ONLINE SCOPING STUDY PROTOCOL

Tool for mapping the online science communication ecosystem for specific fields of science

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Scoping Protocol

Each of the following steps should be taken <u>for each topic (i.e. case study)</u>. Please, follow the protocol step by step so that all of us will carry out the scoping study in the same manner. This is particularly important to make the scoping study systematic.

If you find an individual or institution in a way that is not included in the protocol (e.g. you know them through your contact network or you found them through a web link), please <u>do not include them</u> and <u>send us a note</u>.

At the Kick-Off meeting in February 2019 we decided to explore three topics: **Artificial Intelligence**, **Climate Change**, and **Healthy Diet**. You can <u>choose two of these topics</u> that are best suited to your context.

You will need to run through the scoping study protocol for each of the topics you choose. Every time you do this, please <u>follow each step of this protocol</u>. The diagram below provides an overview of the several steps you will need to take.
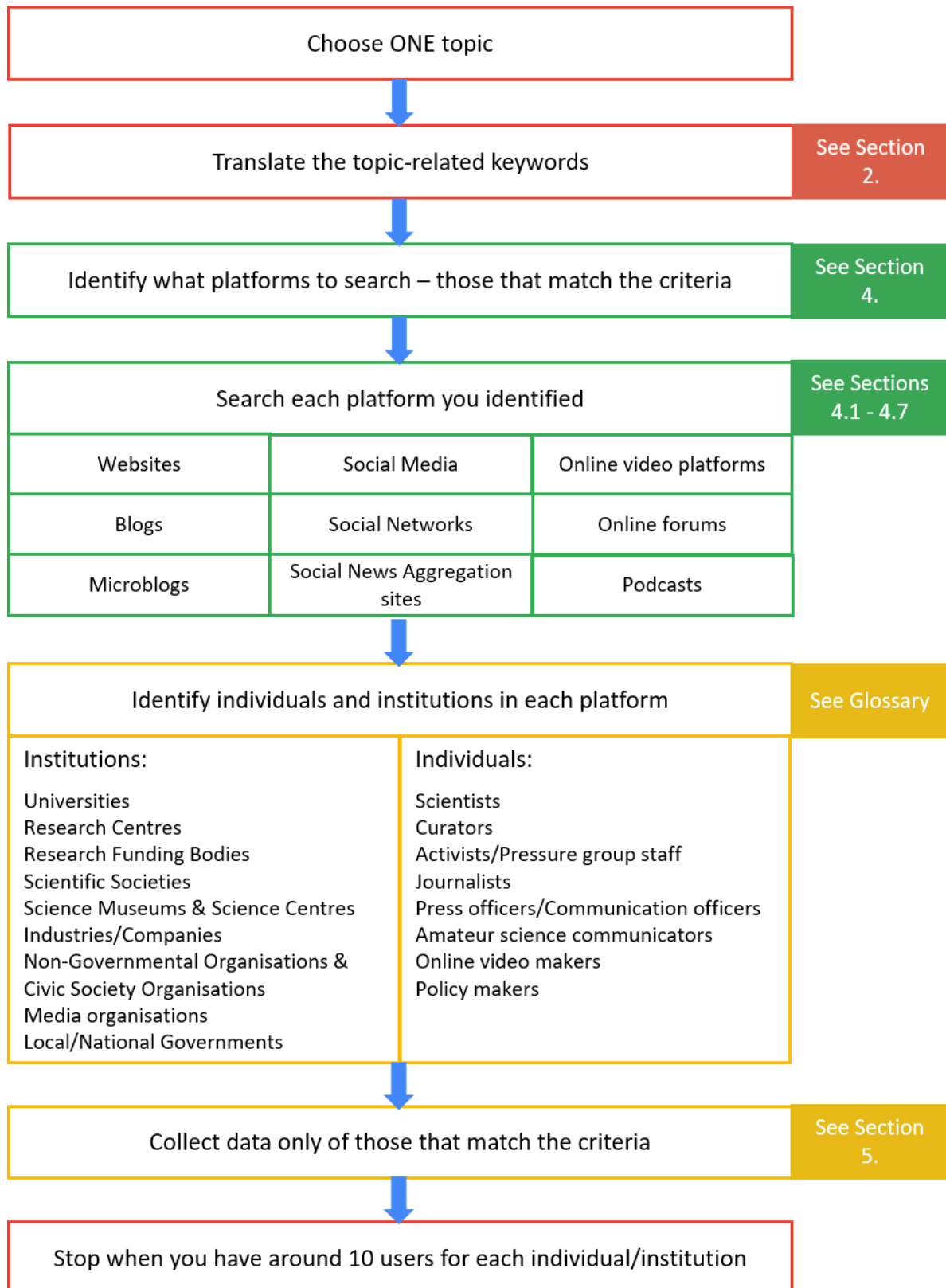
1. Data collection period

The scoping study will be carried **from the 6th of May to the 14th of June**. During this time, search for each topic on different platforms (see Section 4) and identify the potential individuals and influencers that communicate the topic online (see Section 5). You can include data generated before the collection period (e.g. users' accounts or websites/blogs launched before 2019).

Because the scoping study period does not include holidays (e.g. Easter, summer), it should not be influenced by these events. However, the amount of content shared may vary depending on the occurrence of topic-related events (e.g. approval of a new environmental policy to tackle climate change, AI summit, etc.). Hence, users that do not usually talk about the three topics may publish content on them. If an <u>event or issue</u> happens within your country, which is likely to have a significant impact on the data collected, please <u>report this back</u> to us as a research note.

Overview of scoping study process

Choose ONE topic	

⬇

Translate the topic-related keywords	See Section 2.

⬇

Identify what platforms to search – those that match the criteria	See Section 4.

⬇

Search each platform you identified			See Sections 4.1 - 4.7
Websites	Social Media	Online video platforms	
Blogs	Social Networks	Online forums	
Microblogs	Social News Aggregation sites	Podcasts	

⬇

Identify individuals and institutions in each platform	See Glossary

Institutions:	Individuals:
Universities	Scientists
Research Centres	Curators
Research Funding Bodies	Activists/Pressure group staff
Scientific Societies	Journalists
Science Museums & Science Centres	Press officers/Communication officers
Industries/Companies	Amateur science communicators
Non-Governmental Organisations &	Online video makers
Civic Society Organisations	Policy makers
Media organisations	
Local/National Governments	

⬇

Collect data only of those that match the criteria	See Section 5.

⬇

Stop when you have around 10 users for each individual/institution	

2. Select the keywords

Choose a topic, and then translate the provided **keywords** into your language. If you already know a keyword that is often used in your country to communicate about a topic online, but it is not listed, you can add it to your set. If you do so, please send us a note with the keyword and its English translation.

Keywords for the topic *Climate Change*:

- Climate change
- Global warming

Include any content that considers the causes or implications of climate change on the environment, the economy, policies and society. Including content that disputes the causes.

Exclude content that mentions climate change incidentally, but does not focus on the science of climate change. For example, content that criticises a government's environmental policies but does not provide any information on the processes behind climate change should be excluded. As should content that discusses the fossil fuel industry or green energy development without mentioning their role in climate change.

Keywords for the topic *Artificial Intelligence:*

- Artificial Intelligence

Artificial Intelligence is broadly defined as the study and development of computer systems that have the ability to perform tasks commonly requiring human intelligence, such as interpreting the content of photographs, language understanding, translating between languages, decision-making and problem-solving.

When mapping, include content that discusses what Artificial Intelligence is, its implications and how the technology is developing.

Include content about the applications of Artificial Intelligence only if the role of Artificial Intelligence is discussed and not just mentioned.

Include content on the implications of Artificial Intelligence on society, the economy, relevant policies and the implications for privacy only if the role of Artificial Intelligence is discussed and not just mentioned.

Exclude content that does not focus on Artificial Intelligence or that mention Artificial Intelligence incidentally (e.g. content that talks about how robots will take people's jobs without mentioning artificial intelligence).

Exclude online courses, university courses and webinars on Artificial Intelligence.

Keywords for the topic *Healthy Diet:*

- *Healthy eating*
- *Healthy diet*
- *Healthy nutrition*

Include content that discusses healthy nutrition and eating healthy.

Exclude content related to eating disorders, food safety and regulations, the food industry, farming and fresh food.

3. Before starting the search

Before carrying out your search, go to your browser's settings, and <u>clean your search history</u>. It would be even better if you could use a browser that you have not used before and that does not have any bookmarks (e.g. webpage saved). This step is particularly important because Google and other search engines use your previous searches and visited websites, blogs and social media sites to refine your future searches. For example, if you already visited or bookmarked websites on *climate change*, Google would show those websites first when you search for information on climate change. So if your search history isn't cleared, it would mean that your results would be influenced by what you have searched for previously rather than purely the key words you are using now.

You should <u>clear your history before starting the search for any new topic</u>. To clean your search history, follow the steps below.

If you use Explorer:

1) Click on the icon "Tools" on the top right (the one that looks like a cog)
2) Select "Safety" from the menu
3) Select "Delete browser history"
4) Tick all the boxes and then click on "Delete"

If you use The Edge:

1) Click on the icon with three dots "…" on the top right
2) Select "History" from the menu
3) Click on the "clean history", on the top right
4) Tick all the boxes and then click on "Clear"

If you use Firefox:

1) Click on the icon with three horizontal lines "≡" on the top right
2) Select "Library" from the menu
3) Select "History"
4) Select "Clear recent history…"
5) Tick all the boxes and select "Everything" on the top bar
6) Click on "Clear now"

If you use Chrome:

1) Click on the icon with the three dots (like this one "⋮") on the top right
2) Select "History" from the menu and then select "History" again; Chrome will open a new tab
3) Click on the icon with three horizontal lines "≡" on the top left
4) Select "Clear browsing data"; Chrome will show a pop up window
5) Select "Advance" on the top right of the pop up window
6) Tick all the boxes and then click on "Clear data"

If you use Safari:

1) Click on "History" on the top bar
2) Select "Clear History"
3) Select "Clear all history" from the menu

4. Select the platforms to map

You should search for Websites, Blogs, Online video platforms, Social Media, Social Networks, Social News aggregation sites, Microblogs, Online forums, and Podcasts related to the investigated topic. These outlets and sites are described in the Glossary, under the category *Platforms*. You should think about the potential platforms to search and check if they satisfy the inclusion criteria (see below) before conducting the scoping study.

You do not need to search all **platforms** available online for the topic. The platforms you should consider should satisfy the following inclusion criteria[1]:

- **Geographical reach**

  Include platforms that are known in your country. These platforms should be widely used by the people from your country.

  You can test the suitability of a platform as follows: pick one of the keywords and search the platform for that keyword. See whether it returns many results and whether those results seem to be relevant. If you struggle to find content in your language, then that platform may not be used in your language to discuss this topic and you should exclude it.

- **Type of facilitated communication**

  Include any platform that facilitates communication from one user to many, from many users to many other users (big networks), or from few users to few users (small groups).

- **Type of users**

  The users using the platform can have any background, social class, education level, ethnicity and gender. The platform should not exclude any group (though some groups may not use one medium and prefer another instead).

  The users can either have an interest in Science, Technology Engineering, Mathematics and Medicine (STEMM) or not. The platform can be focused on STEMM content sharing and discussion or not.

- **Format and content characteristics**

  Include platforms that facilitate sharing of textual, visual and audio content.

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[1] These criteria are based on those for media selection stated in the chapter 'Content Analysis', from Hansen A, Cottle S, Negrine R, Newbold C (1998) *Mass Communication Research Methods*.

Exclude platforms that are educational channels (e.g. YouTube education) or strictly academic sites (e.g. ResearchGate, Google Scholar).

- **Accessibility and availability**

    Select platforms that <u>allow</u> you to <u>search</u> for their content and users for research purposes. If you <u>cannot access and search</u> the platform without having an account or, if you cannot find content written in your language or users from your country, do not include that platform. However, it would be useful if you <u>reported this to us</u> as a research note, even if it is not included in the data.

    It would be better if the platform offers an advanced search function. An advanced search offers the possibility to filter the search results and display only those that match specific criteria, such as language, country, etc. Google and Twitter have an advance search function.

4.1 Searching for websites

To search for websites, use Google advanced search.

You can access Google advanced search through this link. Otherwise, search Google for any word related to the topic; then go to "Settings" under the search bar (see Figure 1) and select the option "advanced search".
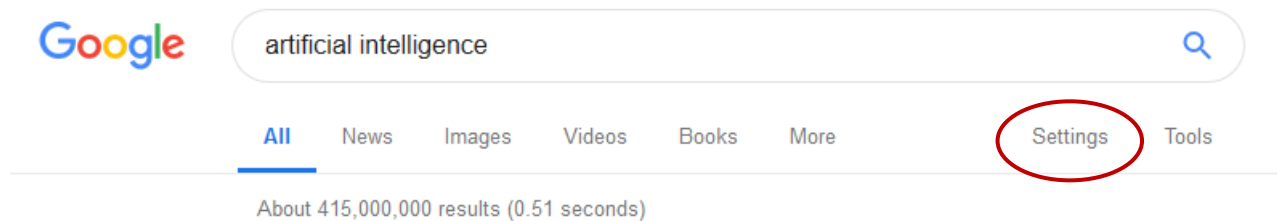
Figure 1

In the advanced search, fill the search box 'Any of these words' with the keywords you selected. Put the keywords formed by more than one word in quotation marks, for example "climate change".

Select your language under the search box 'Language' and your country under the search box 'Region'.

Figure 2 shows an example of how to complete the advanced search form. Once you have filled the form, begin the search.

Google

Advanced Search

Find pages with...

all these words:	
this exact word or phrase:	
any of these words:	"artificial intelligence" "cognitive computing" "machine learning" APIs
none of these words:	
numbers ranging from:	to

Then narrow your results by...

language:	English
region:	United Kingdom
last update:	anytime
site or domain:	
terms appearing:	anywhere in the page
SafeSearch:	Show most relevant results
file type:	any format
usage rights:	not filtered by licence

Advanced Search

Figure 2

You may find results such as those in Figure 3. In the Figure, you can see that Google returned results such as a company's website, a governmental department's website, a scientific society's webpage, and two universities' webpages. You will need to look at the first 10 pages at least. Look

at the description of the webpages under the URLs, and click on the links when they are relevant to the topic. Check the webpage and see if the user (individual or institution) matches the criteria explained in Section 5.

Figure 3

If your result stream shows only companies, shops, and enterprises in the first 10 pages, you can amend the search criteria to exclude these types of businesses. In this way, you will be able to find websites curated by individuals and other types of institutions. However, if you decide to <u>run the search</u> again <u>excluding companies</u>, please <u>report this back</u> to us as a research note. To exclude companies, you need to set the search as it was before, and fill the search box 'none of these

Advanced Search

Find pages with...

all these words:	
this exact word or phrase:	
any of these words:	"healthy food"
none of these words:	compan* enterprise* farm* supermarket* shop*
numbers ranging from:	_____ to _____

Then narrow your results by...

language:	English
region:	United Kingdom
last update:	anytime
site or domain:	
terms appearing:	anywhere in the page
SafeSearch:	Show most relevant results
file type:	any format
usage rights:	not filtered by licence

Advanced Search

Figure 4

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words' with all the terms that may indicate company or enterprise. Figure 4 shows an example of this type of advanced search. The asterisk "*" at the end of the word (e.g. enterprise* or compan*) tells Google to search for variations of the same word (e.g. enterprise and enterpriseS, or companY and companIES).

4.2. Searching for blogs

Use Google advanced search to search for blogs, and follow the steps below:

1) Fill the search box 'All these words' with the word "blog"
2) Fill the search box 'Any of these words' with the keywords you selected
3) Select your language under the search box 'Language'
4) Select your country under the search box 'Region'.

Figure 5 shows an example of how to complete the advanced search form. Once you have filled the form, run the search.

Find pages with...

all these words:	blog
this exact word or phrase:	
any of these words:	"climate change" "global warming"
none of these words:	
numbers ranging from:		to	

Then narrow your results by...

language:	English
region:	United Kingdom
last update:	anytime
site or domain:	
terms appearing:	anywhere in the page
SafeSearch:	Show most relevant results
file type:	any format
usage rights:	not filtered by licence

Advanced Search

Figure 5

4.3. Searching social networks, social media and microblogging sites

To find individuals and institutions that share content on the chosen platforms, you can search these platforms or run a Google advanced search. Below, different types of searches are shown for Facebook, Instagram and Twitter.

These processes can be adapted to other platforms as well, and they all have the same three steps:

1) Search for the selected keywords
2) Set your language
3) Set the site or domain (see below).

Facebook

For example, to search Facebook content, you can run and Google advanced search as before (see Section 4.1) with a few adjustments. Fill the search box 'Any of these words' with the **keywords** you selected, then select **your language** and **your country**, and add "**Facebook.com/pages**" in the search box 'site or domain'.

Figure 6 shows the last part of the filled form.

Figure 6

Searching for Facebook Pages will exclude events, groups and careers or advertising. However, it will also exclude profiles. Therefore, this search should be compensated by other types of search, such as trying to search Facebook itself (though this social network returns only profiles that have the queries in the title, not in the description or in other places).

If the Google search returns only Facebook pages related to companies and other businesses, modify the advanced search as followed:

1) Think about words that may mean 'shop', 'company', 'selling', 'enterprise' etc.
2) Add these words in the search box 'none of these words'
3) Run the search again (see Figure 7).

In this way, you will be able to remove commercial pages from your search, and to find other types of users.

Find pages with...

all these words:	
this exact word or phrase:	
any of these words:	"climate change" "global warming"
none of these words:	farm* enterprise* compan*
numbers ranging from:	to

Figure 7

Instagram

The most effective way to search Instagram for the purposes of scoping research is by usings Google advanced search.

To search for Instagram users, follow these steps:

- Fill the search box 'This exact phrase' with "Instagram photos and videos"
- Fill the search box 'Any of these words' with the keywords you selected
- Write "inurl:explore" in the search box 'None of these words'
- Select your language
- Write "Instagram.com" in the search box 'site or domain'
- DO NOT select your country (see Figure 8).

The phrase "Instagram photos and videos" is common on Instagram profile pages, and it will filter the results in order to display only the users' profiles, not the singles photos and videos they share.

By excluding the term "inurl:explore" you will exclude the suggestions offered by the function *Explore* on Instagram. This function shows the posts and profiles that could match the interests of the user conducting the search; hence it could show results that are out of topic.

Instagram does not have a version of the website for each country, like Facebook; hence, it is not possible to filter the results by country. For this reason, it is important to filter the results by language at least, and verify the location of the user (if available).

Figure 8

This search will return Instagram accounts that have the keywords in their name. Hence, it may exclude users who do not have these keywords in their name, but communicate about the topic

Using similar settings for the search, it is possible to search for Instagram posts on the topic. From these, you can explore the users that post them and decide whether to consider it a potential individual/institution for the mapping or not (see the criteria discussed at Section 5 for guidance).

To search for Instagram users, follow these steps:

- Fill the search box 'Any of these words' with the keywords you selected
- Write "inurl:p inurl:explore" in the search box 'none of these words'

- Select your language
- Write "Instagram.com" in the search box 'site or domain'
- DO NOT select your country (see Figure 9).

As mentioned before, Instagram does not have a version of the website for each country; hence, it is not possible to filter the results by country. For this reason, it is important to filter the results by language at least, and verify the location of the user (if available).

By excluding the terms "inurl:p" and "inurl:explore", you will exclude Instagram profile pages and posts shows in the Explore page, respectively. In this way, only Instagram posts are displayed in the results.

Find pages with...

all these words:	
this exact word or phrase:	
any of these words:	"artificial intelligence" "machine learning"
none of these words:	inurl:p inurl:explore
numbers ranging from:	to

Then narrow your results by...

language:	any language
region:	any region
last update:	anytime
site or domain:	instagram.com
terms appearing:	anywhere in the page
SafeSearch:	Show most relevant results
file type:	any format
usage rights:	not filtered by licence

Advanced Search

Figure 9

Twitter

There are two ways to find users on Twitter that should be combined. The first one includes the Twitter search, the second includes Google advanced search.

Before searching Twitter, write your query in a text file (e.g. Word document):

1) Write the keywords you selected and include in quotation marks those longer than one word. Separate each keyword with the operator "OR". You may want to use specific hashtags; for example, some English hashtags are #ArtificialIntelligence and #MachineLearning

2) At the end of the query, write lang: followed by the ISO 639-1 code of your language. You can find your code at this link. This operator filters the tweets returning only those written in your language

3) Copy and paste your query in the Twitter search bar and run the search.

An example query is the following: "artificial intelligence" OR #artificialintelligence OR #machinelearning OR "machine learning" lang:en

Some users may add specific words (e.g. artificial intelligence expert) or hashtags (e.g. #artificialintelligence expert) in their biography. Hence, by combining hashtags and key words in the search query you will be able to find either type of users.

After launching the search, select the option "People" from the bar on the top to see Twitter users tweeting about the topic specifically (see Figure 10).
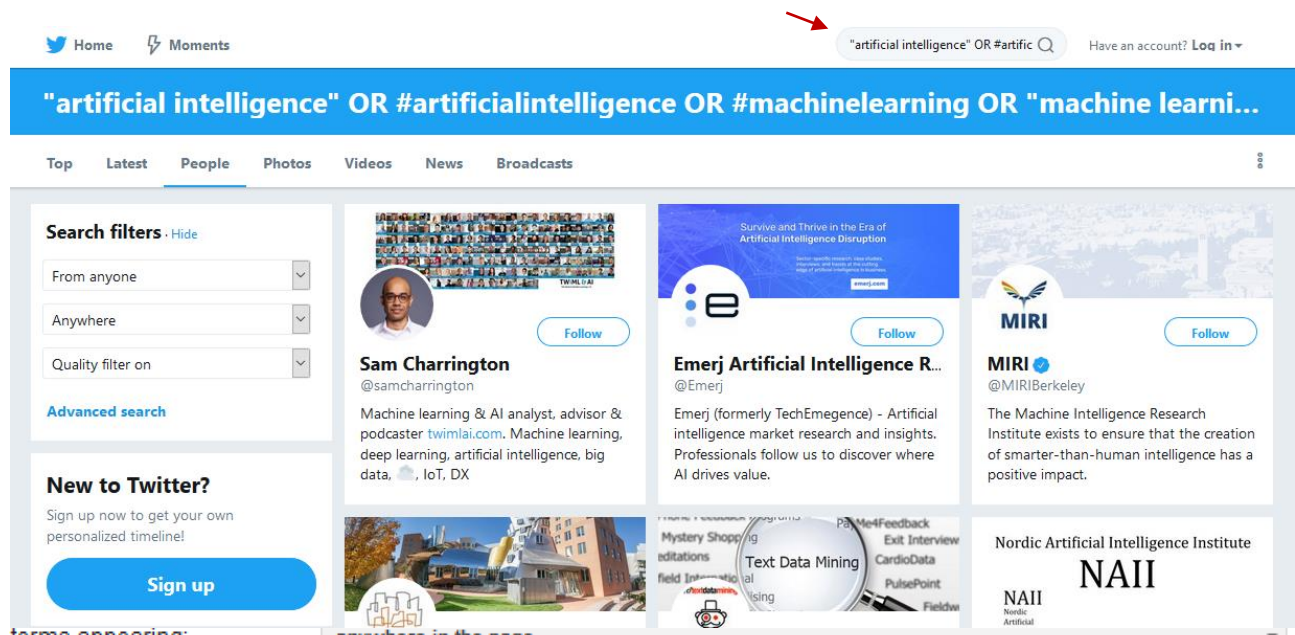

Figure 10

Figure 11

Not all users will have these keywords in their biography; hence, it may be difficult to find them in this way. Searching for a Twitter list can solve this issue.

Twitter lists are lists of actors posting content about a certain topic, and they are created by other users. To search for lists, go to Google advanced search, fill the search box 'Any of these words' with the **keywords** you selected, select **your language**, and add "**Twitter.com/*/lists**" in the search box 'site or domain' (see Figure 11). DO NOT select your country.

This search will return Twitter lists that you can explore. When you click on a list, then click on "members" to see the users that are included. Remember to select only users that tweet in your language. Figure 12 shows an example of a Twitter list found through this process.

4.4. Searching online video platforms

To search for video platforms users there are two options. One is to search the platform itself and the other one is to use Google advanced search.

YouTube

On YouTube, write your keywords in the search bar, then click on filters. Select the search box "Channel" under 'Type', and "View count" under 'Relevance' (see Figure 13). In this way YouTube will visualise only channels (i.e. users) that have uploaded many videos and have many subscribers (followers).
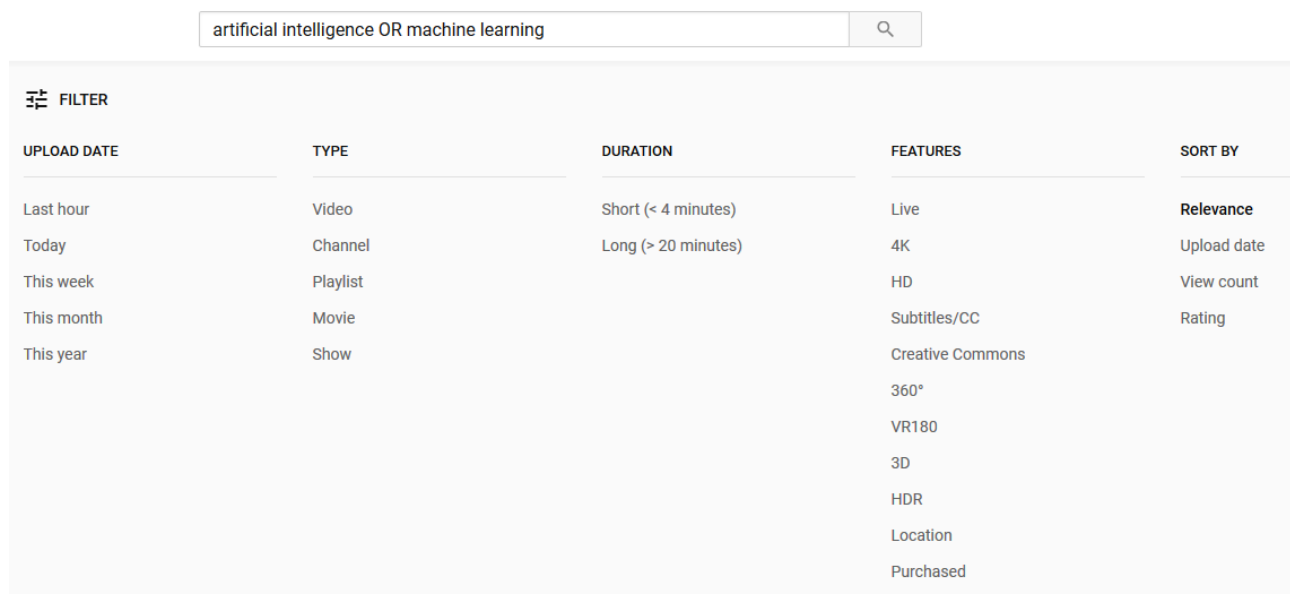
Figure 13

You should type one or two keywords at time and run the search on YouTube. You can open more than one browser tab, each on YouTube, and run several different searches at the same time.

Figure 14 shows an example of the results found using this search.
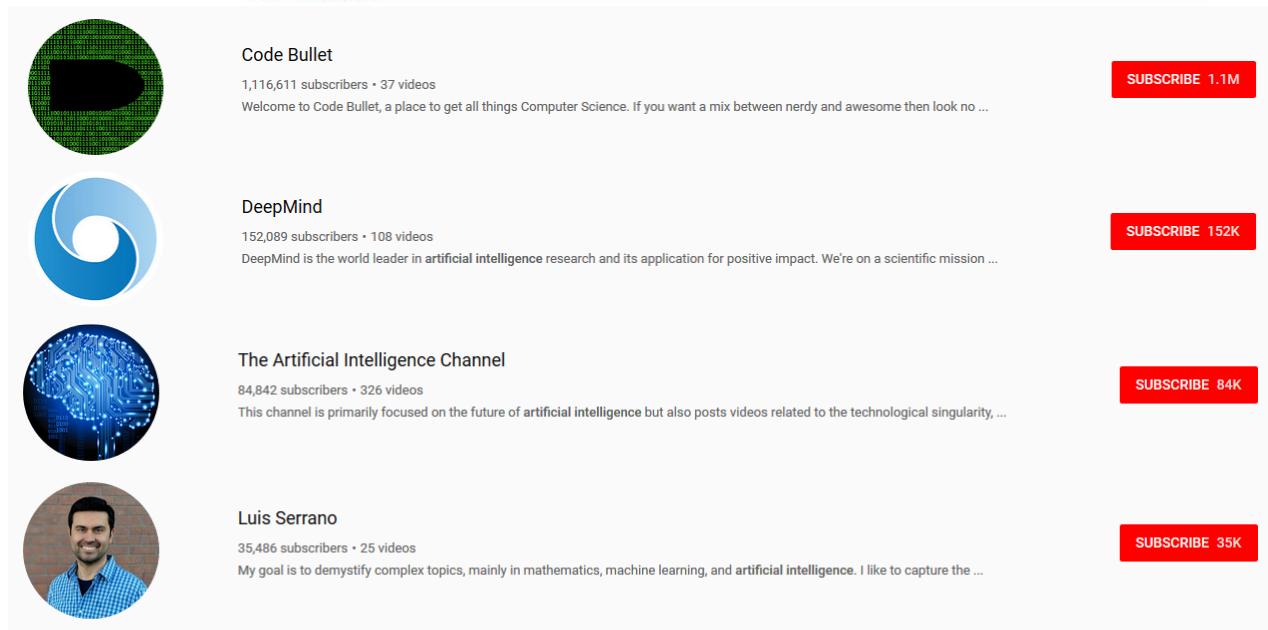
Figure 14

YouTube search can be limited, hence it would be worth combining its results with those of a Google advanced search. Go to [Google advanced search](#), fill the search box 'Any of these words' with the **keywords** you selected, select **your language**, and add "**YouTube.com/user**" in the search box 'site or domain' (see Figure 14). DO NOT select your country because YouTube does not have a version for each country.

Figure 15

Vimeo

To search for users on Vimeo, type one keyword at a time on the Vimeo search bar on the top right (as you did on YouTube).

Then, select the option "Channels" from the Menu 'Show results for' on the left (see Figure 16). Channels are similar to YouTube Playlists, they are a collection of topical videos.
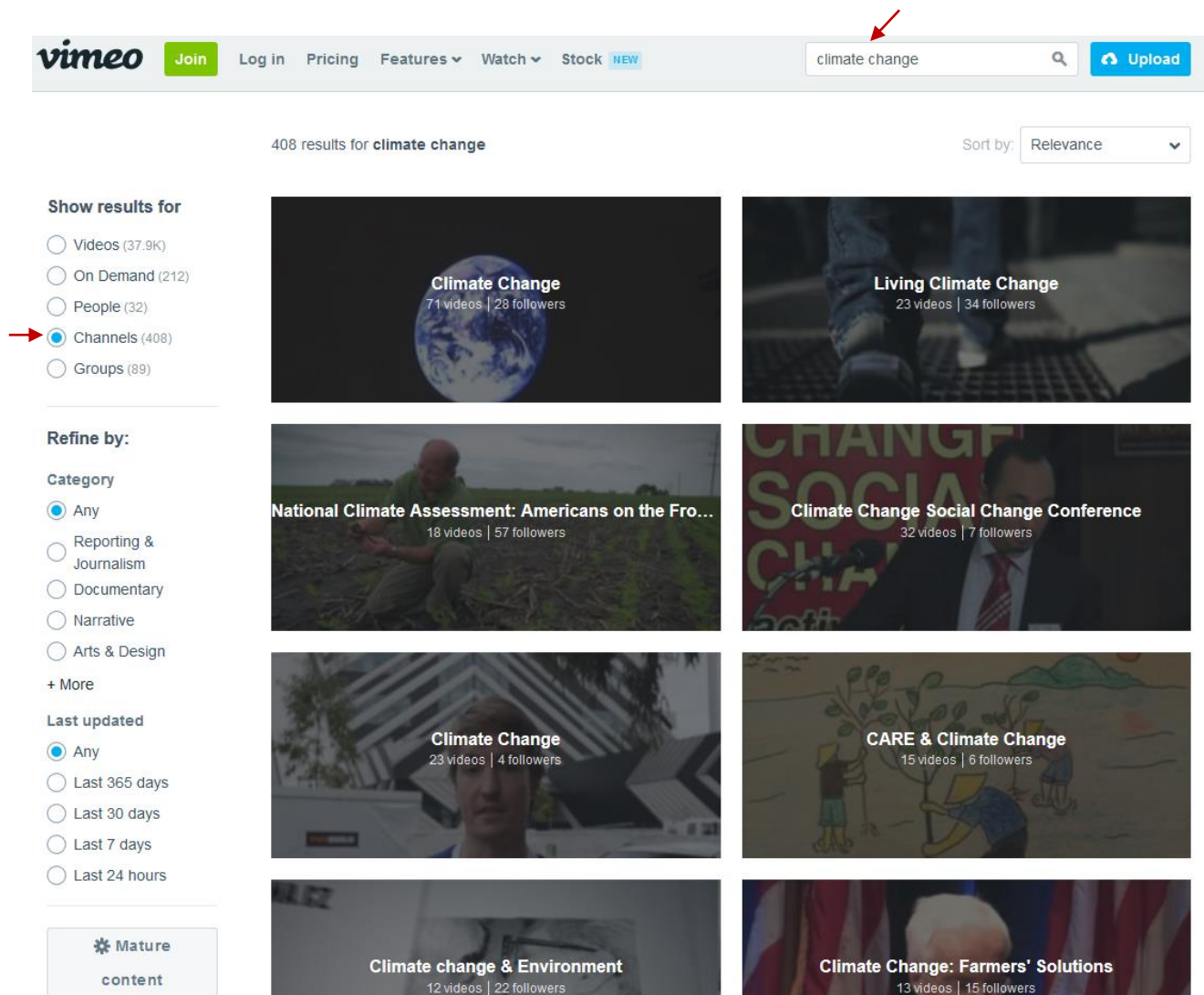
Figure 16

Click on a relevant channel and then on the user that created it (see Figure 17). Check if the shared videos and the user match the criteria defined in Section 5 and those defined in the *Inclusion Criteria* file.
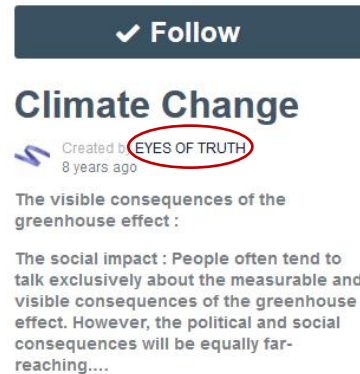
Figure 17

As YouTube, Vimeo search can be limited, hence it would be worth combining its results with those of a Google advanced search. Go to Google advanced search, fill the search box 'Any of these words' with the **keywords** you selected, select **your language**, and add "**Vimeo.com/channels**" in the search box 'site or domain' (see Figure 18). DO NOT select your country.

Remember to collect data only from the users who speak your language and are from your country.

Find pages with...

all these words:

this exact word or phrase:

any of these words: "climate change" "global warming"

none of these words:

numbers ranging from: to

Then narrow your
results by...

language: English   ▾

region: any region   ▾

last update: anytime   ▾

site or domain: vimeo.com/channels/*

terms appearing: anywhere in the page   ▾

SafeSearch: Show most relevant results   ▾

file type: any format   ▾

usage rights: not filtered by licence   ▾

                                                        Advanced Search

Figure 18

4.6. Searching online forums

To search for online forums, use again Google advanced search.

You can complete the form as you did for Facebook, adding in the search box "site or domain" the URL of the forum you want to explore (e.g. Quora.com). Follow the steps below:

- Fill the search box 'Any of these words' with the keywords you selected
- Fill the search box 'site or domain' with the URL of the forum
- Select your language under the search box 'Language'

Figure 21 shows an example on how to fill the advanced search for Quora.

Find pages with...

all these words:	
this exact word or phrase:	
any of these words:	"climate change" "global warming"
none of these words:	
numbers ranging from:	to

Then narrow your results by...

language:	English
region:	any region
last update:	anytime
site or domain:	quora.com/topic
terms appearing:	anywhere in the page
SafeSearch:	Show most relevant results
file type:	any format
usage rights:	not filtered by licence

Advanced Search

Figure 19
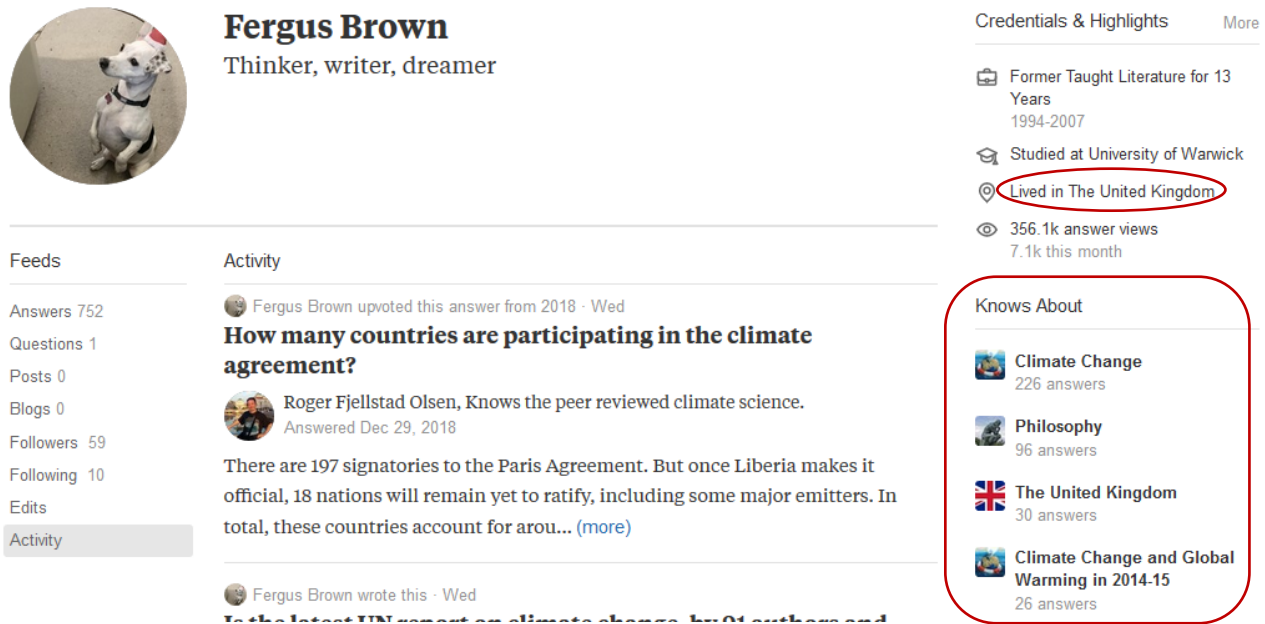
In the case of Quora, it is better to write "Quora.com/topic" in the search box 'site or domain'. In Quora, topics are aggregations of conversations on the same theme.

Click on a conversation that seems relevant, than on the users that live in the country (you should see this detail in their biography). Then check who the users are and what their expertise is. Their expertise is defined in the menu 'Knows about' on the left, which shows the topics they answered and how often their contributed to these topics (see Figure 22).

Fergus Brown
Thinker, writer, dreamer

Credentials & Highlights   More

Former Taught Literature for 13 Years
1994-2007

Studied at University of Warwick

Lived in The United Kingdom

356.1k answer views
7.1k this month

Feeds   Activity

Answers 752
Questions 1   Fergus Brown upvoted this answer from 2018 · Wed
Posts 0   **How many countries are participating in the climate**
Blogs 0   **agreement?**
Followers 59   Roger Fjellstad Olsen, Knows the peer reviewed climate science.
Following 10   Answered Dec 29, 2018
Edits
Activity   There are 197 signatories to the Paris Agreement. But once Liberia makes it
                     official, 18 nations will remain yet to ratify, including some major emitters. In
                     total, these countries account for arou... (more)

                         Fergus Brown wrote this · Wed

Knows About

Climate Change
226 answers

Philosophy
96 answers

The United Kingdom
30 answers

Climate Change and Global
Warming in 2014-15
26 answers

Figure 20

4.7 Searching podcasts

To search for podcasts, use Google advanced search and fill the search boxes as follow:

- Fill the search box 'All these words' with the word "podcast"
- Fill the search box 'Any of these words' with the keywords you selected
- Select your language under the search box 'Language'
- Select your country under the search box 'Region'.

Figure 23 shows an example of how to complete the form.

Find pages with...

all these words:	podcast
this exact word or phrase:	
any of these words:	"climate change" "global warming"
none of these words:	
numbers ranging from:	to

Then narrow your results by...

language:	English
region:	United Kingdom
last update:	anytime
site or domain:	
terms appearing:	anywhere in the page
SafeSearch:	Show most relevant results
file type:	any format
usage rights:	not filtered by licence

Advanced Search

Figure 21

In this way, it is possible to search for podcasts uploaded on any publicly accessible platform. Some platforms, such as Spotify.com, allow access to the podcasts only to their subscribers and they will not appear in the results of this type of search.

5. Selection of the users (individuals/institutions)

When you search a platform, you will find many **users** that share content on the topic. Among these users, select those that are identifiable (i.e. provide a biography or description of who they are) and satisfy the following criteria:

- **Geographical reach**

  Select users that communicate in <u>your language</u>.

  It would be better if these users are based in your country as well. You can find this information if they share their location on the account profile.

- **Active accounts**

  Include users who have an active account or website. You can find this information on the bottom of the webpage of a website, or by looking at the last post published on a social media account or blog. If the user has not used the platform since April 2018, do not include them.

- **Content characteristics**

  Include users that share content on one of the three topics, in a way that's freely available and public. The topic must be the *central element* of the content, it should not be an introduction to other content, a metaphor or an analogy.

  Exclude users that publish content on *how* to communicate the topics or STEMM, or on science communication research.

  Include users that share textual, visual and/or audio content, digital collections, comics, or infographics. Exclude users that share movies or documentaries. See the Glossary to see the type of content that users to include should share.
  Exclude users that clearly share only educational or academic content (e.g. a video lecture, the link to the live-streaming of a conference, the screenshot of a paper, an academic publication).

- **Account popularity/engagement**

  Aim to include users that <u>engage</u> with their audience over than ones that do not.

  A user sharing a high number of posts/articles, having a high number of readers/followers, likes/favourites, shares, and comments, is more likely to have a regular and/or engaged audience than one with a low number. For example, a user that rarely publishes and does

not receive any comments or shared on their post, is unlikely to have a regular audience and to engage with them.

- **Audience**

  Users can communicate to audiences of any size, either broad audiences or niche audiences. However, it is more likely that you will find users with broad audiences than those reaching small ones because the APIs of the media tend to favour the former.

  The audiences of these users may have any background, social class, education level, ethnicity and gender, and they should be interested in at least one the three topics (climate change, artificial intelligence, healthy diets), but not necessarily in STEMM.

- **Accessibility and availability**

  Select only users with a <u>public account or website/blog</u> that you can find by searching a search engine or the platform.

  If the users have a public account, they consciously share content to everybody with access to the platform or the Internet. If they have a private account, they may share confidential content and it would not be ethical to collect data on them.

When you identify a user that satisfies the criteria above, record their data in the Excel document *Mapping template*. You may find many users that satisfy those criteria but aim to select maximum 10 of them for each category of *Individuals* and *Institutions*. These categories are:

- Institutions
  - Universities
  - Research Centres
  - Research Funding Bodies
  - Scientific Societies
  - Science Museums & Science Centres
  - Industries/Companies
  - Non-Governmental Organisations, Civic Society Organisations, Think Tanks and Foundations
  - Media organisations
  - Local/National Governments
- Individuals
  - Scientists
  - Health practitioners
  - Curators

- o Activists/Pressure group staff
- o Journalists
- o Press officers/Communication officers (also public engagement officers)
- o Amateur science communicators
- o Online video makers
- o Policy makers
- o Support communities

See the *Individuals* and *Institutions* sections in the Glossary for a detailed description of each of these categories. If there are not one or more of those categories in your country (e.g. there are not scientific societies in your country), you can avoid searching for them. If that happens, please send us a note about it. Focus on the *Individuals* and *Institutions* that are present in your country. If you are not sure whether a user fits the description of a category, please contact us.

Choose a maximum 10 top users for each category, i.e. the users you came across first during your search. Exclude any promoted users from your selection, whose content or profile show the tag "promoted" or "ad". These users pay the platform to have their content or profile displayed at the top of the search results.

If you cannot find 10 users for one category, select only those you have found. This situation can arise, and it is not a problem. Select only users that satisfy the criteria above.

To help you collect data on the users, we developed a template in Excel (see *Mapping template*). You will need to complete following data about each user you select:

- **User Name** – the real name of the individual or institution you selected; if the real name is not available, you can consider their moniker (nickname)

- **Individual/Institution** - the category to which your user belongs (see Glossary, *Individuals* and *Institutions* sections)

- **Platform** – the platform where you found the user (e.g. Twitter, Website, YouTube)

- **URL** – web link of the profile account or website/blog of the user

- **Number of readers** – how many readers or followers the users have (if provided)

- **Topic** – what topic the user communicates (i.e. Climate Change, Artificial Intelligence, Healthy Diet)

- **Email address** – email address of the user (if provided)

- **Date collection** – when you collected the data about this user

- **Description of the nature of content** – provide a brief description (maximum 50 words) of the nature and format of the content shared by the user (see Glossary).

Section 6 provides an example of how to fill the *Mapping template*.

When you identify a potential individual/institution to include in the mapping, check if they have any other accounts. For example, if the user has a website, they may also have a Twitter or Facebook account connected to it. Explore each link and see if these accounts are active. If they are, you can include these data in the spreadsheet.

You can find if a user has connected other accounts to the platform in the following ways:

- If the platform is a website, you will find the icons of the connected social media on a corner on the top or at the bottom of the home page. You may also find them at the page "Contact".
- If the platform is a social media or social network, you will find the links to the other accounts on the page "About" (e.g. on Facebook), or as a link on the bottom of the profile biography (e.g. Twitter and Instagram), or as icons on the banner (e.g. YouTube)

Do not make a note of those accounts or sites that do not meet the inclusion criteria. Sometimes the same individual/institution can share different content depending on the platform.

6. Example

In the section, I will show an example of how I applied the protocol.

First, I opened a browser I had not used before (you can use the same browser you normally use, but you should clean the browsing history at least). Then, I decided to search for British blogs about climate change and I followed the steps described in Section 4.2. I opened Google advanced search and I filled the search boxes as shown below.

Find pages with...

all these words:	blog
this exact word or phrase:	
any of these words:	"climate change" "global warming"
none of these words:	
numbers ranging from:	to

Then narrow your results by...

language:	English
region:	United Kingdom
last update:	anytime
site or domain:	
terms appearing:	anywhere in the page
SafeSearch:	Show most relevant results
file type:	any format
usage rights:	not filtered by licence

Advanced Search

You can run parallel searches of different platforms or focus on one and when you cannot find material, move to next one. For clarity, here I will describe how to search only one platform.

From the search mentioned above, Google returned several results - some of those are shown in the following screenshot.

Google   blog "climate change" OR "global warming"   🎤 🔍

All   News   Images   Videos   Shopping   More   Settings   Tools

Search English pages ▾   Any time ▾   All results ▾   Clear

🛡 A privacy reminder from Google

REMIND ME LATER   REVIEW

Geology vs. climate change | Geological Society of London blog
https://blog.geolsoc.org.uk/2019/02/04/geology-vs-climate-change/ ▾
4 Feb 2019 - To reverse our current trajectory towards dangerous **climate change**, ... it is unlikely we will be able to meet our future **global warming** targets.

Blogs - Committee on Climate Change
https://www.theccc.org.uk/category/blogsterm_title-page-sep-sitename/ ▾
10 Sep 2018 - Low-carbon heating is amongst the toughest challenges facing climate policy. Mike Hemsley, Senior Power Analyst at the Committee on ...

The A to Z of Climate Change - WWF UK Blog
https://blogs.wwf.org.uk/blog/climate-energy/z-climate-change/ ▾
7 Sep 2016 - I hope you find this A-Z of **climate change** inspiring and informative. ... weather patterns and **global warming** is the long-term trend of rising ...

BBC - Climate Change: The Blog of Bloom
https://www.bbc.co.uk/blogs/climatechange/food_and_cooking ▾
A suprising **blog** from the Bloom team about **climate change** and the things people are saying and doing about it.

Climate change | Inside track - Green Alliance's blog
https://greenallianceblog.org.uk/category/climate-change/ ▾
Posts about **Climate change** written by Melissa Petersen, Paul McNamee, Jim Elliott, Green Alliance **blog**, Libby Peake, and Chaitanya Kumar.

Climate Change Archives - Historic Environment Scotland Blog
https://blog.historicenvironment.scot/category/climate-change/ ▾
Category: **Climate Change** ... 26 October 2018, **Climate Change** · glass cup with white lid and logo ... Scotland's **Climate Change** Challenge. 15 January 2018 ...

The first link shown in the results brought me to the blog of a Geological Society.
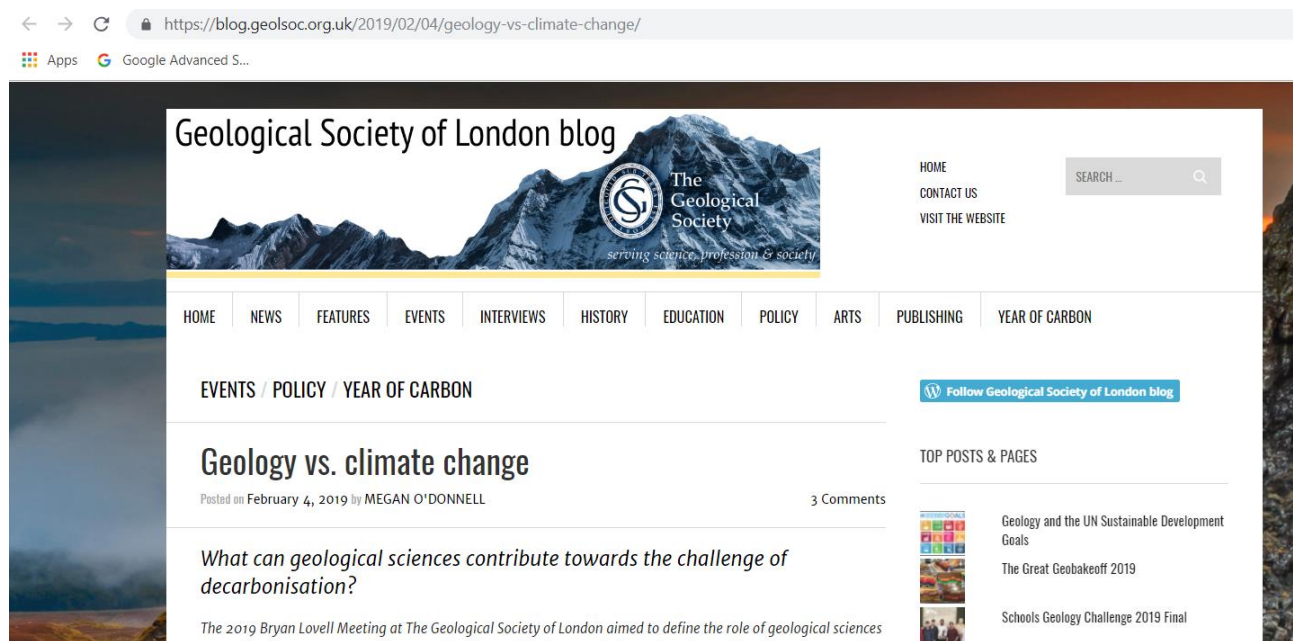
My first question was: Is this institution British? Because of the advanced search I did and the name of the society, I could assume so.

My next question was: Does this institution publish content that follows the inclusion criteria? E.g. Is the content written in English? Does it communicate climate change? Is it not educational? To answer this, I read a few of the posts published in the Home page and in the other sections. Most of the articles and features were not about climate change, and those that did mention climate change did so incidentally,focusingon geology instead. The inclusion criteria state that the content should focus on the topic; therefore, I excluded this institution and I moved to another one.

The next blog is hosted by the BBC, but there is a notice saying that is not active anymore. Hence, I excluded it from the data collection.

The next blog I analysed, was run by the Campaign against Climate Change. The last post was published this month; hence, the blog is still active.

In the "About us" page, I found out that they are an activist group. Since they are a formal organisation with a steering committee, I could include them in the category *NGOs, CSOs, Think Tanks and Foundations* (see Glossary). Most of the members of the committee say they are based

in the UK, and in the Contact section they provided an address in London. Therefore, I could say this organisation is based in the UK.

The blog has a section "Climate Change", so I read some of the posts they published there. They offer a few explanatory articles on climate change and climate change misinformation, as well as further linked resources to visit. The "News" section provides news articles on their protests, but also on how specific events (e.g. Bristol Airport expansion) can increase the pollution and affect the climate. Therefore, the content published in this blog follow the content characteristics criteria mentioned in Section 5.

The blog does not have plugins showing the number of visualisations or shares of each post, so I could not access that information. However, the blog of the Campaign against Climate Change (and the institution as well) matches the inclusion criteria and I could include it in my mapping file.

I filled the boxes in the *Mapping template* document as shown below.

D6								
	A	B	C	D	E	F	G	H	I
1	User Name	Individual/Institution	Platform	URL	n° readers/followers	Topic	Email address	Date collection	Content description (50 words)
2	Campaign against Climat	NGO &CSO	Blog	https://www.campaig	NA	Climate Change	info@campaign	18/04/2019	There is a section about climate cha
3									
4									

In the box "n° readers/followers" I wrote NA (Not Applicable) because I could not find this information. In the "Date collection" I wrote the date when I collected these pieces of information. Please you the same format: dd/mm/yyyy.

In the "Content description" box I simply wrote: "There is a section about climate change with explainer and debunking articles that include pictures and graphs. The News section has news articles with images".

You do not need to write a long description. Mention what nature of content you found (i.e. News, Comments/Opinions, Feature/Long-form writing, Storytelling, Debunking, SciArt, Humour, Explainer – see Glossary) and recurrent formats of content (i.e. Text, Videos, Still images, Audio, Digital collections, Comics, Infographics – see Glossary).

After this, I checked if the Campaign against Climate Change uses other platforms. On the top left of the page, there are a Facebook and a Twitter icon. I clicked on each and evaluate if the content published in both sites matches the inclusions criteria.

In the Facebook page, the organisation mainly posts about the campaigns, but they also share articles from the blog and articles from other CSOs or NGOs and media organisations. Some of the articles are about climate change, so I decided to include this Facebook page in the mapping. I checked the links *Posts*, *Photos* and *Videos* to see the format and nature of content that the

institution shares on their Facebook page.

The institution shares even more news on climate change on the Twitter account, though written by media organisations. Therefore, I included it in the mapping.

Then, I checked the tab *Media* to see the format of content that the institution shares on Twitter.

I filled the Excel file with the new data I found, as shown below.

User Name	Individual/Institution	Platform	URL	n° readers/followers	Topic	Email address	Date collection	Content description (50 words)
Campaign against Climat	NGO &CSO	Blog	https://www.campaig	NA	Climate Change	info@campaign	18/04/2019	There is a section about climate cha
Campaign against Climat	NGO &CSO	Twitter	https://twitter.com/c	8652	Climate Change	info@campaign	18/04/2019	They share still text, images and vide
Campaign against Climat	NGO &CSO	Facebook	https://www.faceboo	8531	Climate Change	info@campaign	18/04/2019	They share still text, images and vide

In the cell "n° readers/followers", I wrote the number of <u>followers</u> the institution has on Twitter and on Facebook. I did not consider the number of likes on Facebook.

In the content description, I wrote the type and nature of the original content shared by these two accounts. I also added a note on the type of shared content, i.e. content that was not created by the institution, but retweeted or posted by them on their accounts.

For Twitter, I wrote "They share still text, images and videos, but also comics and graphs (though not infographics). Most of their original content is call to actions and news about the protest they organised. Their shared content includes news articles".

For Facebook, I wrote "They share still text, images and videos, and graphs (though not infographics). Most of their original content is news about the protest they organised or calls to participate. Their shared content includes news articles".

Then, I moved to the next blog.