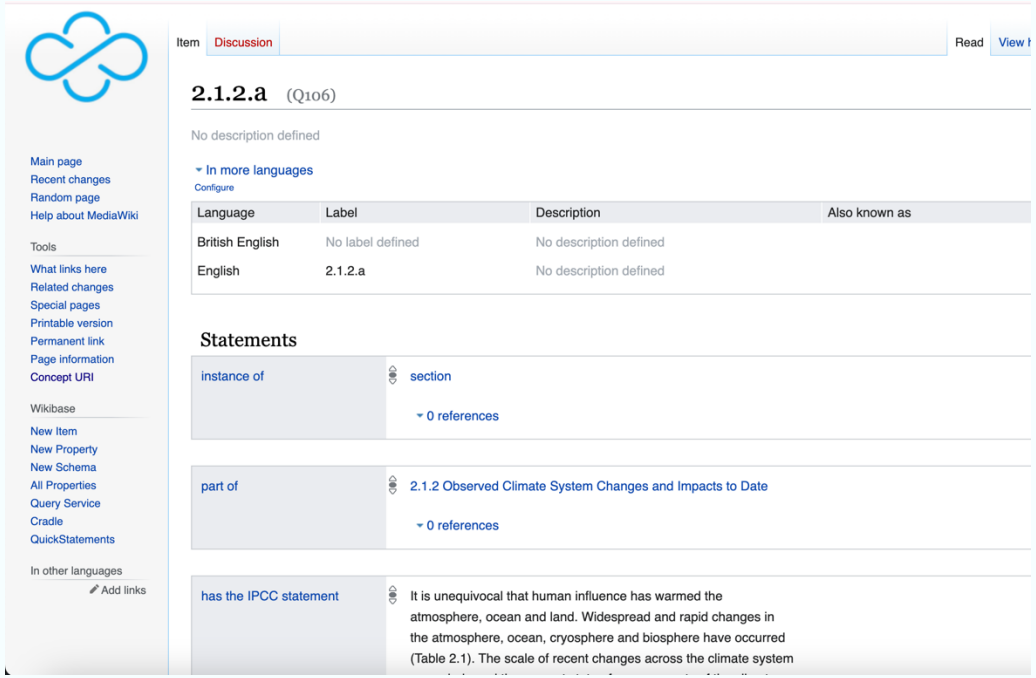
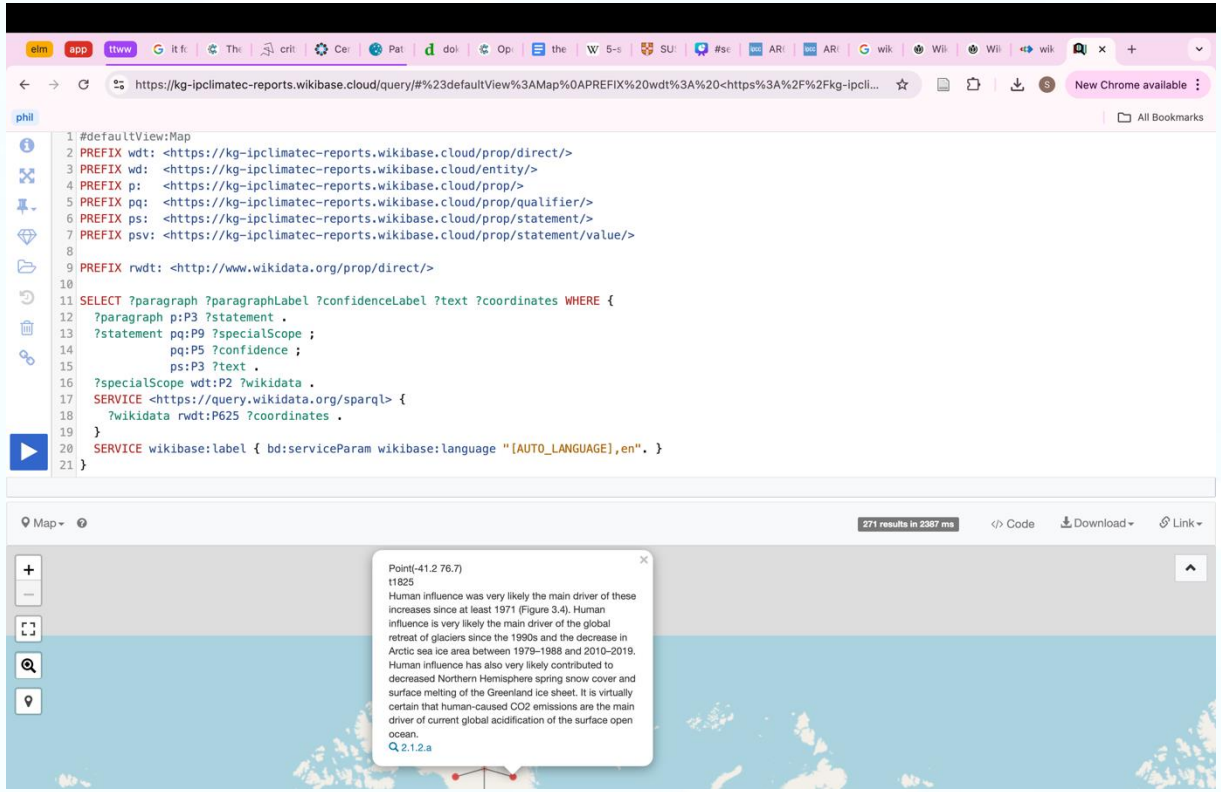
Wikibase for Climate Knowledge





https://kg-ipclimatec-reports.wikibase.cloud/wiki/Item:Q106

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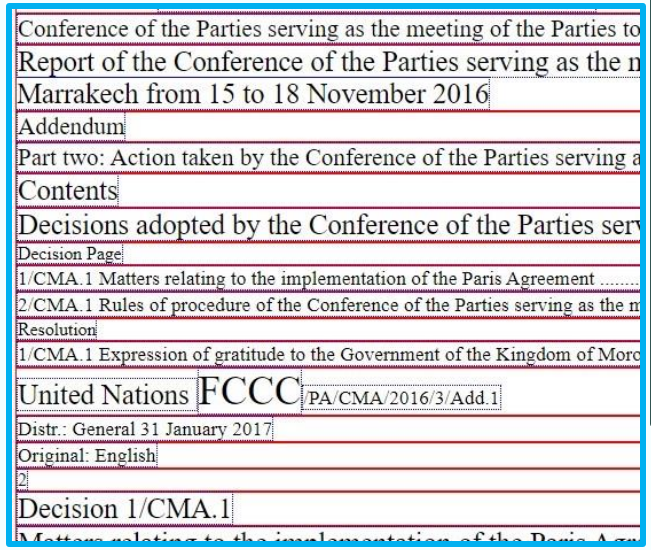
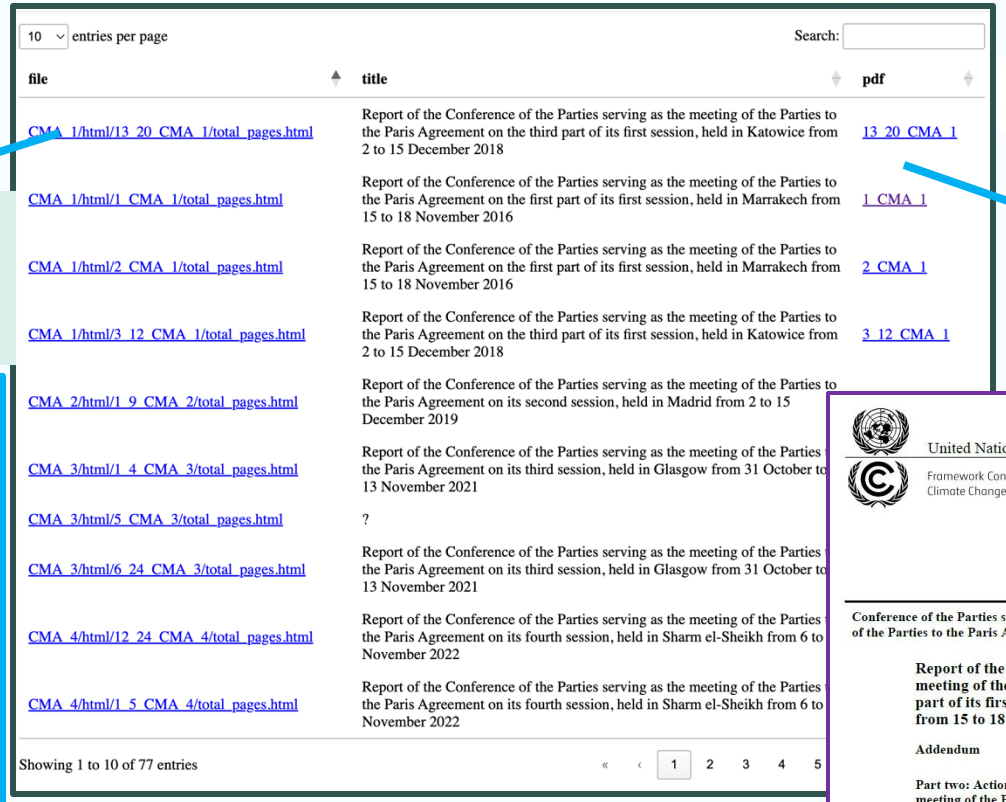
UNFCCC Documents (COP)

Datatables (An index for UNFCCC reports)

Reports in semantic HTML

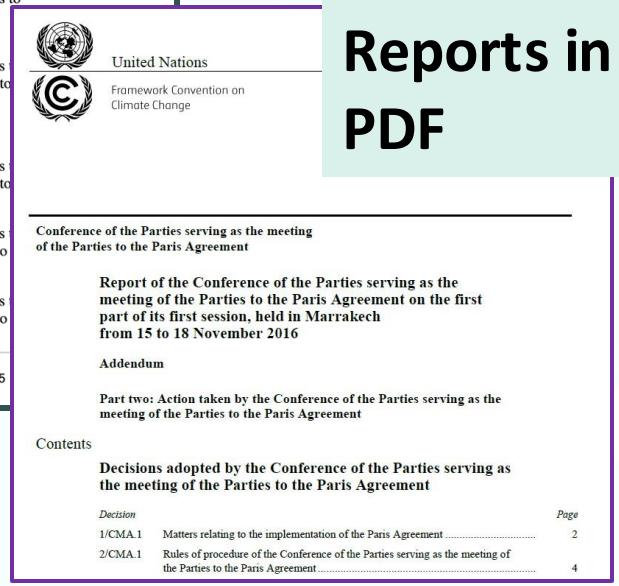

Conference of the Parties serving as the meeting of the Parties to
Report of the Conference of the Parties serving as the n
Marrakech from 15 to 18 November 2016
Addendum
Part two: Action taken by the Conference of the Parties serving a
Contents
Decisions adopted by the Conference of the Parties serv
Decision Page
1/CMA.1 Matters relating to the implementation of the Paris Agreement .....
2/CMA.1 Rules of procedure of the Conference of the Parties serving as the n
Resolution
1/CMA.1 Expression of gratitude to the Government of the Kingdom of Moro
United Nations FCCC PA/CMA/2016/3/Add.1
Distr.: General 31 January 2017
Original: English
2
Decision 1/CMA.1


10 entries per page Search:

file	title	pdf
CMA_1/html/13_20_CMA_1/total_pages.html	Report of the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement on the third part of its first session, held in Katowice from 2 to 15 December 2018	13_20_CMA_1
CMA_1/html/1_CMA_1/total_pages.html	Report of the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement on the first part of its first session, held in Marrakech from 15 to 18 November 2016	1_CMA_1
CMA_1/html/2_CMA_1/total_pages.html	Report of the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement on the first part of its first session, held in Marrakech from 15 to 18 November 2016	2_CMA_1
CMA_1/html/3_12_CMA_1/total_pages.html	Report of the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement on the third part of its first session, held in Katowice from 2 to 15 December 2018	3_12_CMA_1
CMA_2/html/1_9_CMA_2/total_pages.html	Report of the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement on its second session, held in Madrid from 2 to 15 December 2019	
CMA_3/html/1_4_CMA_3/total_pages.html	Report of the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement on its third session, held in Glasgow from 31 October to 13 November 2021	
CMA_3/html/5_CMA_3/total_pages.html	?	
CMA_3/html/6_24_CMA_3/total_pages.html	Report of the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement on its third session, held in Glasgow from 31 October to 13 November 2021	
CMA_4/html/12_24_CMA_4/total_pages.html	Report of the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement on its fourth session, held in Sharm el-Sheikh from 6 to November 2022	
CMA_4/html/1_5_CMA_4/total_pages.html	Report of the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement on its fourth session, held in Sharm el-Sheikh from 6 to November 2022	

Showing 1 to 10 of 77 entries « ‹ 1 2 3 4 5

COP Reports in PDF


United Nations
Framework Convention on Climate Change

Conference of the Parties serving as the meeting of the Parties to the Paris Agreement

Report of the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement on the first part of its first session, held in Marrakech from 15 to 18 November 2016

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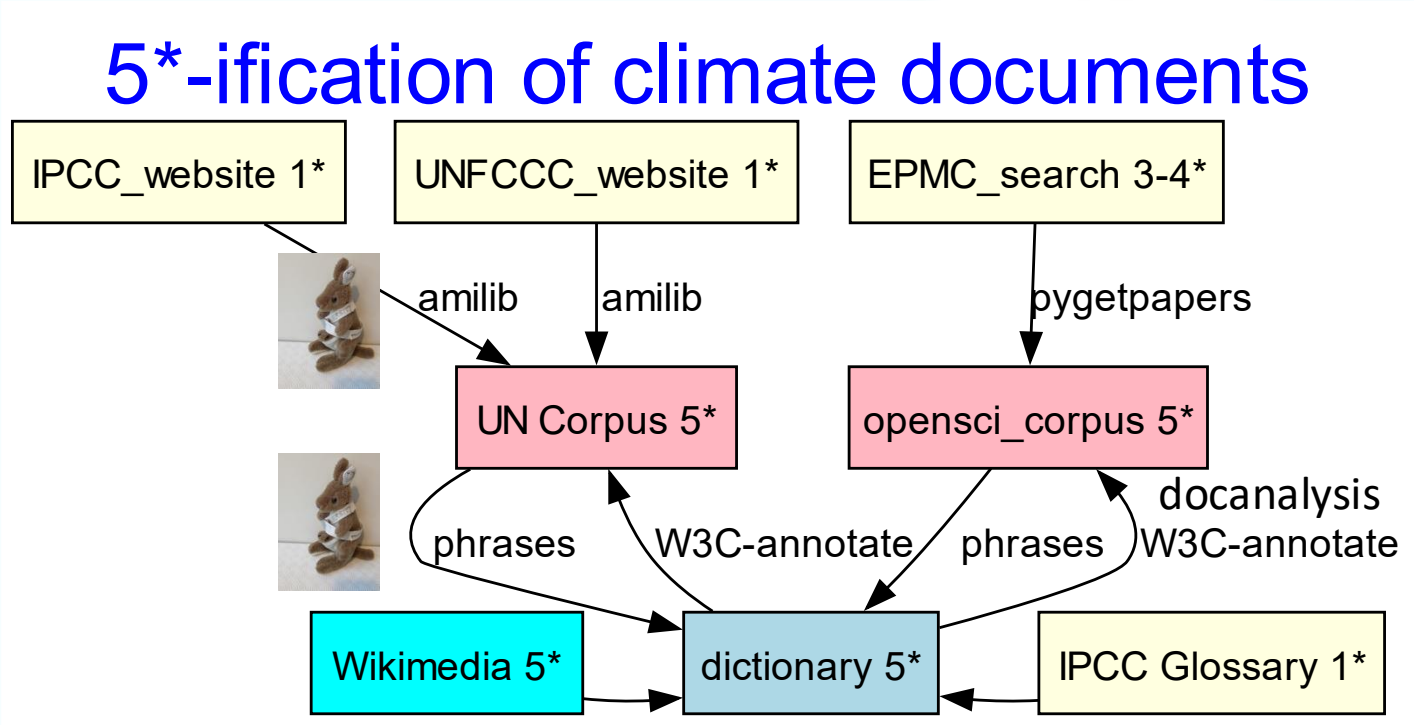
Contents

Decisions adopted by the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement

Decision		*Page*
1/CMA.1	Matters relating to the implementation of the Paris Agreement	2
2/CMA.1	Rules of procedure of the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement	4

#semanticClimate builds Free and Open-source Software to create Linked Open Documents (5-star)



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Dictionary

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<entry name="NDC" term="Nationally Determined Contributions" wikidataID="Q20051297"/>
<entry name="GHG" term="Greenhouse Gas" wikidataID="Q167336"/>
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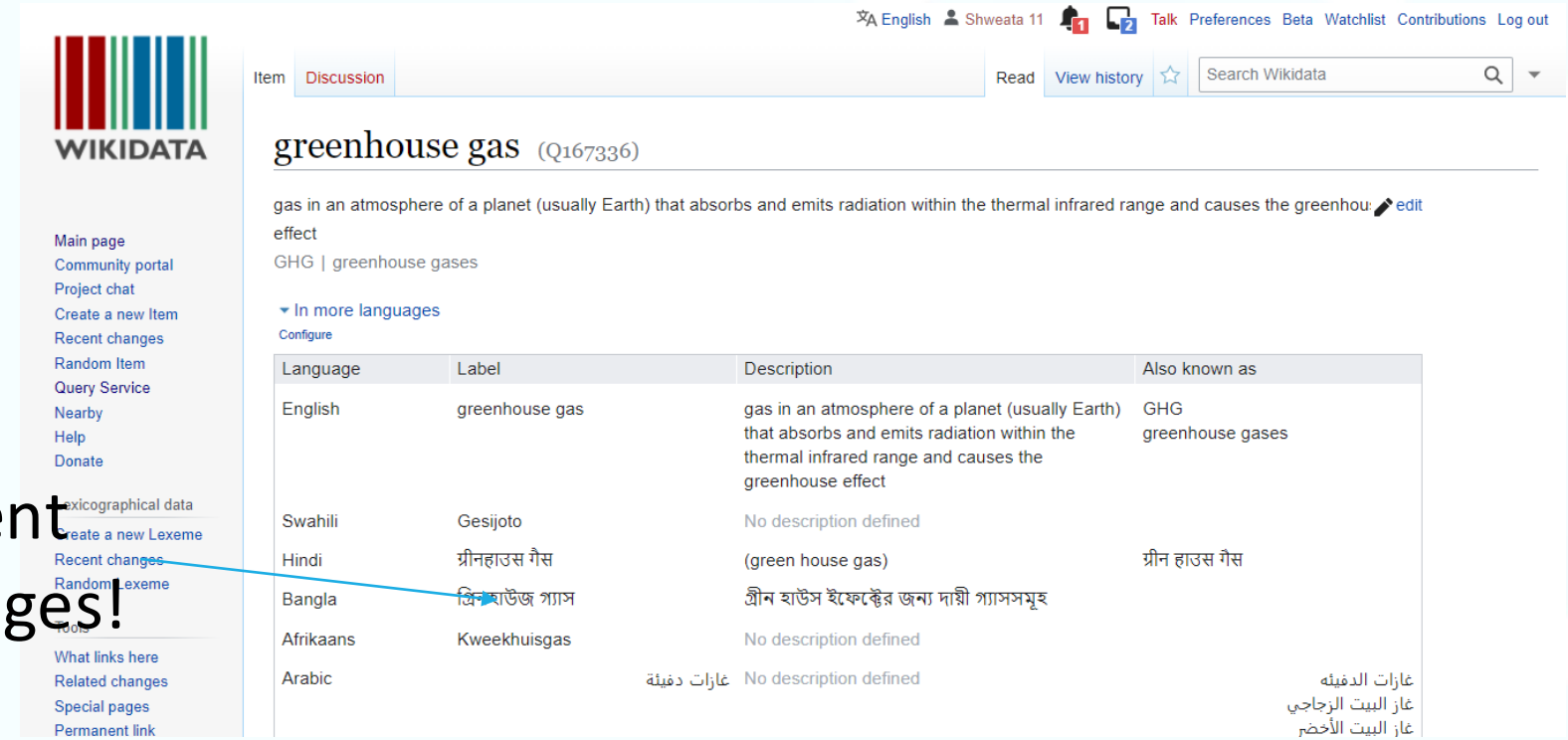

Different languages!

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How We Work

Moobashara Jawed

AR6/WG1/Chapter 2: Changing State of the Climate System

Anudev S

AR6/WG2/Chapter 6: Cities, settlements and key infrastructure

Mebin Joseph

AR6/WG2/Chapter 5: Food, Fibre and Other Ecosystem Product

Shabnam Barbhuiya

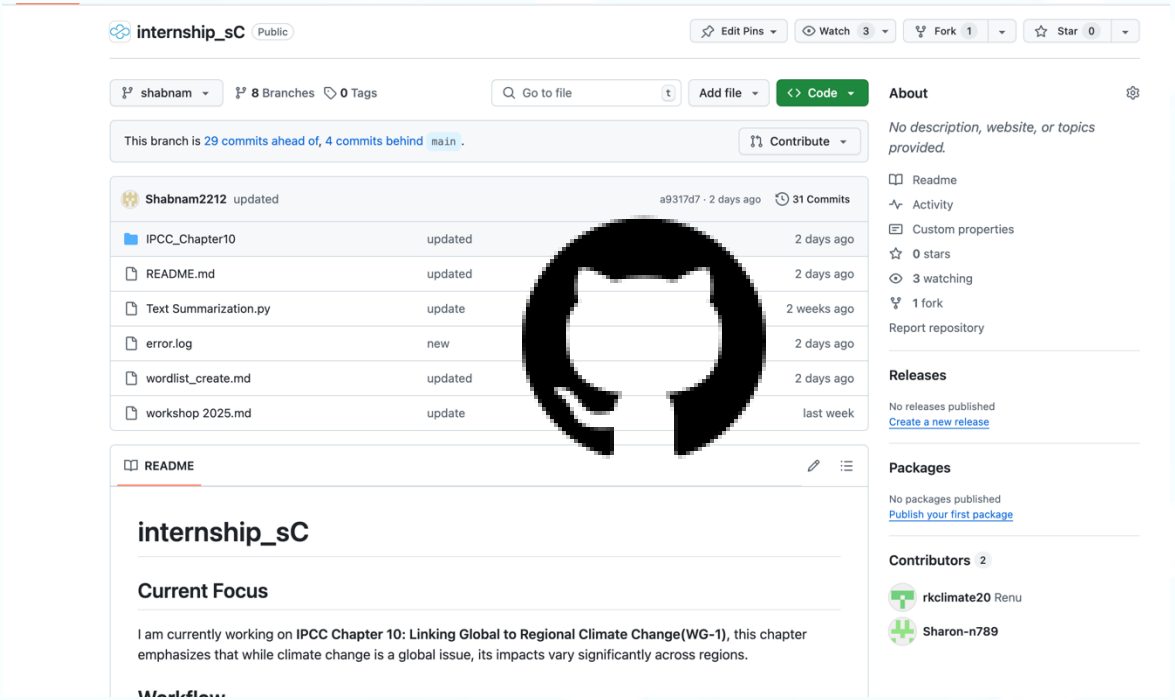
AR6/WG1/Chapter 10: Linking Global to Regional Climate Change

Sharon Nayak

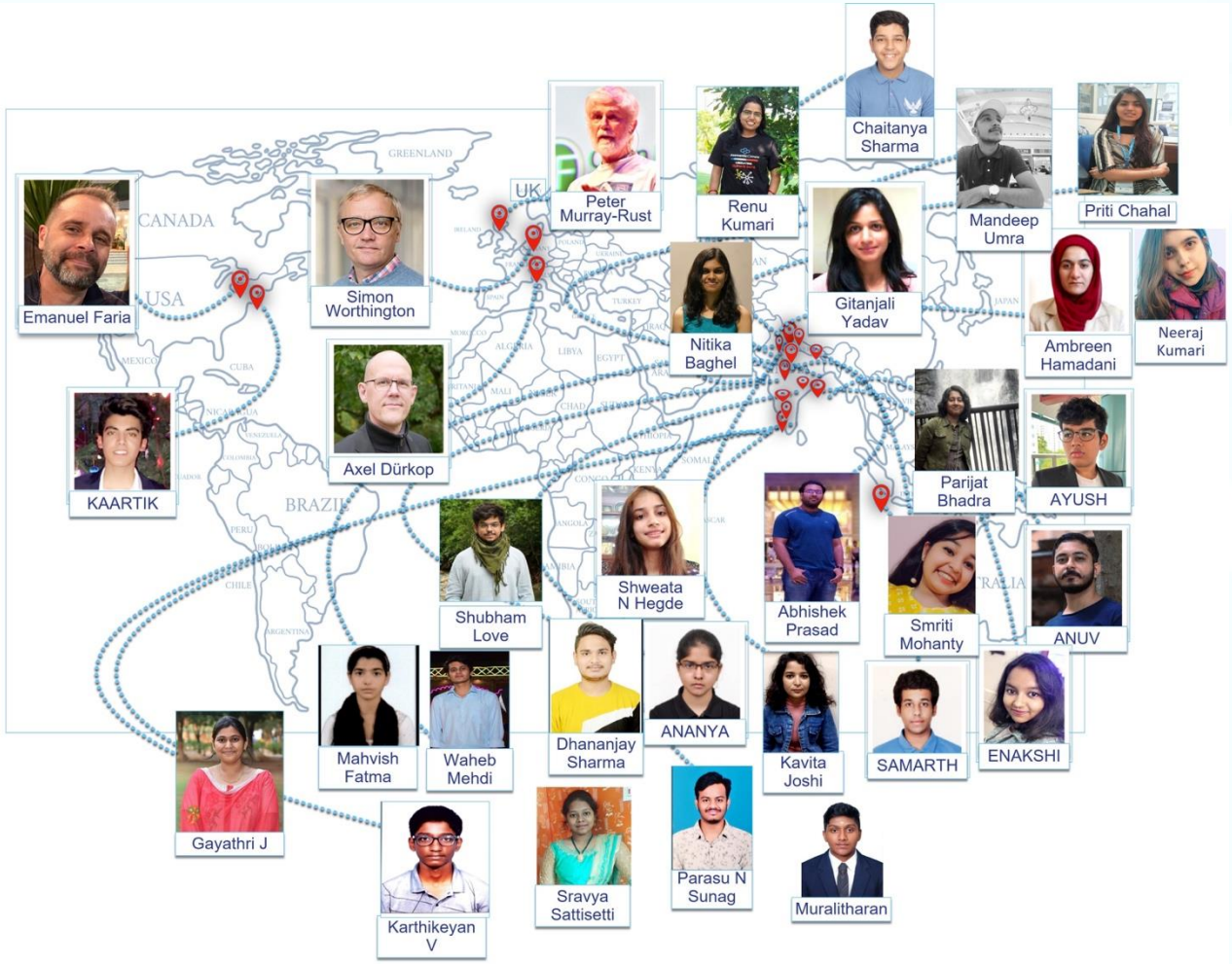
AR6/WG2/Cross-Chapter Paper 7: Tropical Forests

Madhana Kumar

AR6/WG2/Chapter 4 : Water



Sustainable Tech is created by Community

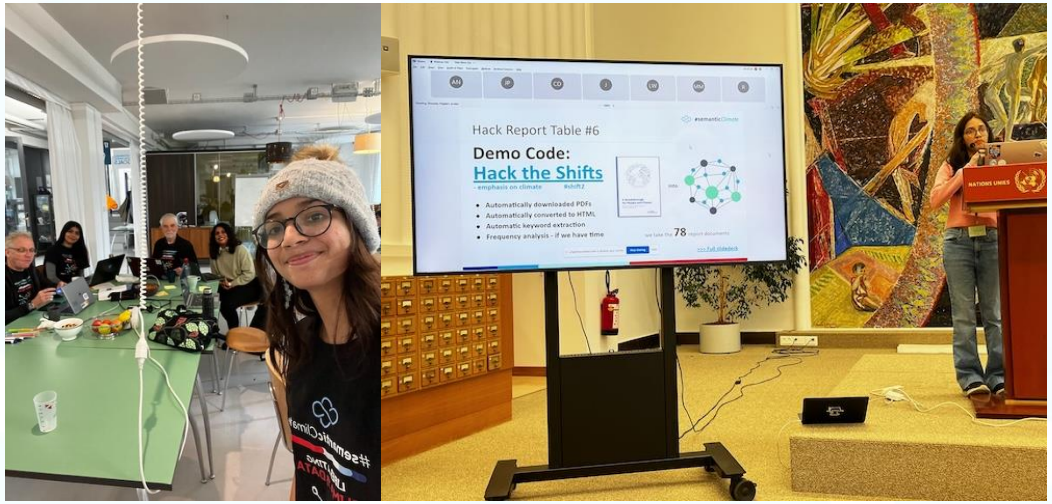


- Youth Learning by Doing; Internship Programme hosted at the National Institute of Plant Genome Research (NIPGR)
- 100+ participants

Community: Outreach

Outreach Organised

Outreach participated in



UNDatathon, UN Library Hackathon

Hands-on workshop on BioAI for Research

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~30 participants

Thirteen speakers shared valuable insights with the delegates.

RAG for summarizing IPCC paragraphs

Computer Vision for semantifying images

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Useful Links

Tools

[amilib]

[pygetpapers]

Products

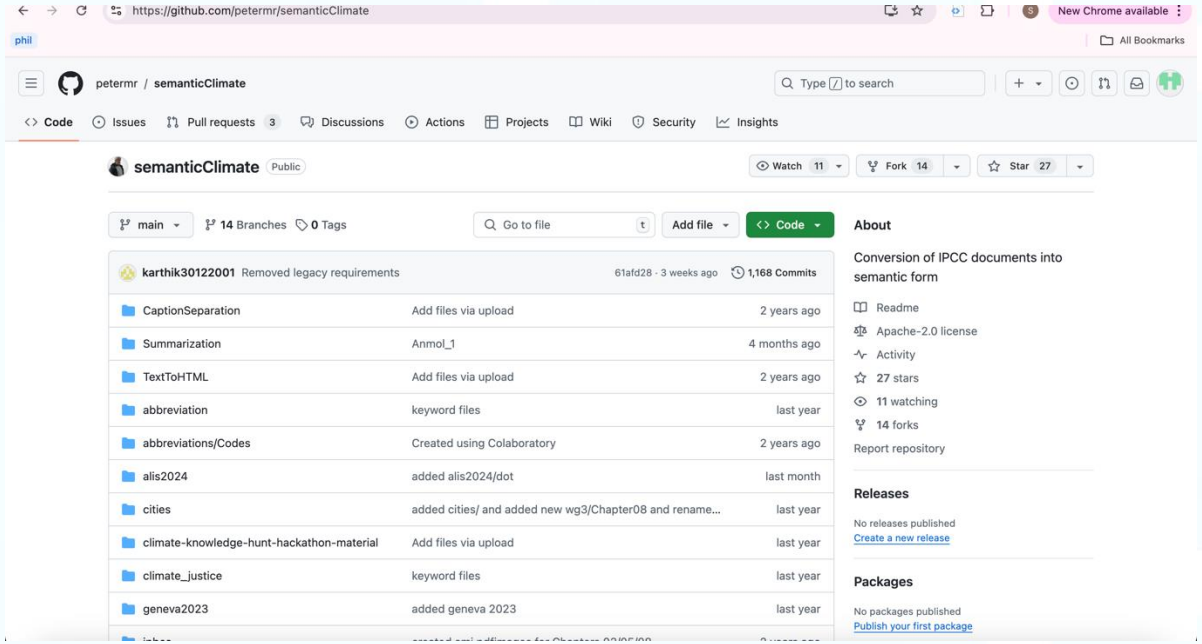
[IPCC Glossary]

[Wikibase Instance]

[Semantic IPCC corpus HTML Outputs]

Outreach

[Event highlights]



Let’s make climate knowledge 5-star (semantic)!