Apsis - Document Review Platform

Max Callaghan

July 31, 2018

Background

The exponential growth in literature about climate change raises challenges for environmental assessments:

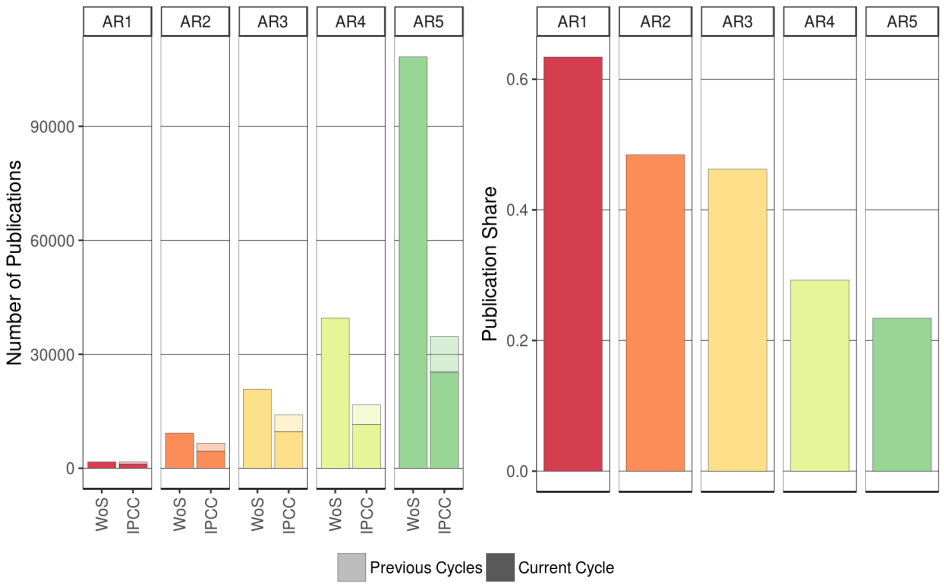

Figure: (Minx et al., 2017a)

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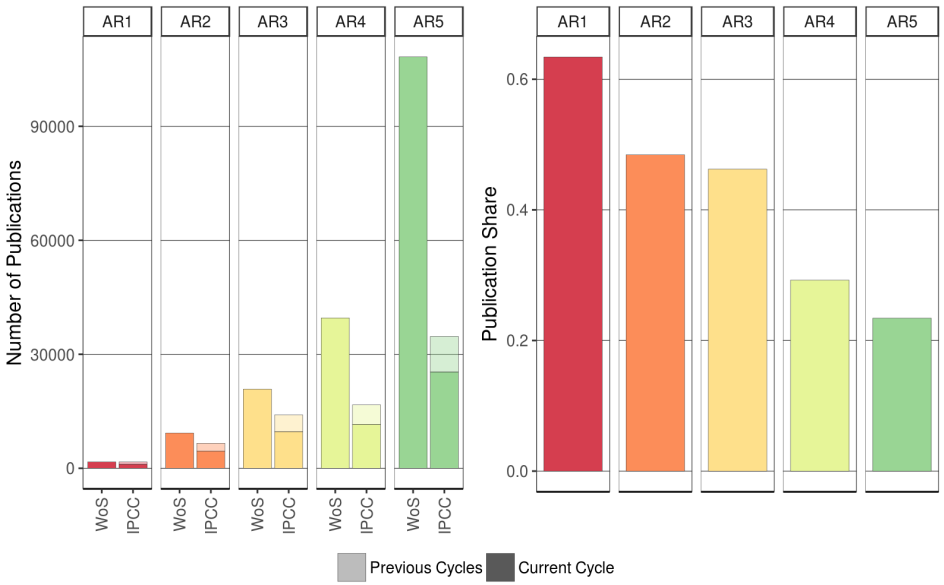

Figure: (Minx et al., 2017a)

- We need to develop ways of being more systematic in engaging with the literature

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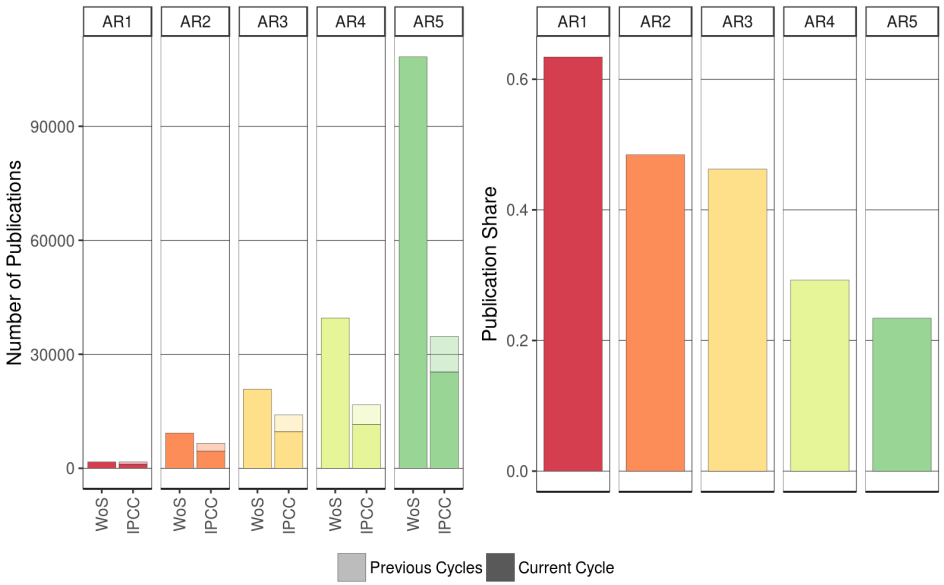

Figure: (Minx et al., 2017a)

- We need to develop ways of being more systematic in engaging with the literature
- We need more research on research results

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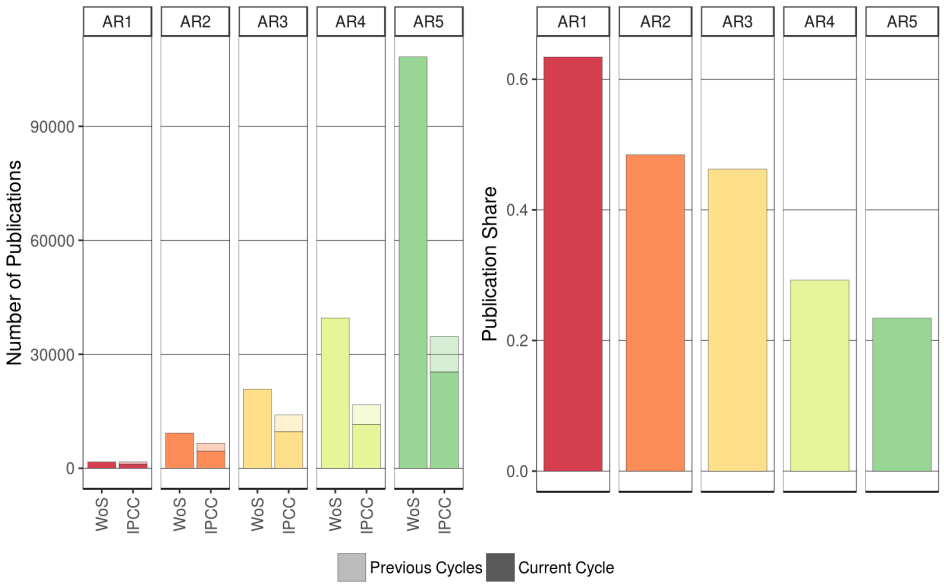
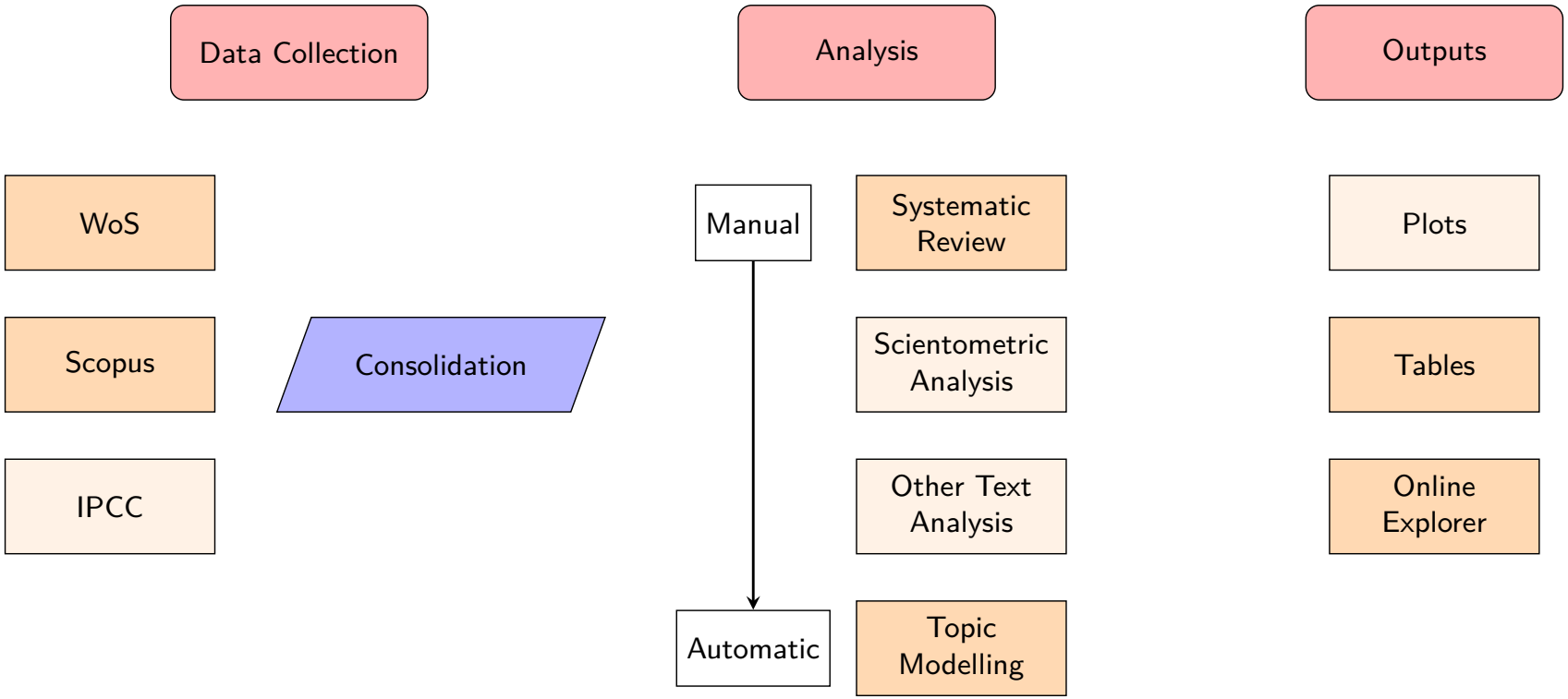


Figure: (Minx et al., 2017a)

- We need to develop ways of being more systematic in engaging with the literature
- We need more research on research results
- We need ways of engaging with large amounts of text

Infrastructure Overview



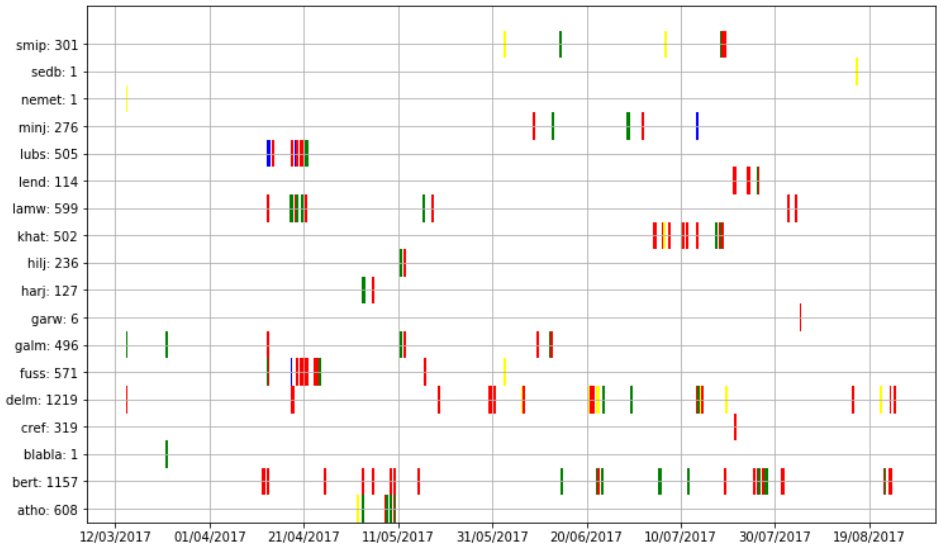
Systematic Review - NETs

For our systematic review of NETs, we wanted to be as systematic in our search, selection and treatment of literature as possible. We developed a system to help us

- To search and download (bulk) metadata from Web of Science (WoS) and Scopus
- To combine, compare and manage these queries and the documents associated with them
- To manage (centrally) the screening of documents by internal and external collaborators
- To run analysis based on user-entered tagging of documents and metadata from the WoS/Scopus

Systematic Review - NETs

We downloaded over 400 queries, and a team of 18 users reviewed hundreds of documents each.



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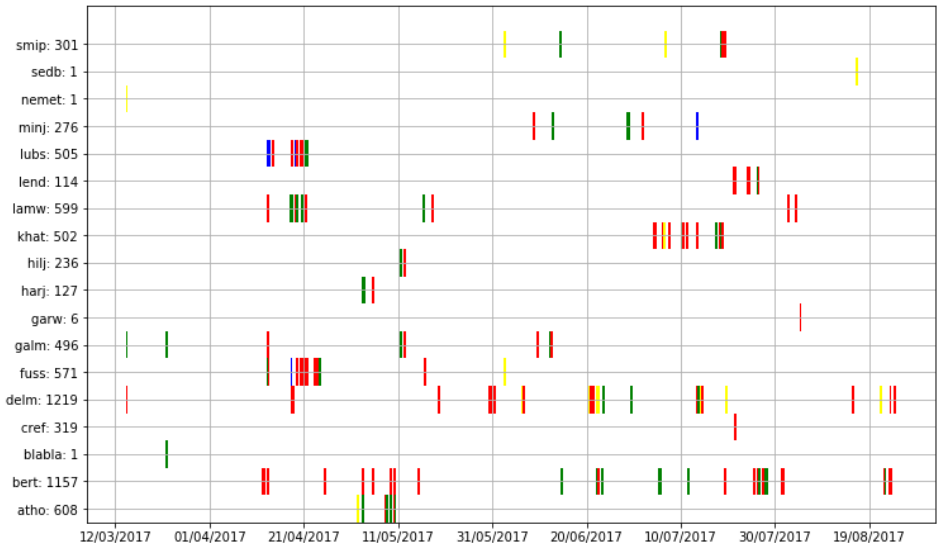
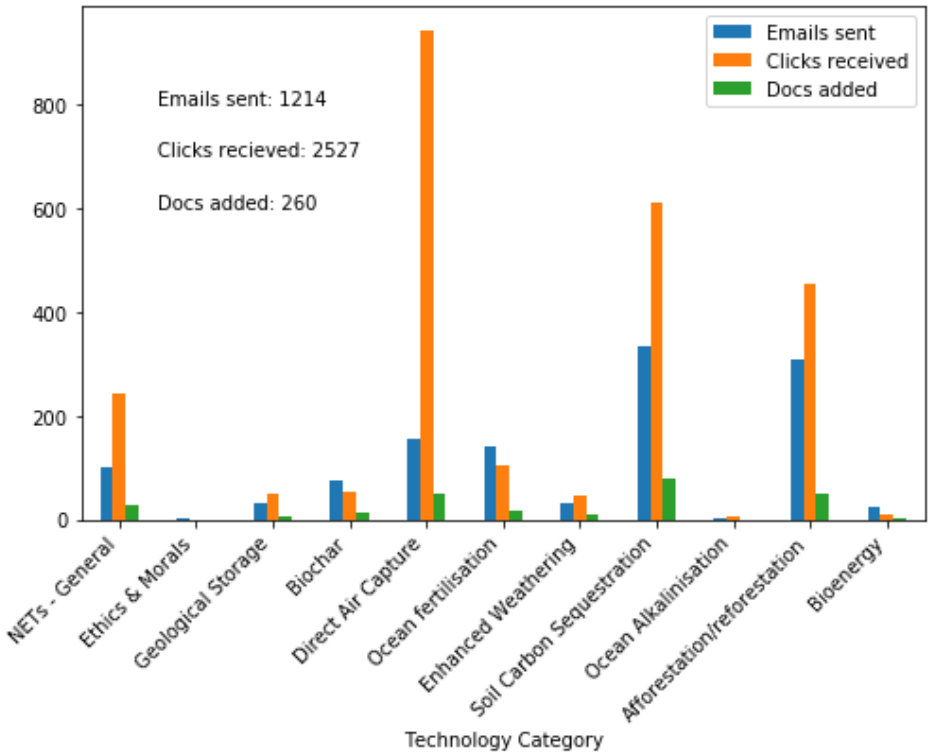
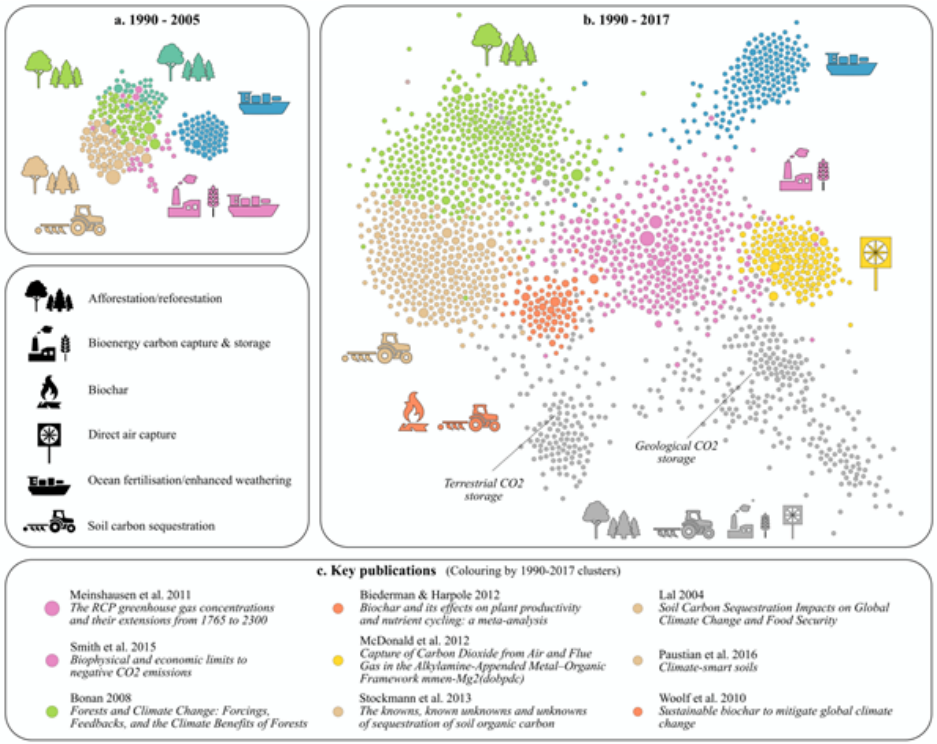


We used the results to automatically email all authors of relevant documents



Systematic Review - NETs

Based on the labels, we could efficiently characterise this bibliographic coupling network



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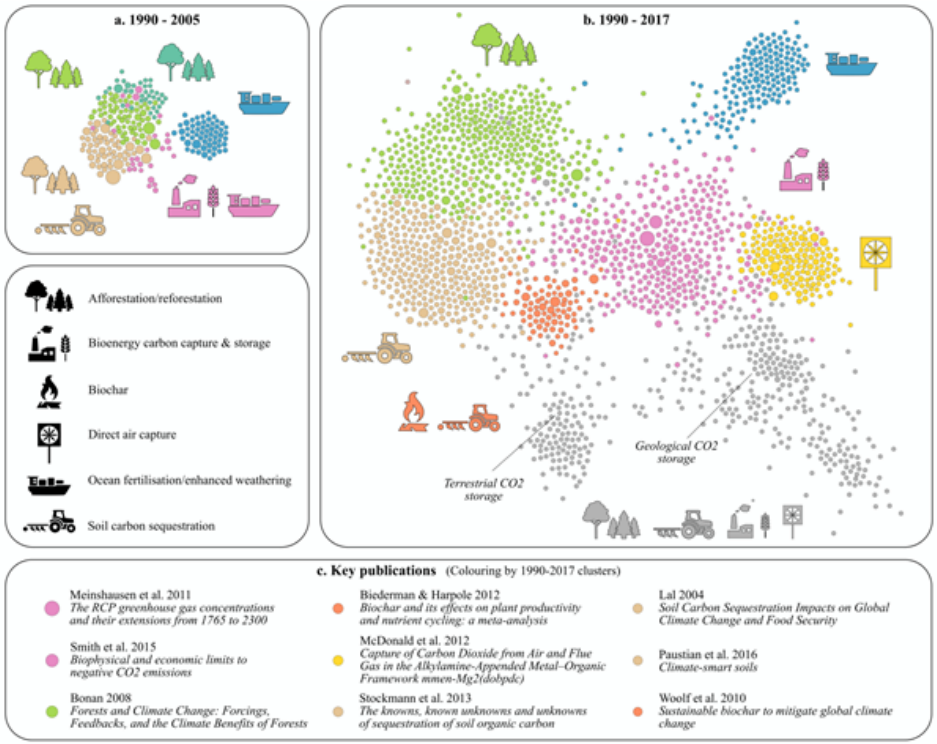

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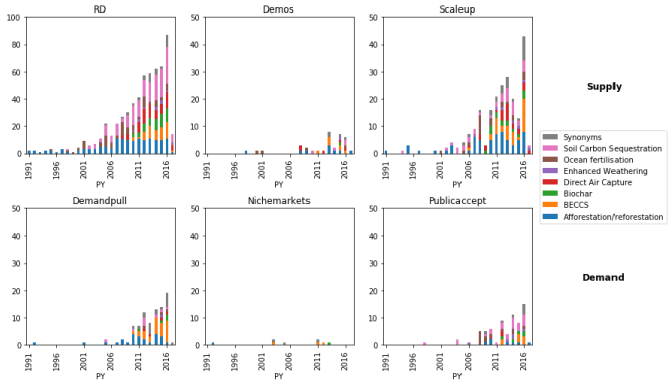
And after collecting further information, we could characterise the documents



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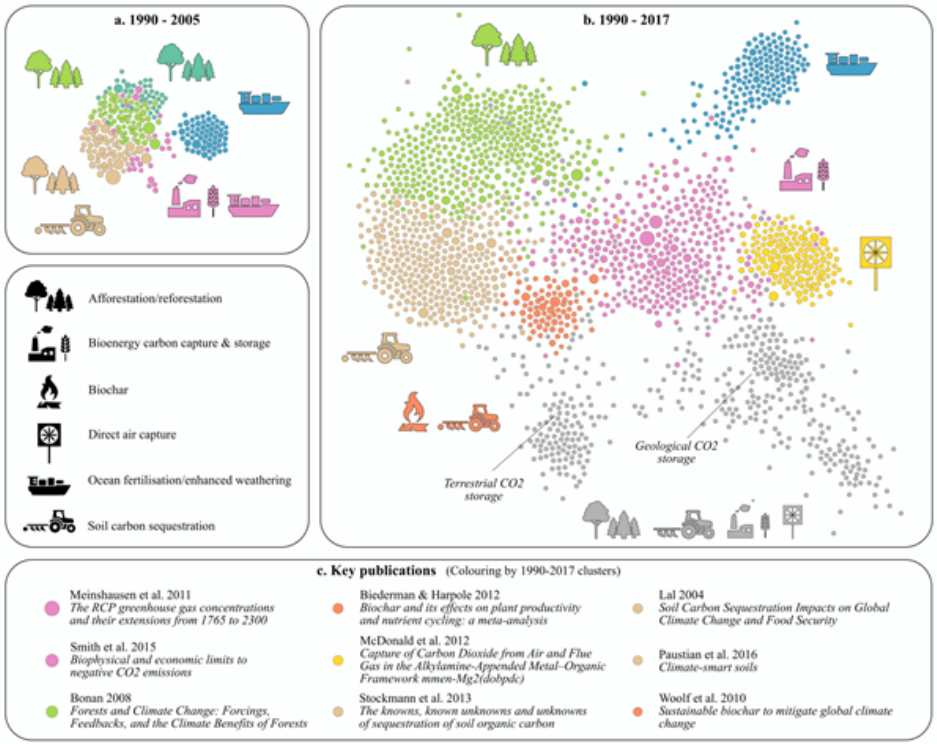

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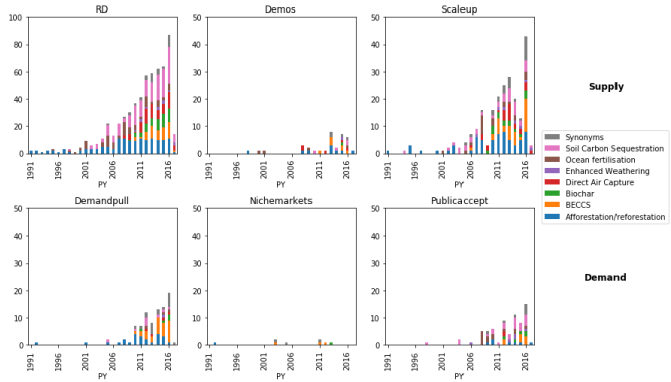


Figure: (Nemet et al., 2018)

And summarise information from them

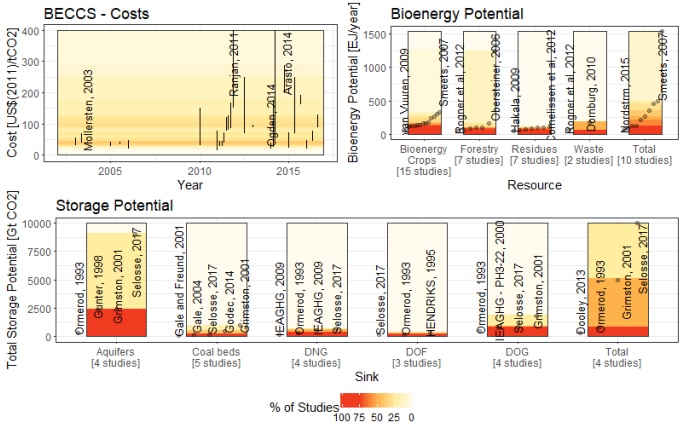
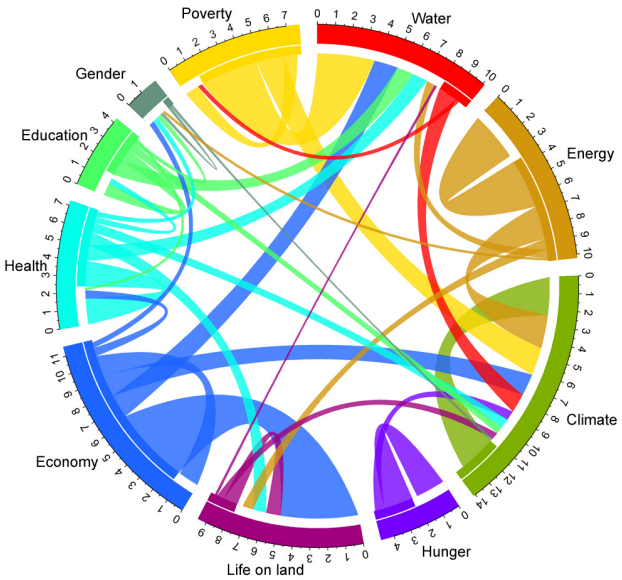


Figure: (Fuss et al., 2018)

Other projects

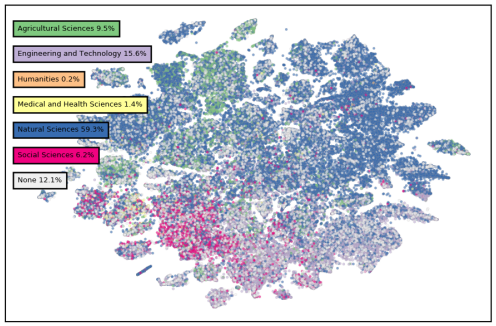
IAMs & SDGs with IIASA



- colleagues from IIASA now trialling tool

My PhD work

+ additional APSIS projects (Lamb et al., 2017; Minx et al., 2017b)



Other MCC projects

- Various systematic review and meta-analysis projects at MCC
- Discourse analysis with *Governance* group

Website

https://apsis.mcc-berlin.net/scoping

Caveats

Data Collection

Each time we download a query, we go through a tunnel to PIK (where we have access as Guest Researchers to WoS and Scopus) and instruct the computer to perform a search, and download the results in the maximum chunk size you are allowed (500 or 2000). Both companies prefer that only humans use their website.

Please therefore do search online, and only download what you need

Longer-term workarounds:

- Negotiate machine-access with WoS or Scopus (Elsevier !)
- Remove scraping feature from website and ask users to upload WoS/Scopus files directly

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In development

This is lots of pieces of work tied together, written as a side-project to my PhD. I like improving it, and adding more features, but I sometimes break it by accident, and I don't always have time or ability to fix it.

Structure

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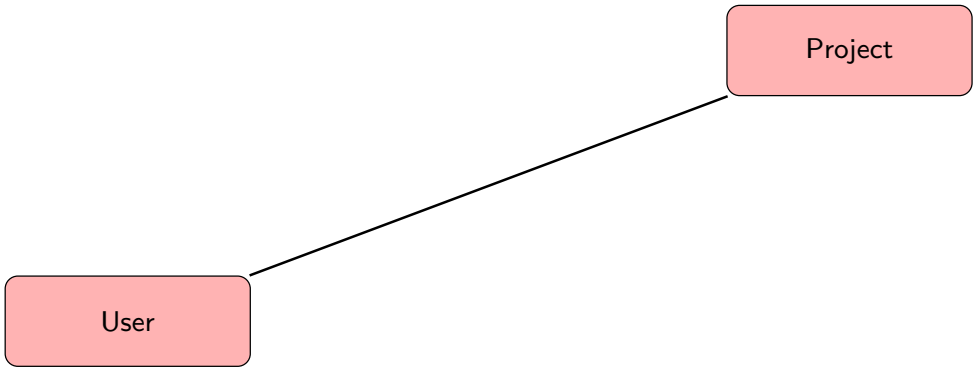

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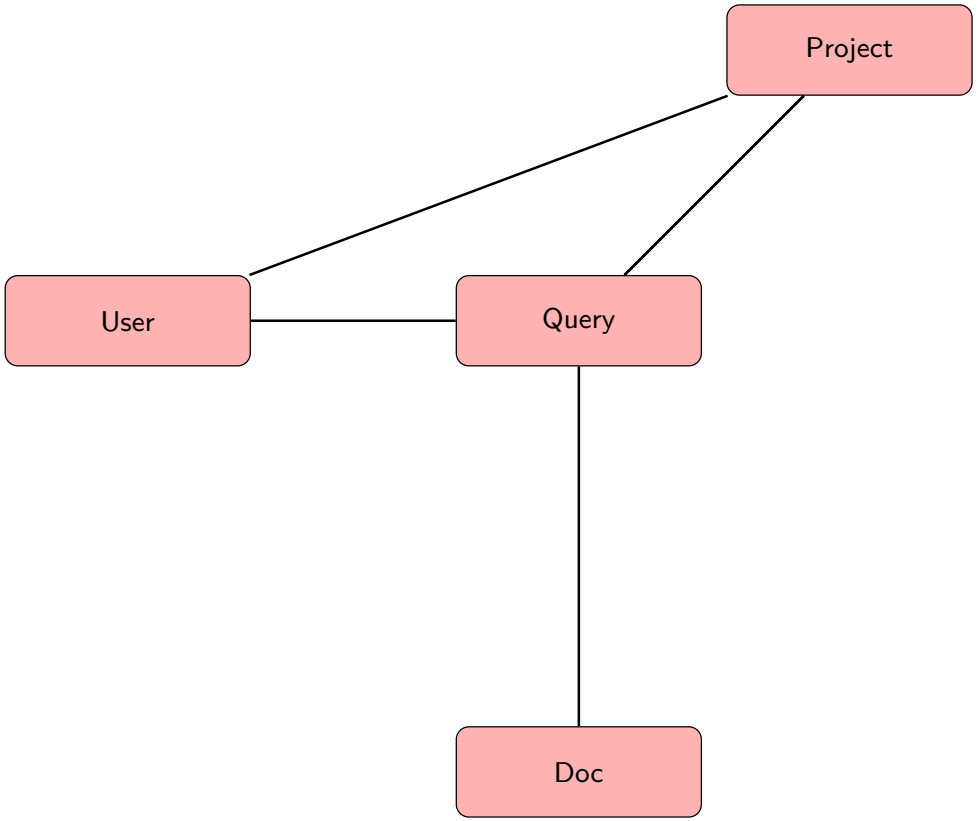

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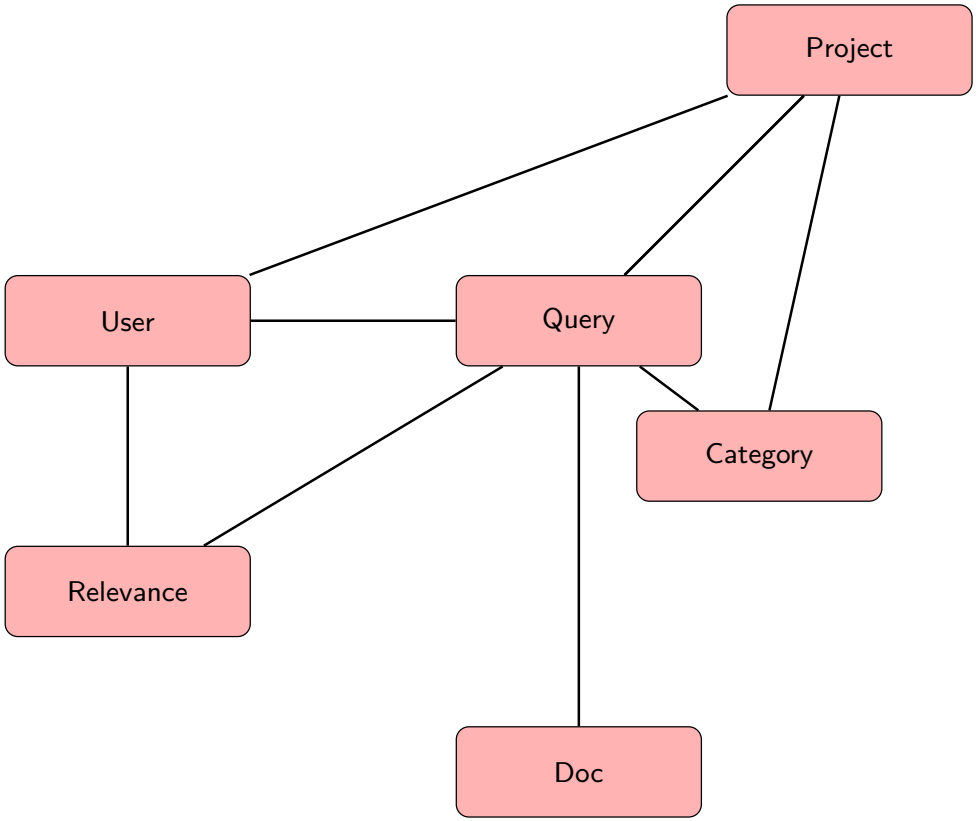

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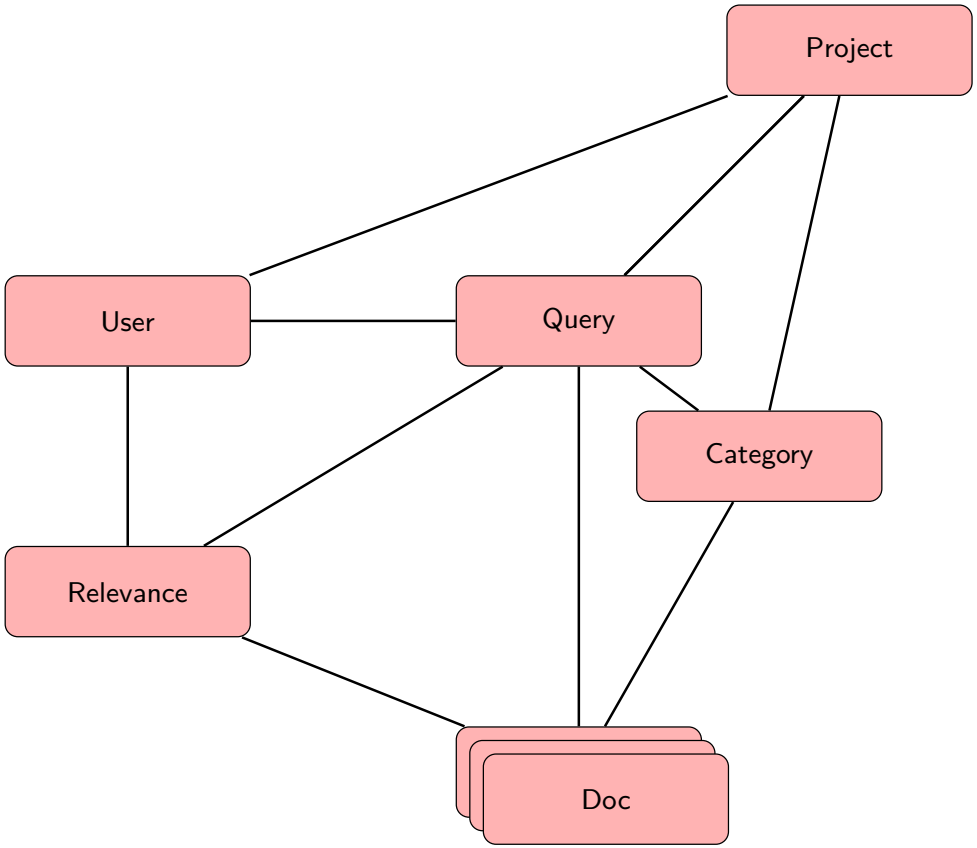

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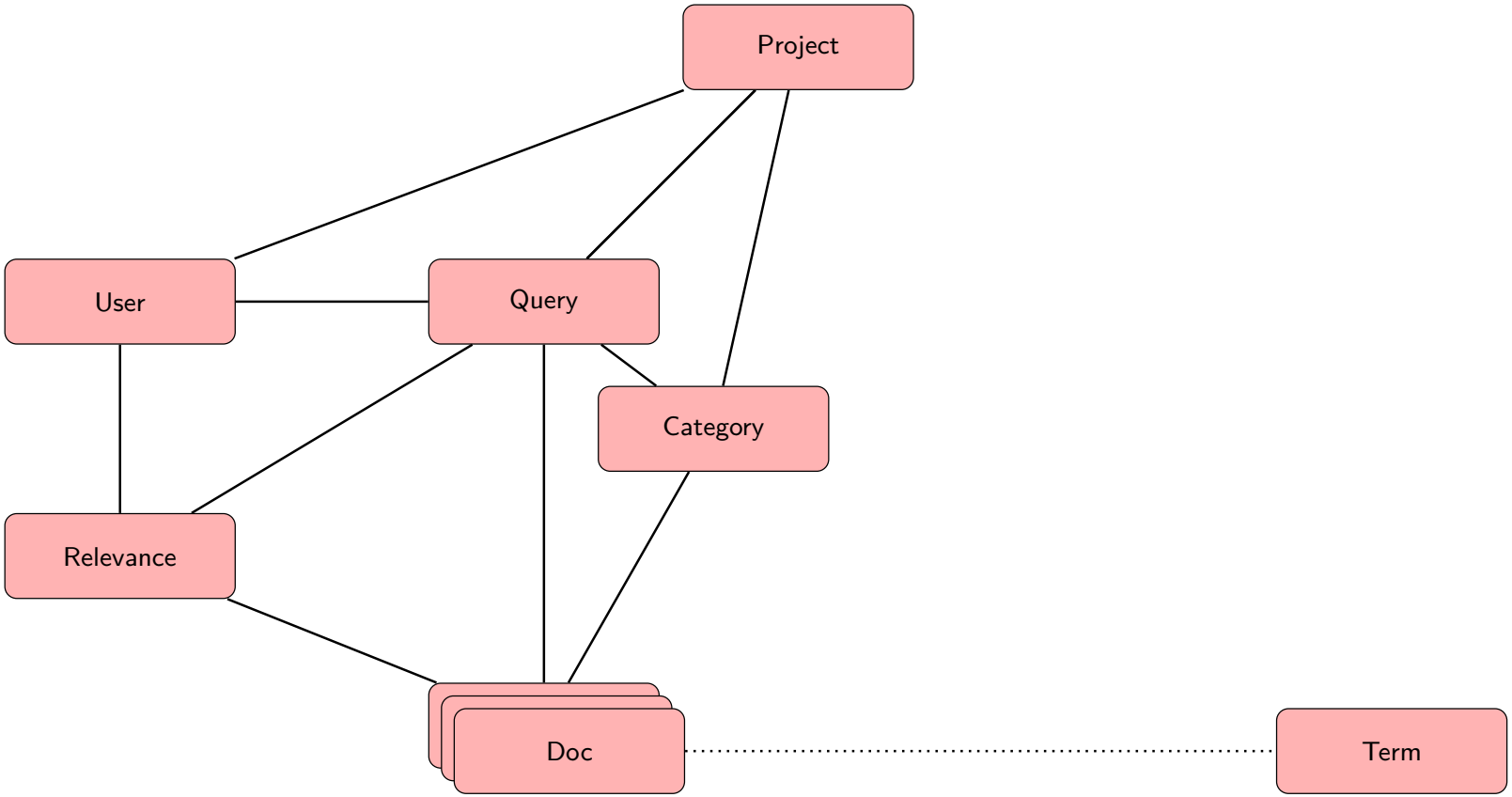

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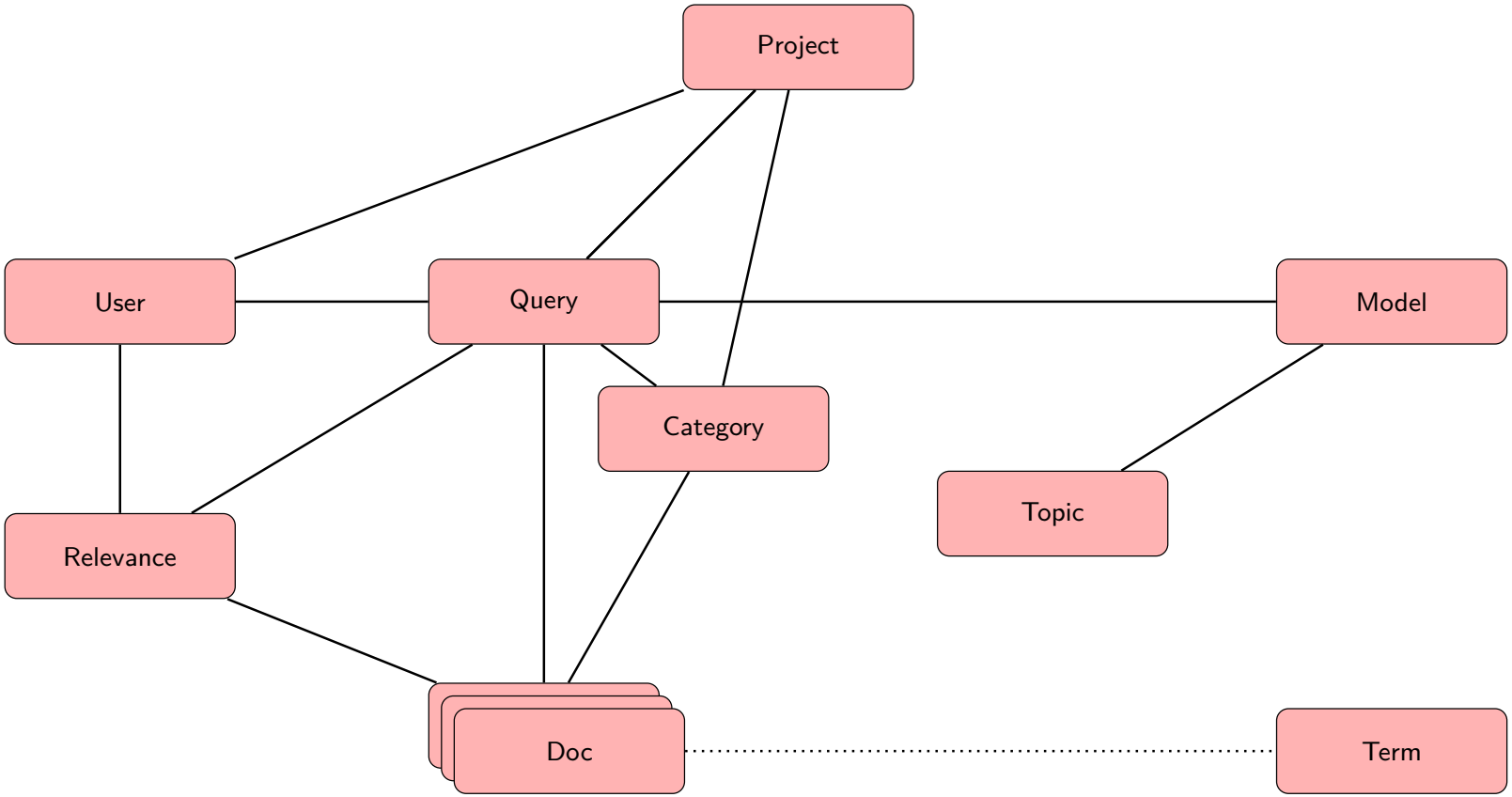
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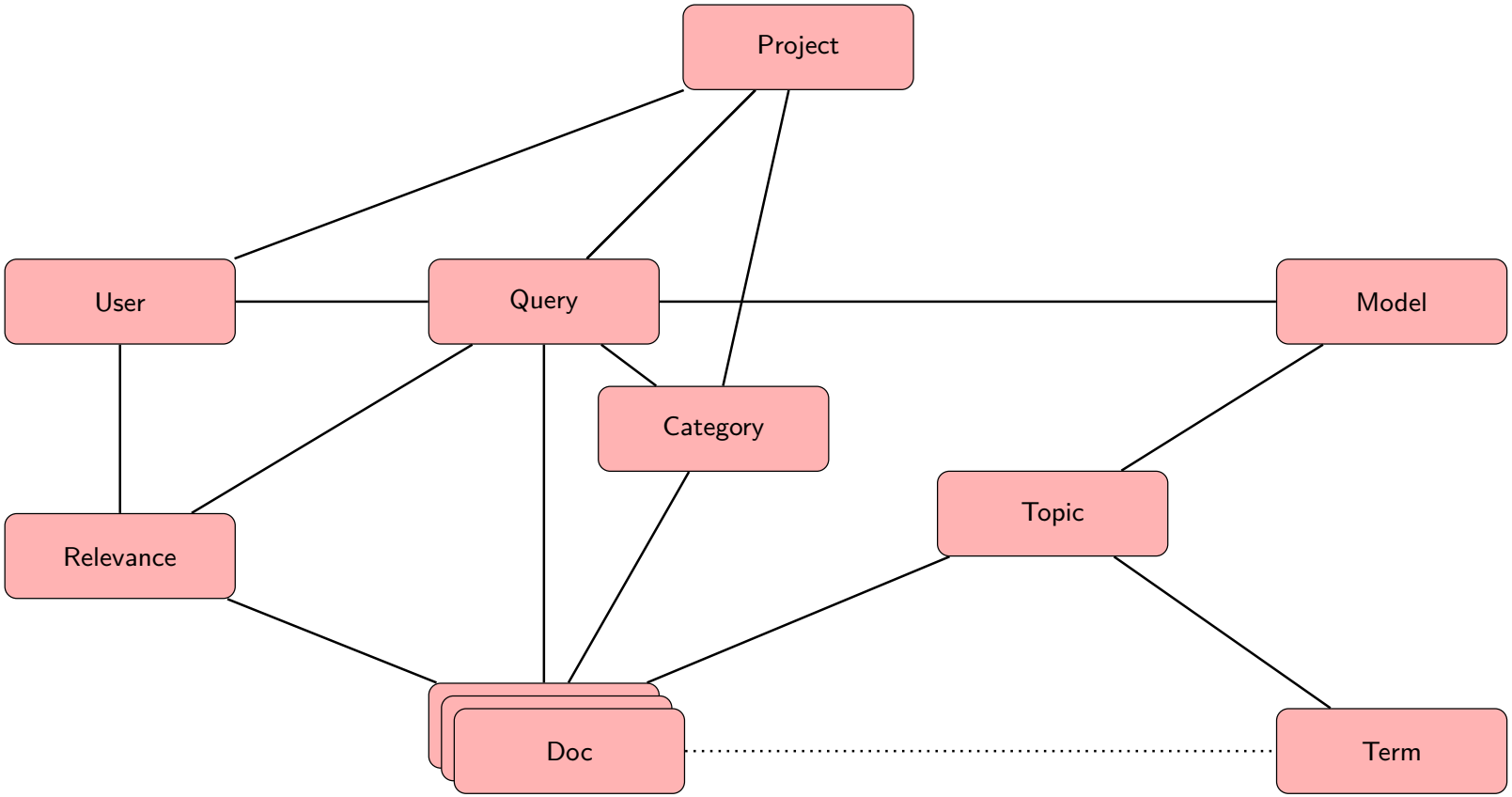
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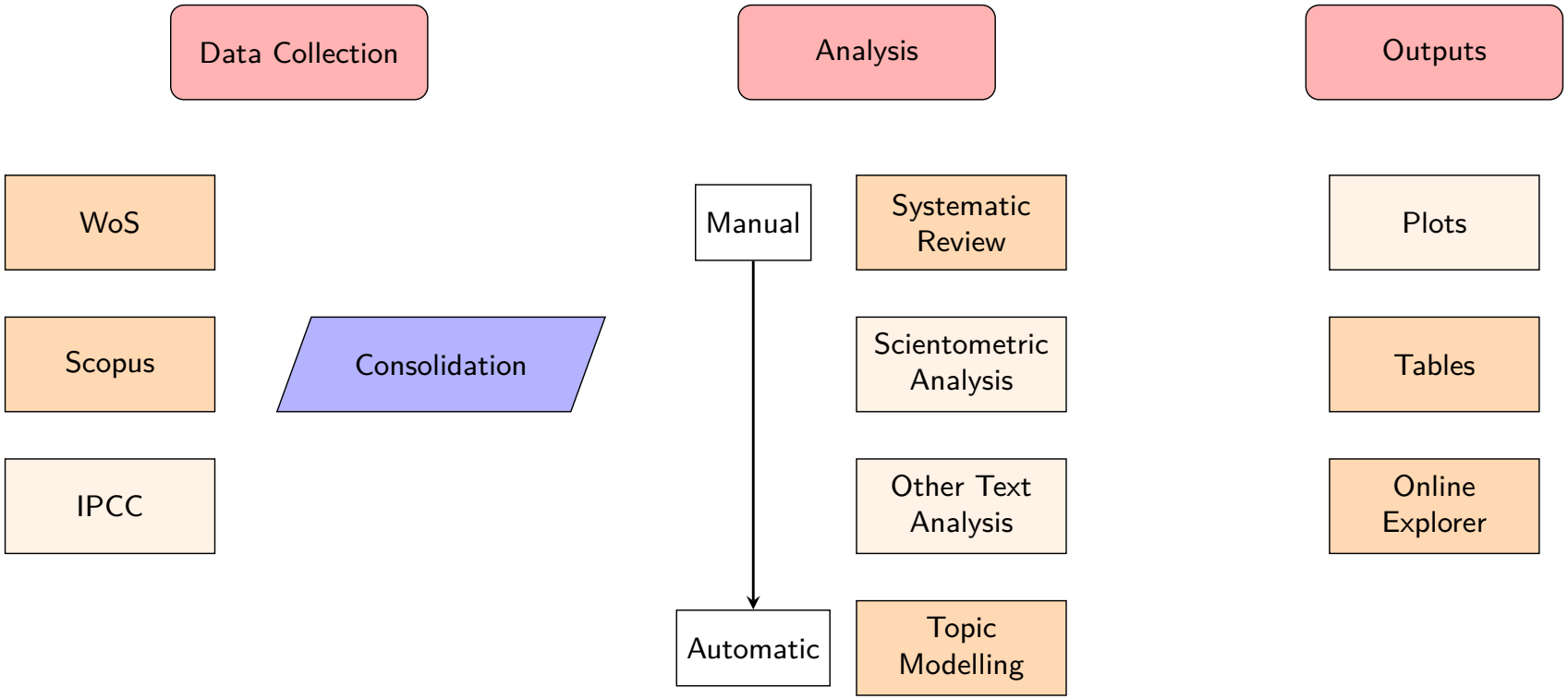
Summary



Future plans:

- collecting and synthesizing data within the platform
- using machine learning to predict relevance
- packaging and publishing tool for wider use

References

Code: `https://github.com/mcallaghan/tmv` (You can raise "issues" there)

Documentation: `https://github.com/mcallaghan/tmv/wiki/Scoping-Documentation` (fairly comprehensive but out of date as of July 31, 2018)

Fuss, S., Lamb, W. F., Callaghan, M. W., Hilaire, J., Creutzig, F., Amann, T., Beringer, T., de Oliveira Garcia, W., Hartmann, J., Khanna, T., Luderer, G., Nemet, G. F., Rogelj, J., Smith, P., Vicente, J. L. V., Wilcox, J., del Mar Zamora, M., and Minx, J. C. (2018). Negative emissions - Part 2: Costs, potentials and side effects. *Environmental Research Letters*, accepted.

Lamb, W. F., Callaghan, M. W., Creutzig, F., Khosla, R., and Minx, J. C. (2017). The literature landscape on 1.5[deg]C Climate Change and Cities. *Current Opinion in Environmental Sustainability*.

Minx, J. C., Callaghan, M., Lamb, W. F., Garard, J., and Edenhofer, O. (2017a). Learning about climate change solutions in the IPCC and beyond. *Environmental Science & Policy*.

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Nemet, G. F., Callaghan, M. W., Creuzig, F., Fuss, S., Hartmann, J., Hilaire, J., Lamb, W. F., Minx, J. C., Rogers, S., and Smith, P. (2018). Negative emissions - Part 3: Innovation and upscaling. *Environmental Research Letters*, accepted.