PROTOCOL 1

How do weather forecast agencies represent climate change when they are explicitly asked to?

Data collection

Protocol 1 analyses the series of imaginary future weather forecasts produced by well-known media companies all over the world at the request of the WMO (World Meteorological Organization).

The 63 total reports were first retrieved through the WMO YouTube Channel, then mapped and downloaded for further analysis.

SOURCES

Between 2014 and 2018 The WMO asked media companies all over the world to produce imaginary weather reports from the future, with the purpose to sensitise people about the local impacts of climate change and support important conferences and summits regarding climate policies. There are 62 videos organised in 5 series, plus one extra (for a total of 63 reports).

Each of the series 1-4 is connected to a specific international summit on political responses to the climate crisis. The videos are designed as imaginary - but realistic - 2050 weather reports from well-known television presenters illustrating the likely consequences of a business-as-usual approach to emissions.

Series 5 is the result of a collaboration between the WMO and the NGO *Climate Central*, and the videos explore how climate change may affect summer heat in major cities worldwide by the end of the 21st century. While Climate Central came up with the general concept, the reports were still produced by weather forecast companies all over the world.

The extra report was the last one to be released, produced by the Hungarian National Meteorological Service and designed with the 2050 weather format.

SERIES	RELEASE	VIDEOS	FORMAT	CONTEXT
1	09/2014	14	Weather Report 2050	Climate Summit 2014
2	12/2014	6	Weather Report 2050	Lima COP20
3	03/2015	7	Weather Report 2050	UNWC Disaster Risk Reduction
4	11/2015	22	Weather Report 2050	Paris COP21
5	07/2017	13	Summer 2017-2100	Climate Central collaboration
extra	06/2018	1	Weather Report 2050	none

SELECTION

The reports are all available in different languages on the WMO YouTube channel, gathered in a playlist named "Weather Reports for the future / Climate Change". A single version of each report was selected (English spoken one if it exists, otherwise with English subtitles) and a playlist with the 63 videos was created. Then all of them were downloaded with set quality (720p) and format (mp4). A spreadsheet, mapping key metrics for each report, was also manually compiled (**Dataset P1_reports**).

DATASETS

YouTube Playlist

Including the selected 63 reports (English spoken version if it exists, otherwise with English subtitles).

Dataset P1_reports

Spreadsheet with detailed information for each selected report, manually extracted from YouTube.

Texts

The speech from all the reports was first extracted from the videos and converted into written text, then translated to English (when in a different language) in order to allow comparison.

TRANSCRIPTION

A custom Python script based on *SpeechRecognition* was used to extract the dialogues from each report and convert them into written text. In order to get an accurate transcription, for each video the language to extract was set before running the code. A few videos included more than one language: in those cases, the text was extracted once for each language, then the transcriptions were manually merged.

Almost all videos end with a final speech from representatives of the promoters (either WMO officials or the mayor of Mexico City, depending on the series), discussing the general purpose of the reports. Because of the differences in both the producers and the purpose, the transcriptions of these final speeches were separated from the transcriptions of the actual future weather reports.

All the transcriptions were organised in a spreadsheet, indicating for each text:

- the video from which it was extracted;
- the language in which it's written;
- whether it belongs to a report or to a final speech.

TRANSLATION

A custom Python script based on *GoogleTrans* was used to translate all the extracted texts into a single language: English. The code ran through the spreadsheet mentioned above and saved the translations into a new csv file.

Each row of the csv file (`Dataset P1_translations`) includes both:

- the original transcription;
- its translation to English.

And for each translation it indicates:

- the video from which it was extracted;
- the language from which it was translated;
- whether it belongs to a report or to a final speech.

DATASET

`Dataset P1_translations`

Spreadsheet resulting from the transcription and then translation of the reports' speech.

Tag clouds

The analysis of translated transcripts started with detecting the predominant words in the reports, and later visualising them with sizes proportional to their frequencies.

WORD COUNT

A Python-based tool was used to process a word count on the translated transcript of each report. The following conditions were set:

- Language → English;
- Custom stopwords → *Climate, Change;*
- Text from final speeches excluded;
- Saved words → most frequent 500.

The tool was also run on merged translations from all reports, twice:

1. Excluding all final speeches, with the following conditions:
   - Language → English;
   - Custom stopwords → *Climate, Change;*
   - Saved words → most frequent 500.
2. On final speeches only, with the following conditions:
   - Language → English;
   - Custom stopwords → *Climate, Change;*
   - Saved words → most frequent 100.

For each word count process the tool produced a csv file with the list of most frequent words, their rank and their frequency. After processing, all words with a frequency of 1 were manually deleted, since not relevant.

TAG CLOUDS

The tag cloud generator tool from *Digital Methods Initiative* was used to create tag cloud visualisations out of all the word counts. From each word count list the generator produced an svg file in which the text sizes are associated to absolute frequency ranges (e.g. 61-65 times → 18px).

INDIVIDUAL ↔ MERGED

The purpose of individual reports' tag clouds is to give an horizontal mapping of the words used in each report. On the other hand, the merged texts' tag clouds provide insights on general trends and patterns.

REPORT ↔ FINAL SPEECH

Differentiating between the report (produced by a specific media company) and the final speech (produced by the promoters of the initiative, either the WMO or Climate Central) allows to analyse how the intentions expressed by the promoter have been interpreted by the presenters in the actual reports.

P1 → TEXTS → TAG CLOUDS → VIZ 01

The following visualisation shows all tag clouds from individual reports, grouped according to the report series. Inside each series the reports are ordered on the basis of their duration (from the shortest to the longest - final speech excluded).

The proportion between word frequency and text size is consistent for all tag clouds inside the following visualisation, but it is different from the proportion in corresponding visualisations of protocol 2 and 3 (`P2 → texts → tag clouds → viz 01` and `P3 → texts → tag clouds → viz 01`).

The visualisation is designed as follows:

SERIES		
Report ID	Duration	CONTINENT → [FLAG]
[Tag cloud]		

SERIES	1 to 5 plus extra
Report ID	In the format: ISOCountryCode_seriesIdentifier
Duration	Final speech excluded
CONTINENT	Of production
[FLAG]	Country of production
[Tag cloud]	Each word followed by its absolute frequency

SERIES 1 - Climate Summit 2014

DE_CS14 2:19 min EUROPE →

degrees (7) will (7) us (4) look (3) weather (3) saxonyanhalt (2) night (2) values (2) around (2) comes (2) pleasant (2) sea (2) great (2) heat (2) come (2) also (2) can (2) black (2) 7 (2) situation (2) evening (2) welcome (2) storms (2) heavy (2) hand (2)

ZA_CS14 3:14 min AFRICA →

also (8) cape (7) province (6) just (6) along (5) well (5) look (5) places (5) see (5) conditions (4) now (4) will (4) western (4) coming (4) expected (4) expect (4) heavy (4) rainfall (4) lead (4) dry (3) weather (3) south (3) expecting (3) time (3) possibilities (3) severe (3) flooding (3) mozambique (3) seem (2) like (2) africa (2) much (2) us (2) actually (2) 2015 (2) terms (2) feel (2) chance (2) hot (2) risk (2) short (2) 2014 (2) closely (2) vulnerable (2) even (2) need (2) path (2) get (2) lots (2) lot (2) part (2) track (2)

ZM_CS14 3:23 min AFRICA →

degrees (6) parts (5) country (5) temperatures (5) weather (4) forecast (4) continue (4) will (4) southwestern (3) expected (3) drought (3) range (2) can (2) impact (2) people (2) us (2) action (2) water (2) food (2) time (2) morning (2) today (2) northern (2) sunny (2) ranging (2) 4 (2) celsius (2) likely (2) years (2) major (2)

BR_CS14 3:29 min SOUTH AMERICA →

brazil (9) rain (5) professor (4) events (4) already (4) another (3) see (3) amazon (3) average (3) will (3) three (3) type (2) way (2) able (2) hello (2) impacts (2) predicted (2) everything (2) now (2) scenario (2) good (2) south (2) 2050 (2) heavy (2) regions (2) days (2) month (2) also (2) northeast (2) country (2) weather (2) without (2) hot (2) degrees (2) coming (2) decades (2) state (2) declared (2) increase (2)

DK_CS14 3:27 min EUROPE →

also (6) precipitation (6) heavy (5) thunderstorms (5) weather (4) events (4) risk (3) extreme (3) northern (3) europe (3) giving (3) look (2) small (2) may (2) temperature (2) rise (2) forecast (2) special (2) seen (2) 2nd (2) july (2) copenhagen (2) morning (2) still (2) area (2) warm (2) denmark (2) developing (2) move (2) exactly (2) energy (2) just (2) stronger (2)

US_CS14b 3:35 min NORTH AMERICA →

expected (6) time (6) now (5) far (4) offshore (4) hurricane (4) just (4) degrees (4) kyle (4) days (4) problem (3) flooding (3) miami (3) course (3) weather (3) us (3) big (3) first (3) away (3) shower (3) thunderstorm (3) activity (3) end (3) years (3) 95 (3) year (3) going (2) beach (2) water (2) rise (2) midcentury (2) know (2) deep (2) locations (2) getting (2) earlier (2) 1in (2) 100year (2) weekend (2) south (2) florida (2) even (2) 90s (2) today (2) will (2) get (2) night (2) way (2) sure (2) bahamas (2) north (2) matter (2) seem (2) come (2) extreme (2) quite (2) century (2) close (2)

IS_CS14 3:43 min EUROPE →

will (14) iceland (7) weather (5) last (4) ocean (4) also (4) take (4) consequences (3) effects (3) likely (3) sea (3) warmer (3) species (3) see (3) places (3) temperatures (3) rain (3) believe (2) 200 (2) years (2) slowly (2) temperature (2) continue (2) done (2) future (2) warming (2) system (2) life (2) example (2) supply (2) food (2) days (2) higher (2) forecast (2) northeast (2) still (2) degrees (2)

US_CS14a 4:02 min NORTH AMERICA →

now (6) going (4) offshore (4) will (4) temperatures (4) go (3) mega (3) thanks (3) september (3) miami (3) heat (3) miles (3) storm (3) arizona (2) us (2) last (2) dry (2) years (2) get (2) cities (2) mexico (2) new (2) running (2) come (2) arctic (2) time (2) summer (2) channel (2) look (2) today (2) hurricane (2) still (2) south (2) beach (2) chicago (2) record (2) temperature (2) let (2) jim (2) cantore (2) water (2) 4 (2) many (2) even (2) like (2) right (2) day (2) fall (2) hottest (2) degrees (2) game (2)

BG_CS14 5:03 min EUROPE →

earth (7) weather (7) temperature (6) time (5) one (4) can (4) increase (4) half (4) will (4) go (3) water (3) us (3) space (3) degree (3) years (3) live (3) times (3) open (3) may (2) late (2) make (2) hand (2) around (2) come (2) known (2) nothing (2) see (2) gases (2) greenhouse (2) heat (2) back (2) returns (2) even (2) put (2) stop (2) warming (2) serious (2) average (2) seem (2) much (2) sick (2) today (2) country (2) keep (2) bulgaria (2) talking (2) last (2) air (2) say (2) humans (2) energy (2) whether (2) ask (2)

TZ_CS14 3:40 min AFRICA →

including (5) country (4) will (3) temperature (3) can (3) see (3) due (3) also (3) going (3) people (3) best (3) morning (2) showers (2) areas (2) different (2) completely (2) silver (2) biggest (2) problem (2) practises (2) use (2) energy (2) sources (2) green (2) beautiful (2) using (2) start (2) errors (2) thank (2) much (2) likely (2)

BF_CS14 5:13 min AFRICA →

degrees (13) burkina (8) therefore (8) will (7) precipitation (6) also (6) system (5) 2050 (5) country (5) can (5) temperatures (5) faso (5) sector (4) territory (4) means (4) around (4) health (3) 28 (3) heavy (3) dory (3) gaoua (3) boromo (3) bobodioulasso (3) agriculture (3) phenomenon (3) observed (3) zone (3) mm (3) water (3) still (3) yes (2) particular (2) thank (2) known (2) organized (2) loaded (2) region (2) pau (2) flooding (2) 29 (2) ouagadougou (2) 26 (2) near (2) mention (2) go (2) us (2) 1 (2) floods (2) thousands (2) year (2) 2000 (2) 2050s (2) extreme (2) probability (2) drought (2) reality (2) risk (2) 34 (2) major (2)

BE_CS14 5:18 min EUROPE →

will (14) also (6) showers (5) wet (4) can (4) rain (4) now (4) get (4) still (4) air (4) water (3) really (3) christmas (3) 2050 (3) winter (3) lot (2) time (2) storms (2) hail (2) thunderstorms (2) know (2) want (2) year (2) new (2) cause (2) day (2) country (2) dry (2) least (2) degrees (2) long (2) already (2) warmest (2) warmer (2) just (2) 14 (2) respond (2)

JP_CS14 5:43 min ASIA →

will (12) number (4) typhoon (4) japan (4) temperature (4) continue (3) meters (3) 10 (3) around (3) typhoons (3) rise (3) 2050 (3) due (3) autumn (3) never (2) stop (2) people (2) increases (2) nhk (2) issue (2) various (2) super (2) sea (2) wind (2) storm (2) surges (2) outages (2) become (2) serious (2) strong (2) possible (2) time (2) weather (2) september (2) heat (2) tokyo (2) summer (2) years (2) see (2) leaves (2) kyoto (2) year (2) okinawa (2)

PH_CS14 6:34 min ASIA →

will (9) also (7) nation (7) ruby (5) possible (5) philippines (5) knowledge (4) still (4) according (4) natural (4) can (4) areas (4) especially (3) things (3) make (3) us (3) infrastructure (3) means (3) build (3) need (3) typhoon (3) pagasa (3) sea (3) morning (3) storm (3) resources (3) generation (3) great (3) signal (3) may (3) country (3) average (3) long (2) way (2) find (2) intersection (2) science (2) experience (2) emanates (2) grassroots (2) cubicle (2) indigenous (2) farmers (2) know (2) really (2) happening (2) existential (2) question (2) existence (2) steak (2) sense (2) fitting (2) preparation (2) issues (2) option (2) better (2) corruption (2) building (2) rollsroyce (2) phantom (2) 12 (2) standard (2) extreme (2) events (2) course (2) eliminating (2) leakage (2) funds (2) use (2) closer (2) kilometers (2) per (2) hour (2) mindanao (2) tomorrow (2) five (2) patient (2) care (2) one (2) made (2) number (2) 4 (2) surge (2) rise (2) cause (2) severe (2) flooding (2) strongest (2) systems (2) taking (2) affect (2) fishing (2) world (2) storms (2) recorded (2) global (2) cm (2)

SERIES 2 - Lima COP20

CA_COP20 3:15 min NORTH AMERICA →

will (11) water (4) now (4) days (4) side (3) british (3) columbia (3) day (3) rain (3) atlantic (3) precipitation (3) receive (3) mm (3) say (3) drought (3) prairies (3) octave (3) evening (2) magdalen (2) islands (2) decades (2) also (2) rising (2) lot (2) flooding (2) already (2) see (2) northwest (2) passage (2) north (2) saw (2) without (2) passing (2) 20 (2) many (2) month (2) 100 (2) just (2) heat (2) wave (2) take (2) smoke (2) forest (2) fires (2) south (2) ontario (2) follow (2) hurricane (2) winds (2) bulletin (2)

NO_COP20 3:40 min EUROPE →

will (14) snow (7) weather (6) days (6) can (6) norway (5) also (5) 2050 (5) now (4) christmas (4) like (4) lot (3) meters (3) hit (3) expect (3) get (3) amounts (3) good (2) evening (2) first (2) winter (2) month (2) far (2) pictures (2) storm (2) way (2) see (2) year (2) strong (2) hurricane (2) last (2) country (2) hardest (2) central (2) severe (2) storms (2) rainfall (2) day (2) danger (2) avalanches (2) next (2) january (2) north (2) cabin (2) areas (2) huge (2) ski (2) probably (2) time (2) eastern (2) rain (2) many (2) may (2) degrees (2) summer (2) people (2) hot (2) hottest (2) contribute (2) improve (2)

FR_COP20 4:08 min EUROPE →

will (9) degrees (7) air (5) heat (4) wave (4) france (4) 2050 (3) lot (3) hot (3) disturbance (3) well (3) temperatures (3) tell (2) us (2) expected (2) august (2) september (2) recorded (2) land (2) remember (2) end (2) therefore (2) extremely (2) good (2) sun (2) still (2) much (2) cooler (2) behind (2) tomorrow (2) morning (2) veil (2) already (2) mass (2) 40 (2) 41 (2) 42 (2)

VN_COP20 4:59 min ASIA →

vietnam (9) area (8) level (6) storm (6) south (5) sea (5) flood (5) water (4) well (4) scientists (4) m (4) century (4) high (3) can (3) now (3) glass (3) factors (3) will (3) mm (3) whole (3) city (3) half (3) 30 (3) first (3) including (3) 1 (3) increase (3) submerged (2) life (2) land (2) gentle (2) place (2) big (2) shore (2) torrential (2) storms (2) poured (2) plus (2) 2 (2) like (2) continue (2) lasting (2) coming (2) days (2) year (2) data (2) vietnamese (2) weather (2) country (2) one (2) day (2) strong (2) times (2) cm (2) natural (2) changing (2) solutions (2) km (2) new (2) forests (2) rise (2) entire (2) impact (2) story (2) changes (2) hundreds (2) coastal (2) large (2) ho (2) chi (2) minh (2) tide (2) higher (2) beginning (2) 2014 (2) rain (2) flooded (2) time (2) results (2) may (2) end (2)

ES_COP20 5:39 min EUROPE →

temperatures (21) will (18) heat (10) days (10) maximum (8) continue (8) high (6) rise (5) also (5) degrees (5) mediterranean (5) values (5) today (5) 10 (5) even (4) 45 (4) minimum (4) night (4) next (4) spain (4) end (4) last (3) hours (3) large (3) part (3) above (3) much (3) country (3) especially (3) increase (3) wave (3) points (3) warm (3) increased (3) south (3) moment (3) day (3) warnings (2) said (2) maintained (2) come (2) exceed (2) hot (2) cantabrian (2) see (2) temperature (2) good (2) august (2) remain (2) although (2) talk (2) lot (2) communities (2) forecasts (2) already (2) two (2) years (2) number (2) center (2) waves (2) row (2) say (2) forecast (2) continues (2) drop (2) begin (2) enter (2) little (2) sleep (2) area (2)

PE_COP20 6:38 min SOUTH AMERICA →

today (10) will (7) water (7) part (6) good (5) raúl (5) let (5) rains (5) already (5) next (4) action (4) great (4) challenge (4) jungle (4) country (4) problem (3) us (3) take (3) suffering (3) phenomenon (3) years (3) peru (3) morning (3) temperature (3) also (3) severe (3) make (3) going (3) 2050 (3) consequences (3) companies (3) thank (3) minister (3) efficient (2) carbon (2) solve (2) better (2) generation (2) large (2) problems (2) turn (2) media (2) ambitious (2) el (2) niño (2) one (2) due (2) extreme (2) impacts (2) reason (2) seeing (2) glaciers (2) high (2) agriculture (2) especially (2) cities (2) coast (2) decisions (2) sea (2) loss (2) summer (2) five (2) cusco (2) southern (2) sierra (2) availability (2) catastrophic (2) measures (2) changes (2) mr (2) understand (2) act (2)

SERIES 3 - UNWC Disaster Risk Reduction

CU_UNWC 2:28 min NORTH AMERICA →

areas (4) years (4) higher (3) planet (3) since (3) hurricane (3) entire (2) earth (2) 1880 (2) level (2) think (2) look (2) 2050 (2) hurricanes (2) mean (2) also (2) much (2) really (2) see (2) hypothetical (2) temperatures (2) little (2) rain (2) lot (2) heat (2) recent (2) next (2) per (2)

SC_UNWC 3:15 min AFRICA →

season (5) degrees (4) celsius (4) also (4) island (3) effects (3) weather (3) dry (3) conditions (3) expecting (3) will (3) small (2) august (2) continue (2) persist (2) can (2) first (2) last (2) race (2) still (2) temperature (2) sunny (2) much (2) lot (2) flooding (2) landslides (2) tropical (2) effect (2) within (2) houses (2) trend (2) high (2) kmh (2) times (2) next (2) according (2) wet (2)

CL_UNWC 3:17 min SOUTH AMERICA →

degrees (5) heat (5) rain (4) open (4) intense (4) also (3) day (3) sky (3) interior (3) electricity (3) thermometers (3) rains (3) norte (2) grande (2) valleys (2) central (2) leaves (2) island (2) water (2) araucanía (2) magallanes (2) due (2) presence (2) cold (2) core (2) electrical (2) storms (2) floods (2) towards (2) 38 (2) coyhaique (2) maximum (2) will (2) clear (2) rationing (2) roof (2) wind (2) east (2) conditions (2) 39 (2) continues (2) stretch (2) forget (2) wave (2) affects (2)

GH_UNWC 3:21 min AFRICA →

fire (5) can (3) see (3) 10 (3) m (3) public (2) now (2) march (2) time (2) hamilton (2) weather (2) kmh (2) given (2) days (2) past (2) engine (2) today (2) start (2) atmosphere (2) going (2) range (2)

NG_UNWC 4:22 min AFRICA →

temperature (8) can (5) likely (5) increasing (4) trend (4) also (3) environment (3) future (3) country (3) atmosphere (3) global (3) degrees (3) energy (2) sources (2) like (2) safeguard (2) forecast (2) activities (2) conditions (2) humidity (2) shown (2) show (2) increase (2) continue (2) usually (2) part (2)

IT_UNWC 6:17 min EUROPE →

will (13) weather (7) next (6) air (5) force (5) meteorological (5) let (5) high (5) systems (5) intense (5) also (5) days (4) leonardo (4) expected (4) hours (4) water (4) already (4) service (3) conditions (3) data (3) good (3) stefania (3) now (3) energy (3) south (3) significant (3) phenomenon (3) yes (3) show (3) time (3) regions (3) hello (2) appointment (2) october (2) see (2) forecast (2) peninsula (2) usual (2) atmosphere (2) information (2) processing (2) center (2) morning (2) thanks (2) day (2) national (2) parameters (2) degradation (2) move (2) efficiency (2) activation (2) wind (2) production (2) week (2) images (2) available (2) possible (2) associated (2) frequent (2) short (2) adriatic (2) mainly (2) locally (2) strong (2) venice (2) foreseen (2) competent (2) authorities (2) episodes (2) well (2) archives (2) recorded (2) months (2) tuesday (2) present (2) sicily (2) cyclone (2) system (2) pressure (2) updates (2)

MG_UNWC 10:13 min AFRICA →

will (21) madagascar (12) also (11) part (8) cyclone (6) island (6) february (5) well (5) reality (5) celsius (5) come (5) region (5) time (5) global (5) already (4) dear (4) therefore (4) talk (4) warming (4) commitments (4) now (4) act (4) rain (4) alert (4) world (3) temperature (3) increase (3) cyclones (3) intensify (3) intense (3) tropical (3) weather (3) impacts (3) within (3) call (3) able (3) degrees (3) still (3) northern (3) notice (3) 17 (2) fortunately (2) lille (2) sun (2) years (2) found (2) 1 (2) degree (2) average (2) want (2) géralda (2) 2 (2) landed (2) viewers (2) evening (2) 2050 (2) show (2) 30 (2) level (2) timone (2) continue (2) risks (2) 2004 (2) bulletin (2) malagasy (2) future (2) high (2) government (2) made (2) priority (2) tangible (2) rainy (2) southern (2) point (2) framework (2) adapting (2) forecast (2) intergovernmental (2) panel (2) planet (2) citizens (2) limit (2) adapt (2) century (2) months (2) date (2) stormy (2) day (2) regions (2)

SERIES 4 - Paris COP21

IT_COP21 1:17 min EUROPE →

glaciers (3) world (3) mont (2) blanc (2) increase (2) temperature (2) one (2) last (2) century (2) will (2) heritage (2) sites (2)

CA_COP21a 1:29 min NORTH AMERICA →

canada (3) world (2) rocky (2) glacier (2) clearest (2) indications (2) retreat (2) western (2) going (2) respond (2) places (2) feeling (2)

CZ_COP21 1:37 min EUROPE →

will (11) today (3) january (3) tomorrow (3) snow (3) degrees (3) cloudy (3) sky (3) good (2) evening (2) start (2) two (2) days (2) skiing (2) practically (2) photos (2) also (2) czech (2) republic (2) morning (2) celsius (2) wind (2) day (2) clouds (2) even (2) weather (2)

IE_COP21 2:07 min EUROPE →

really (5) weather (4) ireland (4) will (4) perhaps (3) forecast (2) say (2) year (2) 2050 (2) pattern (2) coming (2) cold (2) many (2) going (2) turn (2) summer (2) help (2)

US_COP21a 2:25 min NORTH AMERICA →

will (5) forecast (4) north (4) right (3) ice (3) arctic (3) across (2) pole (2) going (2) east (2) whether (2) us (2) passengers (2) put (2) place (2) now (2) look (2)

MW_COP21 2:48 min AFRICA →

will (8) rains (4) like (4) areas (4) heavy (3) country (3) shire (3) valley (3) conditions (3) lake (3) shore (3) southern (3) weather (2) experienced (2) mzuzu (2) salima (2) parts (2) around (2) one (2) warm (2) continue (2) raining (2) expected (2) along (2) tomorrow (2)

CA_COP21b 2:58 min NORTH AMERICA →

will (9) obviously (6) going (5) degrees (4) hurricane (4) weather (3) lot (3) southern (3) quebec (3) moreover (3) years (3) one (3) temperatures (3) christmas (3) people (3) weeks (2) ontario (2) persists (2) autumn (2) know (2) thing (2) really (2) moment (2) 2000s (2) like (2) next (2) hours (2) especially (2) record (2) reached (2) end (2) increase (2) 3 (2) greenhouse (2) several (2) 11th (2) think (2) season (2) much (2) go (2) help (2) just (2)

DK_COP21 3:00 min EUROPE →

ice (7) will (3) active (2) world (2) dramatic (2) makes (2) north (2) water (2) surface (2) eyes (2) sea (2)

NZ_COP21 3:39 min OCEANIA →

today (6) south (6) fire (6) rain (5) just (5) drought (5) island (4) weather (4) north (4) ireland (4) now (4) showers (4) parts (4) warm (4) can (3) area (3) region (3) go (3) talk (3) extreme (3) around (3) canterbury (3) dry (3) risk (3) firefighters (3) weekend (3) northern (3) motorway (2) video (2) showing (2) mess (2) storms (2) roads (2) wet (2) month (2) far (2) another (2) moderate (2) springs (2) battling (2) stay (2) new (2) zealand (2) forecast (2) friday (2) move (2) across (2) part (2) meantime (2) stricken (2) areas (2) thunderstorms (2) auckland (2) hamilton (2) flooding (2) rains (2) break (2) 3 (2) day (2) make (2) storm (2) see (2) two (2) talking (2) rainfall (2) need (2)

US_COP21b 3:44 min NORTH AMERICA →

now (6) trees (6) fire (5) sea (4) solar (4) area (4) fuel (4) years (4) see (4) million (4) acres (4) areas (3) 2015 (3) california (3) lot (3) can (3) sierra (3) nevada (3) delta (3) spend (2) water (2) pumping (2) stations (2) let (2) still (2) debate (2) since (2) back (2) sunshine (2) comes (2) way (2) energy (2) look (2) today (2) temperatures (2) national (2) forest (2) 35 (2) ago (2) devastating (2) lack (2) higher (2) pine (2) bark (2) beetle (2) like (2) 12 (2) snow (2) next (2) 40 (2) park (2) rising (2) leading (2) another (2) leads (2) fires (2) money (2) level (2) huge (2) threat (2)

RU_COP21 3:46 min ASIA →

temperature (7) will (7) ° (6) now (6) weather (6) russia (5) arctic (4) water (3) years (3) far (3) territory (3) today (3) east (3) conditions (2) coast (2) calm (2) air (2) rise (2) season (2) already (2) monitoring (2) changed (2) high (2) july (2) ocean (2) thank (2) changes (2) russians (2) good (2) afternoon (2) climatic (2) plus (2) updated (2) seaside (2) rains (2) thunderstorms (2) dangerous (2) european (2) heat (2) see (2) siberia (2)

PR_COP21 3:47 min NORTH AMERICA →

changes (5) sea (4) loss (4) island (3) will (3) life (3) natural (3) planet (3) effects (3) environment (2) infrastructure (2) future (2) puerto (2) rico (2) caribbean (2) plants (2) marine (2) bioluminescent (2) way (2) cold (2) days (2) decrease (2) rainfall (2) wetlands (2) coral (2) reefs (2) requires (2) ocean (2) temperatures (2)

BZ_COP21 4:11 min NORTH AMERICA →

will (9) degrees (7) rainfall (6) celsius (6) average (5) range (5) trend (4) may (4) air (4) temperatures (4) country (4) season (4) february (3) decrease (3) rise (2) april (2) strongest (2) january (2) month (2) central (2) 2050 (2) seasons (2) rainy (2) south (2) june (2) north (2) mm (2) much (2) july (2) temperature (2) higher (2) maximum (2)

KE_COP21 4:32 min AFRICA →

quite (9) year (7) able (6) degrees (6) years (5) country (5) however (5) today (5) can (5) temperature (5) high (4) especially (4) expected (4) celsius (4) june (3) electricity (3) throughout (3) entire (3) around (3) season (3) see (3) stop (3) mm (3) rainfall (3) will (3) morning (3) showers (3) temperatures (3) nairobi (3) average (3) minimum (3) 2050 (2) well (2) question (2) actually (2) 50 (2) ago (2) end (2) dry (2) needs (2) situation (2) low (2) many (2) mount (2) snow (2) use (2) renewable (2) energy (2) carbon (2) tell (2) 2020 (2) amounts (2) tomorrow (2) parts (2) 22 (2) afternoon (2) went (2) c (2) month (2) increase (2)

CH_COP21 4:32 min EUROPE →

now (6) last (6) snow (5) will (5) day (4) air (4) water (3) days (3) year (3) temperature (3) degrees (3) winter (3) just (3) still (2) protected (2) partly (2) always (2) look (2) moment (2) person (2) back (2) character (2) calm (2) live (2) got (2) many (2) per (2) also (2) century (2) weather (2) expected (2) high (2) already (2) like (2) meters (2) afternoon (2) course (2) extremely (2) less (2) example (2) welcome (2) time (2) see (2) army (2) tomorrow (2)

TH_COP21 4:33 min ASIA →

will (10) weather (8) year (6) including (5) expected (4) wind (4) today (4) water (4) forecast (4) hello (4) region (3) sure (3) enough (3) greenhouse (3) carbon (3) dioxide (3) caused (3) us (3) flood (3) years (3) viewers (3) area (3) heavy (3) almost (3) 2050 (3) hot (3) past (3) severe (3) drought (3) bangkok (2) opportunity (2) experience (2) cold (2) global (2) warming (2) cause (2) atmosphere (2) gas (2) important (2) deforestation (2) happen (2) time (2) behavior (2) situation (2) lat (2) krabang (2) industrial (2) estate (2) currently (2) rain (2) high (2) people (2) use (2) can (2) already (2) conditions (2) extremely (2) floods (2) end (2) october (2) temperature (2) reducing (2) amount (2) sky (2) hotter (2) house (2) throughout (2) face (2) thailand (2) world (2) measured (2) many (2) also (2) consumption (2) areas (2)

JP_COP21a 5:08 min ASIA →

will (17) sea (6) tokyo (5) global (5) level (5) caused (5) warming (4) water (4) cm (4) due (4) area (4) storm (4) million (3) current (3) pace (3) even (3) rise (3) japan (3) surges (3) sandy (3) city (2) people (2) great (2) damage (2) bay (2) high (2) 80 (2) case (2) 14 (2) 5 (2) meters (2) destructive (2) power (2) just (2) year (2) special (2) countermeasures (2) world (2) new (2) york (2) future (2) also (2) increase (2) increasing (2) like (2) possibility (2) coastal (2) erosion (2) 60 (2) centimeters (2)

AR_COP21 5:11 min SOUTH AMERICA →

high (10) will (10) degrees (10) temperatures (9) country (7) summer (6) heat (5) due (5) days (5) maximum (5) center (4) celsius (4) good (3) today (3) expected (3) argentine (3) republic (3) corn (3) can (3) just (3) 38 (3) minimum (3) temperature (3) also (3) argentines (3) another (2) new (2) monday (2) happened (2) continue (2) north (2) second (2) longest (2) wave (2) history (2) storms (2) electrical (2) activity (2) next (2) news (2) drought (2) yields (2) prices (2) biofuels (2) going (2) 7 (2) thermal (2) sensation (2) see (2) tomorrow (2) around (2) weekend (2) 31 (2) rainfall (2) issue (2) looking (2) oil (2) water (2) global (2) less (2) region (2) cornproducing (2) area (2) affect (2) 50 (2) choose (2) patagonia (2) east (2) continues (2) affected (2) humidity (2)

UG_COP21 6:24 min AFRICA →

will (11) conditions (10) can (8) weather (7) now (7) see (7) also (7) western (7) uganda (7) country (6) region (6) homes (5) happening (5) cloudy (5) one (4) 2015 (4) today (4) eastern (4) sector (4) across (4) resulted (3) flooding (3) card (3) people (3) displaced (3) temperature (3) degrees (3) celsius (3) kind (3) dry (3) trying (3) well (3) rainfall (3) within (3) happened (3) maximum (3) another (2) station (2) report (2) future (2) expecting (2) take (2) look (2) thank (2) much (2) couple (2) continuation (2) cut (2) almost (2) floods (2) flooded (2) two (2) rise (2) 2 (2) side (2) prolonged (2) spells (2) likely (2) increase (2) according (2) projected (2) 2050 (2) till (2) extremes (2) nations (2) even (2) villages (2) happen (2) day (2) tomorrow (2) district (2) just (2) heavy (2) cross (2) roads (2) say (2) ocean (2) northern (2) promoter (2) lego (2) trailer (2) basin (2) morning (2) afternoon (2) places (2) still (2) drying (2) along (2) rest (2) partly (2)

BG_COP21 6:42 min EUROPE →

cultural (9) natural (7) heritage (7) world (6) water (6) included (5) list (5) unesco (5) sites (5) nessebar (5) europe (4) one (4) unique (4) lake (4) bulgaria (4) endangered (4) even (3) reserve (3) located (3) river (3) birds (3) species (3) islands (3) life (3) ancient (3) bulgarian (3) different (3) buildings (3) monuments (3) years (3) later (3) city (3) centuries (3) balance (2) mountains (2) thing (2) biosphere (2) srebarna (2) danube (2) hand (2) rare (2) thracians (2) extremely (2) architectural (2) also (2) nature (2) amazing (2) biodiversity (2) highly (2) culture (2) humanity (2) cities (2) human (2) many (2) coast (2) oceans (2) seas (2) negative (2) rise (2) level (2) including (2) erosion (2) ie (2) especially (2) processes (2) old (2) centuriesold (2) archaeological (2) declared (2) medieval (2) important (2) general (2) normal (2) related (2) sensitive (2)

AE_COP21 7:00 min ASIA →

uae (8) rise (7) temperatures (6) water (6) energy (5) countries (4) light (4) coasts (4) areas (4) arab (3) considered (3) field (3) power (3) country (3) resulting (3) continues (3) due (3) severe (3) oman (3) capital (3) degrees (3) celsius (3) many (3) today (2) confront (2) challenge (2) including (2) united (2) projects (2) initiatives (2) first (2) global (2) project (2) latest (2) renewable (2) meet (2) electric (2) needs (2) next (2) two (2) also (2) improve (2) record (2) resources (2) sea (2) melting (2) ice (2) north (2) south (2) large (2) arabian (2) gulf (2) atmosphere (2) weather (2) saudi (2) sand (2) sultanate (2) conditions (2) years (2) swept (2) storm (2) levels (2) led (2) strongest (2) history (2) one (2) played (2) role (2) position (2) hurricane (2) hit (2)

JP_COP21b 7:59 min ASIA →

japan (6) weather (5) days (5) will (5) year (4) now (4) typhoon (4) hot (3) temperature (3) rain (3) development (3) many (2) every (2) sora (2) jiro (2) clothes (2) wearing (2) called (2) people (2) time (2) like (2) 50 (2) years (2) world (2) average (2) expected (2) hit (2) kyoto (2) emergency (2) heavy (2) global (2) warming (2) rapidly (2) disasters (2) observations (2) clouds (2) cherry (2) blossoms (2) possible (2) able (2) making (2) autumn (2) see (2) exceeding (2)

SERIES 5 - Climate Central collaboration

BE_17100 1:11 min EUROPE →

will (5) reach (5) also (4) can (4) get (3) temperatures (3) summer (2) zaragoza (2) heat (2) episode (2) high (2) tomorrow (2) maximum (2) degrees (2) storms (2)

UG_17100 1:53 min AFRICA →

will (9) temperatures (8) degrees (7) centigrade (7) now (7) kampala (5) scenario (3) see (3) greenhouse (3) gases (3) warming (3) increase (3) need (3) look (2) emission (2) globally (2) 303 (2) already (2) seen (2) congo (2) think (2) currently (2) warmer (2) right (2) well (2) central (2) cities (2) world (2) others (2) can (2) reduce (2) emissions (2)

CA_17100 2:44 min NORTH AMERICA →

will (10) heat (8) little (5) temperature (4) records (4) emissions (4) really (3) think (3) situation (3) quebec (3) see (3) side (3) broken (3) talking (3) get (3) greenhouse (3) gas (3) new (3) york (3) average (3) degrees (3) swimming (2) summer (2) sunday (2) monday (2) still (2) even (2) taken (2) record (2) southern (2) us (2) used (2) according (2) united (2) nations (2) hotter (2) find (2) temperatures (2) thing (2) reduce (2) lyme (2) disease (2) context (2) much (2) one (2) 2 (2)

AR_17100 2:54 min SOUTH AMERICA →

will (6) greenhouse (3) measures (3) taken (3) gases (2) restricted (2) year (2) 2100 (2) cities (2) summers (2) today (2) longer (2) scenario (2) events (2) gas (2) reduction (2) century (2) increase (2) water (2) region (2) future (2) live (2)

US_17100 2:56 min NORTH AMERICA →

south (4) will (4) summer (4) today (4) days (3) florida (3) going (3) emissions (3) miami (3) summers (3) temperatures (3) gas (3) atmosphere (3) degrees (2) may (2) years (2) temperature (2) increase (2) future (2) greenhouse (2) can (2) stay (2) trapping (2) heat (2) reach (2)

DE_17100b 3:01 min EUROPE →

heat (6) extreme (5) 2017 (5) now (4) temperature (4) berlin (4) year (3) summer (3) average (3) days (3) degrees (3) today (3) 2100 (2) back (2) early (2) cities (2) within (2) risen (2) hot (2) much (2) many (2) high (2) just (2) city (2) areas (2) adapt (2) level (2) already (2) changed (2) amounts (2) changing (2) faster (2) earth (2) time (2)

ZA_17100 3:46 min AFRICA →

average (8) temperatures (8) cape (7) town (7) degrees (6) celsius (4) south (3) african (3) summer (3) c (3) current (3) levels (3) water (3) conditions (3) frequent (3) severe (3) city (2) cities (2) time (2) vegetation (2) dry (2) high (2) end (2) temperature (2) need (2) disasters (2) already (2) much (2) less (2) years (2) climatic (2) emissions (2) central (2) weather (2) reduced (2) likely (2) periods (2) last (2) shortages (2)

ES_17100 3:55 min EUROPE →

temperature (10) behave (9) years (9) next (8) degrees (8) will (6) scenario (6) going (5) average (5) summer (5) according (5) barcelona (5) mediterranean (5) madrid (4) 2100 (4) well (4) 45 (4) 85 (4) continue (4) cities (3) scenarios (3) approximately (3) today (3) similar (3) case (3) planet (3) ecosystem (3) sea (3) example (2) models (2) indicate (2) one (2) hand (2) months (2) córdoba (2) occurs (2) future (2) rcp (2) know (2) city (2) chosen (2) shores (2) heat (2) two (2) indicates (2) increase (2) rise (2) especially (2) temperatures (2) may (2) global (2) fossil (2) fuels (2) happen (2)

FR_17100 4:16 min EUROPE →

degrees (7) see (6) will (6) 2100 (5) temperature (5) well (4) greenhouse (4) emissions (4) years (3) also (3) level (3) rise (3) 60 (3) animation (3) one (3) summer (3) paris (3) global (3) nothing (3) moreover (3) red (2) several (2) already (2) greenland (2) sea (2) m (2) example (2) can (2) even (2) come (2) today (2) 4 (2) able (2) scenario (2) warming (2) carbon (2) dioxide (2) quickly (2) done (2) gas (2) french (2) heat (2) heart (2) apricots (2)

DE_17100a 4:16 min EUROPE →

degrees (11) frankfurt (7) temperature (7) summer (5) rain (5) barcelona (5) can (4) weather (4) look (4) average (4) will (4) temperatures (4) water (4) clouds (4) large (4) even (4) air (4) 10 (3) years (3) like (3) rise (3) per (3) just (3) ml (3) full (3) since (2) take (2) little (2) months (2) quite (2) ones (2) madrid (2) way (2) liters (2) square (2) meter (2) summers (2) going (2) dry (2) small (2) heavy (2) flooding (2) may (2) humidity (2) fits (2) warm (2) explain (2) fit (2) 40 (2) 257 (2) 29 (2) day (2) 33 (2) 30 (2) tropical (2)

BG_17100 4:58 min EUROPE →

will (21) sofia (6) bulgaria (4) summer (4) changes (4) means (4) compared (3) year (3) global (3) rise (3) scenario (3) know (3) general (3) people (3) affected (3) temperatures (3) conditions (3) see (3) agriculture (3) food (2) used (2) providing (2) lead (2) population (2) let (2) action (2) greenhouse (2) 2100 (2) temperature (2) celsius (2) health (2) can (2) diseases (2) four (2) southern (2) really (2) infrastructure (2) low (2) rainfall (2) particular (2) africa (2) practice (2) fires (2) daily (2) water (2) become (2) deficit (2) also (2) cities (2) mainly (2) moment (2)

CU_17100 5:26 min NORTH AMERICA →

temperature (12) will (10) havana (8) scenario (7) less (5) see (4) two (4) going (4) summer (4) average (4) maximum (4) year (3) degrees (3) current (3) scenarios (3) look (3) talk (3) temperatures (3) let (3) rise (3) much (3) eh (2) 31 (2) today (2) take (2) world (2) arrive (2) pakistan (2) emission (2) greenhouse (2) gases (2) hot (2) however (2) observe (2) rest (2) different (2) first (2) months (2) area (2) minimum (2) city (2) must (2) continues (2) without (2) decrease (2) atmosphere (2) favorable (2) emissions (2) talking (2)

VN_17100 6:17 min ASIA →

heat (15) will (14) degrees (11) temperature (9) people (8) hanoi (7) hot (6) also (6) can (5) environment (5) workers (5) like (4) higher (4) sun (4) even (4) number (4) air (4) future (3) live (3) average (3) 2100 (3) summer (3) capital (3) new (3) high (3) body (3) likely (2) add (2) two (2) need (2) weather (2) receive (2) children (2) work (2) hard (2) clean (2) scenarios (2) cut (2) delhi (2) india (2) reached (2) development (2) end (2) century (2) may (2) pakistan (2) cities (2) 48 (2) every (2) 2015 (2) record (2) asphalt (2) water (2) year (2) outdoor (2) last (2) night (2) years (2) affected (2) heavy (2) longer (2) without (2) increase (2) light (2) extreme (2) diseases (2) appeared (2) values (2)

EXTRA

HU_000 6:24 min EUROPE →

can (13) will (13) temperature (10) country (10) weather (10) degrees (8) precipitation (8) days (7) models (7) warming (7) extreme (6) century (5) summer (5) one (5) due (5) wind (5) even (5) become (5) based (5) however (4) increase (4) results (4) part (4) amount (4) heat (4) region (4) time (4) night (4) storms (4) accompanied (4) still (4) effect (4) also (4) middle (3) expected (3) warm (3) seasons (3) occur (3) may (3) fact (3) less (3) different (3) often (3) changes (3) northern (3) damage (3) torrential (3) increased (3) since (3) water (3) many (3) places (3) greenhouse (3) emissions (3) situations (3) average (3) high (3) today (3) almost (3) towards (3) thunderstorms (3) spring (3) years (3) frequent (3) simulations (3) increases (3) future (2) individual (2) annual (2) averages (2) leads (2) certain (2) occurrence (2) number (2) daily (2) according (2) model (2) areas (2) majority (2) indicate (2) 20 (2) extent (2) direction (2) causes (2) worldwide (2) rains (2) regions (2) increasing (2) living (2) people (2) cities (2) serious (2) waves (2) global (2) mean (2) warmer (2) usually (2) refreshment (2) example (2) lake (2) balaton (2) day (2) peak (2) around (2) 40 (2) great (2) hottest (2) friday (2) practically (2) everywhere (2) rise (2) hot (2) get (2) possible (2) next (2) dear (2) viewers (2) say (2) higher (2) environment (2) arctic (2) formed (2) rain (2) ice (2) hurricaneforce (2) air (2) danube (2) northeast (2) long (2) gusts (2) several (2) first (2) half (2) greater (2) winter (2) scenarios (2) human (2) sea (2) oceans (2) becoming (2) drier (2) periods (2) autumn (2) energy (2)

P1 → TEXTS → TAG CLOUDS → VIZ 02

The following visualisation shows the two tag clouds resulting from the merged transcriptions from all reports:

1. final speeches excluded;
2. final speeches only.

In order to make the comparison between the two tag clouds more immediate even if they have a different amount of words (500 versus 100), the longest one (*final speeches-excluded*) is broken into two pieces: words 1-100 and 101-500.

The proportion between word frequency and text size is consistent for the two tag clouds in the following visualisation, but it is different from the proportion in corresponding visualisations of protocol 2 and 3 (`P2 → texts tag clouds → viz 02` and `P3 → texts tag clouds → viz 02`) as well as in the previous visualisation (`P1 → texts → tag clouds → viz 01`).

FINAL SPEECHES EXCLUDED

will (432) degrees (188) temperature (148) also (147) weather (134) temperatures (130) can (120) now (104) water (96) years (96) see (92) today (92) heat (87) country (86) days (79) summer (77) year (74) high (71) average (69) one (67) time (65) rain (64) 2050 (62) rise (59) next (59) even (58) sea (57) already (56) expected (55) increase (54) south (54) just (54) like (53) still (52) people (52) us (51) going (51) conditions (50) much (49) continue (49) day (49) well (48) look (45) air (45) global (45) last (44) celsius (44) area (44) hot (44) good (44) part (44) forecast (44) many (43) due (42) areas (41) heavy (41) world (40) around (40) maximum (40) warming (39) greenhouse (39) century (38) future (38) extreme (37) rainfall (37) two (36) level (36) north (36) morning (35) especially (35) lot (34) region (34) take (33) may (33) let (33) according (32) end (32) season (31) cities (31) changes (31) get (31) dry (31) emissions (31) higher (30) storm (30) come (30) really (30) tomorrow (30) flooding (30) new (30) energy (30) scenario (29) way (28) warm (28) city (28) storms (28) northern (28) drought (28) first (27) number (27)

precipitation (27) natural (27) severe (27) go (26) ice (26) rains (26) wind (26) know (26) atmosphere (25) intense (25) coming (25) risk (25) showers (24) thunderstorms (24) another (24) thank (24) places (24) 10 (24) since (24) 40 (23) hours (23) night (23) 2100 (23) quite (23) therefore (23) snow (22) continues (22) able (22) make (22) southern (22) 30 (22) events (22) winter (22) hello (22) wave (22) become (22) different (21) little (21) example (21) likely (21) possible (21) island (21) western (21) course (21) gases (21) 2015 (21) within (21) hurricane (21) capital (21) increased (20) life (20) less (20) central (20) means (20) parts (20) gas (20) including (20) months (20) earth (20) however (19) [illegible]

FINAL SPEECHES ONLY

cities (109) need (103) world (94) future (87) can (77) emissions (72) together (62) greenhouse (60) today (59) action (56) reduce (53) work (52) weather (52) actions (49) planet (47) resilient (45) local (43) make (41) also (40) must (39) thank (39) many (39) sustainable (37) global (37) join (37) 2050 (37) better (36) let (36) impacts (36) taking (35) societies (33) development (32) achieve (32) come (31) please (31) gas (31) generations (30) challenge (30) new (30) carbon (30) floods (30) droughts (29) gases (28) stable (27) inhabitants (27) affect (27) reality (26) negative (26) impact (26) best (25) storm (25) seen (25) significantly (24) dioxide (24) rainfall (24) just (24) increasingly (24) wait (24) already (24) regions (23) way (23) rapidly (23) experiencing (23) intense (23) minimise (23) day (23) witness (23) parts (23) lowcarbon (22) safer (22) robust (22) agreement (22) policy (22) points (22) green (22) investors (22) industry (22) arrive (22) heatwaves (22) extreme (21) risk (21) temperature (21) towards (20) safe (20) committed (20) take (20) responsibility (19) power (19) road (19) convinced (18) people (18) fortunately (18) scientific (18) humanity (17) will (17) now (17) human (16) know (16) every (15)

Tag clouds – categories

Merged texts' tag clouds were further investigated: the words they contain were grouped on the basis of their meaning and in accordance with the evaluation criteria previously set.

Meaningful comparisons between reports and final speeches were provided through categorisation and colour coding.

CATEGORISATION

Each word from the two merged tag clouds was categorised into 1 exclusive category of 15, according to its meaning. Categories are the same as in protocol 2 and 3, and keep into consideration both the specific words in the tag clouds of all protocols and the evaluation criteria set prior to starting the analysis.

Each category can be made of 1, 2 or 3 specific subcategories. Categories and subcategories are listed and defined on the opposite page. However, the analysis initially focused on first-level categories (highlighted in blue in the list).

COLOUR CODING

A colour for each category was established, then the words in the merged texts' tag clouds were coloured according to their category of belonging. Working directly with colour on the clouds allows to see:

- variety → how many words for each category;
- frequency → position and size of words for each category.

REPORT ↔ FINAL SPEECH

Comparing the distribution of each colour for the two tag clouds (*final-speeches-excluded* and *final-speeches-only*) allows to go deeper into analysing how the intentions of the WMO initiative have been translated into the actual reports.

P1 → TEXTS → TAG CLOUDS → VIZ 03

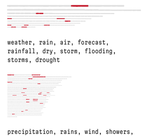
The visualisation on the right shows for each category the pair of tag clouds placed side by side, with the words falling in the category highlighted in colour.

In order to give more importance to the colours, words were replaced with rectangles through Dan Ross' *Flow Block* font. The terms included in the category were made readable in an ordered list (most frequent to least frequent) that follows each tag cloud.

In order for the comparison to be as immediate as possible, the division of the *final speeches-excluded* tag cloud into two pieces introduced in the previous visualisation (P1 → texts → tag clouds → viz 02) was kept.

Weather

FINAL SPEECH EXCLUDED



FINAL SPEECH ONLY

Causes

FINAL SPEECH EXCLUDED

FINAL SPEECH ONLY

Solutions

FINAL SPEECH EXCLUDED

FINAL SPEECH ONLY

Impacts

FINAL SPEECH EXCLUDED

FINAL SPEECH ONLY

Time

FINAL SPEECH EXCLUDED

FINAL SPEECH ONLY

Past & present

FINAL SPEECH EXCLUDED

FINAL SPEECH ONLY

Future

FINAL SPEECH EXCLUDED

FINAL SPEECH ONLY

Anticipation

FINAL SPEECH EXCLUDED

FINAL SPEECH ONLY

Locations

FINAL SPEECH EXCLUDED

FINAL SPEECH ONLY

Temperature

FINAL SPEECH EXCLUDED

FINAL SPEECH ONLY

Natural environment

FINAL SPEECH EXCLUDED

FINAL SPEECH ONLY

Science

FINAL SPEECH EXCLUDED

FINAL SPEECH ONLY

Media

FINAL SPEECH EXCLUDED

FINAL SPEECH ONLY

People

FINAL SPEECH EXCLUDED

FINAL SPEECH ONLY

Others

FINAL SPEECH EXCLUDED

FINAL SPEECH ONLY

CATEGORIES AND SUBCATEGORIES WITH THEIR EXPLANATIONS

1. WEATHER
   a. Forecasts → words referring to weather and weather forecasting *(e.g. meteorological);*
   b. Phenomena → words referring to weather phenomena and events *(e.g. rain);*
2. CAUSES
   a. General → words generally related to causation *(e.g. due);*
   b. Climate change →words referring to specific causes of climate change *(e.g. greenhouse);*
3. SOLUTIONS
   a. Action → words conveying the general idea of action/reaction *(e.g. fight);*
   b. Institutions → words related to institutions or governments, supposed to act against climate change *(e.g. intergovernmental);*
   c. Climate change → words related to specific behaviours connected with climate change savviness *(e.g. sustainability);*
4. IMPACTS
   a. Extreme → words conveying a sense of out of the ordinary *(e.g. extreme);*
   b. Effects → words generally related to effects *(e.g. impacts);*
   c. Threats → words related to clearly negative effects *(e.g. disasters);*
5. TIME
   a. Time → words expressing general time periods and intervals *(e.g. winter);*
6. PAST AND PRESENT
   a. Past → words exclusively expressing specific moments in the past, specifically before the moment when the data was collected *(e.g. 2019);*
   b. Present → words generally addressing the present moment *(e.g. now);*
7. FUTURE
   a. General → words generally related to future *(e.g. projections);*
   b. Specific moment → words expressing specific moments in future time *(e.g. 2050);*
8. ANTICIPATION
   a. Uncertainty → words expressing uncertainty or doubt *(e.g. might);*
   b. Certainty → words expressing certainty or confident expectancy *(e.g. sure);*
9. LOCATIONS
   a. General → general geographical terms *(e.g. longitude);*
   b. Global → words related to earth as a whole *(e.g. global);*
   c. Local → words referring to specific locations *(e.g. greenland);*
10. TEMPERATURE
    a. Temperature → words related to temperature *(e.g. heat);*
11. NATURAL ENVIRONMENT
    a. Natural environment → words related to natural environments, ecosystems and/or their elements *(e.g. mountain);*
12. SCIENCE
    a. Institutions → words related to scientists and scientific institutions *(e.g. ipcc);*
    b. Studies → words related to scientific studies and measurements *(e.g. data);*
    c. Information → words related to scientific communications *(e.g. report);*
13. MEDIA
    a. Media → words generally related to formats and channels (*e.g. photo);*
14. PEOPLE
    a. People → words connected with humanity as a group *(e.g. human);*
15. OTHERS
    a. Others → everything else;

Tag clouds – subcategories

The last textual analysis focused on reports only (final speeches excluded): its purpose was to inquire deeper the representation of climate change made by weather forecast companies. To do that, words from the tag cloud were rearranged according to second-level categories.

FINAL SPEECHES EXCLUDED

Finally, only the *final speeches-excluded* tag cloud was taken into consideration. Previous analysis had already provided a satisfying comparison between the declared intentions of the initiative and the way the media companies implemented them. The focus shifted then to a more detailed exploration of textual representations of the climate crisis in the reports.

CATEGORISATION

The focus shifted on subcategories (second-level categorisation) from the ones previously listed and defined (complete list available on the right, subcategories highlighted in blue).

CLUSTERING

The tag cloud was broken into single words, which were then positioned according to the subcategory they belong to. The information available through this kind of display is:

- variety → how many words for each subcategory;
- frequency → size of words for each subcategory.

◈ PI → TEXTS → TAG CLOUDS → VIZ 04

The visualisation on the right shows the words from the tag cloud grouped according to the category and subcategory they belong to. Words are readable, and their size is linked to their frequency as in the original tag cloud. Furthermore, each word is followed by its absolute frequency (in brackets).

The colour coding previously estabilished is mantained in order to strengthen the visual clustering of subcategories in higher-level groups.

Weather

FORECASTS

weather (134)
air (45) forecast (44) sky (11)
meteorological (11) forecasts (10)

PHENOMENA

rain (64) rainfall (37) dry (31)
storm (30) flooding (30) storms (28)
drought (28) precipitation (27) rains (26)
wind (26) showers (24) thunderstorms (24)
snow (22) hurricane (21) fire (19) floods (16) clouds (14)
wet (14) fires (14) flood (13) typhoon (13) sunny (13) winds (13)
cyclone (11) clear (11) cloudy (11) humidity (9) rainy (9) flooded (8)

Causes

GENERAL

due (42) caused (18) cause (17) affected (14)
affect (12) load (11) consequences (10) causing (9) leading (9) results (8)
result (8)

CLIMATE CHANGE

greenhouse (39) emissions (31)
energy (30) gases (21) gas (20) carbon (16) dioxide (10)

Solutions

ACTIONS

able (22) action (14) act (14)
behave (10) work (10) power (10) activities (9)
activity (8)

INSTITUTIONS

panel (10) agreement (8) terms (8)

CLIMATE CHANGE

Impacts

EXTREME

high (71)
average (69)
rise (59)
even (58)
already (56)
increase (54)
much (49)
many (43) heavy (41)
extreme (37) level (36)
lot (34) higher (30)
really (30) first (27)
new (30) severe (27)
intense (25) different (21)
increased (20) great (19)
strong (19) reach (19) record (18)
frequent (17) rising (16)
increasing (16) levels (15)
important (15) serious (13) big (12)
loss (11) attention (11) decrease (11)
extremely (11) records (10) significant (10)
special (10) low (10) several (10) highest (10)
major (10) huge (9) compared (9) force (8)

EFFECTS

conditions (50)
wave (22) happen (18) effect (17)
impact (16) effects (15) happening (14)
impacts (14) phenomenon (13)
happened (12) experience (12) changed (10)
experienced (10) changing (11) occur (10)
waves (8)

THREATS

problem (19) need (18)
damage (17) hit (14) challenge (12)
problems (11) disasters (8) cost (8) must (10)

Time

GENERAL

years (96) days (79) summer (77) year (74)
time (65) day (49) century (38) morning (35) end (32) season (31) winter (22)
night (23) hours (23) months (20) moment (18) afternoon (19) evening (17) month (17) june (15) august (15) july (14)
summers (13) week (13) decades (12) february (11) always (11) september (11) times (11) christmas (11) tuesday (10) period (10) weekend (10) january (10)
beginning (10) hour (9) early (9) seasons (8) friday (8) late (8)

Past & present

PAST

last (44) since (24) 2015 (21) back (18) past (13)
recent (12) autumn (12) ago (12) latest (11) 2014 (10) history (9)
yet (8) remember (8)

PRESENT

now (104)
today (92) still (52)
continue (49) continues (22) current (14)
currently (12) keep (12) remain (8)

Future

GENERAL

will (432) next (59)
going (51) future (38) scenario (29)
scenarios (16) trend (15) towards (14) later (11) longer (10)

SPECIFIC MOMENT

2050 (62) tomorrow (30) 2100 (23)

Anticipation

UNCERTAINTY

can (120) around (40)
may (33) risk (25) quite (23) possible (21)
almost (18) think (18) question (9) open (9) often (8) near (8)
seem (8) maybe (8)

CERTAINTY

expected (55) according (32)
likely (21) expect (16) sure (10) obviously (8) expecting (8)

Locations

GENERAL

country (86)
south (54)
area (44) areas (41)
north (36) region (34)
cities (31) city (28)
northern (28) places (24)
southern (22) western (21)
island (21) capital (20) coast (18)
place (18) coastal (16) regions (16)
west (16) far (16) across (15)
east (15) eastern (14) cape (14)
national (14) land (12) nation (11)
northeast (10) away (9) town (9) countries (9)
international (8) province (8)

GLOBAL

global (45)
world (40) earth (20)
planet (18)

LOCAL

us (51) arctic (15)
mediterranean (14) europe (13)
japan (13) madagascar (12) hanoi (12)
atlantic (11) bulgaria (11) vietnam (10)
miami (10) barcelona (10) brazil (10) ireland (9)
tokyo (8) havana (8) iceland (8)

Temperature

GENERAL

degrees (188) temperature (148)
temperatures (130) heat (87) celsius (44)
hot (44) warming (39) warm (28) warmer (16) cold (15) tropical (15) degree (13) melting (12) measures (9) hottest (9)
c (8)

Natural environment

GENERAL

water (96) sea (57) natural (27) ice (26) environment (19) ocean (17) sun (16)
forest (16) glaciers (10) species (9) trees (9) lake (9) mountains (9) beach (8)

Science

WHO

scientists (14)

WHAT

maximum (40) values (18)
range (18) minimum (17) mm (17)
half (17) recorded (16) meters (15)
amount (12) cm (11) models (10) km (10)
amounts (10) kmh (8)

INFORMATION

know (26) means (20)
information (9) resources (8)

Media

GENERAL

see (92) look (45) say (17) talk (17) seen (15) talking (15) show (15) report (13) looking (10) seeing (10)
news (9) said (9) tell (9) viewers (9) service (8)

People

GENERAL

people (52) life (20) live (14) human (13) hand (12) everyone (11) health (11) generation (10) diseases (10) cultural (10)

CATEGORIES AND SUBCATEGORIES WITH THEIR EXPLANATIONS

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   b. Effects → words generally related to effects *(e.g. impacts);*
   c. Threats → words related to clearly negative effects *(e.g. disasters);*
5. TIME
   a. Time → words expressing general time periods and intervals *(e.g. winter);*
6. PAST AND PRESENT
   a. Past → words expressing specific moments in the past, specifically before the moment when I collected the data *(e.g. 2019);*
   b. Present → words generally addressing the present moment *(e.g. now);*
7. FUTURE
   a. General → words generally related to future *(e.g. projections);*
   b. Specific moment → words expressing specific moments in future time *(e.g. 2050);*
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   a. Uncertainty → words expressing uncertainty or doubt *(e.g. might);*
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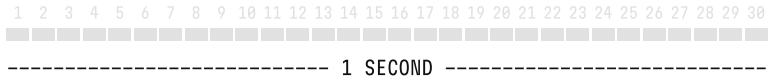
    c. Information → words related to scientific communications *(e.g. report);*
13. MEDIA
    a. Media → words generally related to formats and channels (*e.g. photo);*
14. PEOPLE
    a. People → words connected with humanity as a group *(e.g. human);*
15. OTHERS
    a. Others → everything else;

Images

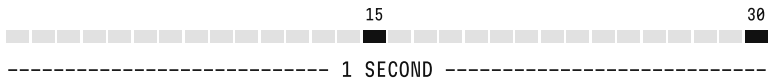
Each report was reduced to a sampling of its frames (one frame every half a second of video). In order to analyse both quantitatively and qualitatively the images, sampled frames were considered in their totality as well as through a selection of unique images.

FRAME SAMPLING

The frame rate for all videos was set to 30 fps through *Adobe Premiere Pro*.



VLC Media Player was used to extract every 15th frame: it means 2 sampled frames every second of video.



The frame sampling resulted in 42,077 total images.

UNIQUE IMAGES SELECTION

From the totality of the frames, unique images were manually selected. The criteria used for the definition of a unique image were the following:

- Each shot ("single sequence of a motion picture or a television program shot by one camera without interruption", *Merriam-Webster*) corresponds to at least one unique image.
- Inside the same shot there can be more than one unique image only if there is a significant change in the meaning and/or content of the frame.
  e.g 1 → When a map turns from showing temperatures to showing wind directions, it's two unique images.
  e.g. 2 → When the same visualisation is used first for the weather forecast of today and then for the weather forecast of tomorrow, it's just one unique image (the meaning doesn't change).
  e.g. 3 → When the same visualisation is used first for the weather forecast of today and then for the weather forecast of 2050, it's two unique images.

Out of 42,077 total frames, 2,413 unique images were selected.

Network

Unique images were arranged into a network based on AI image captioning. The network provided the base for mapping the visual representations of climate change in the reports.

VISUAL SIMILARITY

The 2,413 unique images were fed to Yale DHLab's *PixPlot* in order to get an interactive image network based on similarity: each frame is captioned from a previosly trained neural network model, then all frames are arranged in the space according to their content similarity.

The network can be explored through panning and zooming in the space or jumping to hotspots (image clusters). PixPlot automatically identifies some default hotspots, but they can also be created and curated by the user.

TAGGING

A static screenshot of the network was taken and manually tagged according to groups and clusters visually identified while exploring the interactive model and with the help of automatically identified hotspots.

PI → IMAGES → NETWORK → VIZ 00

The visualisation on the right shows the 2,413 unique images (selected from the sampled frames as previously described) displayed in the space on the basis of similarity (according to PixPlot's process of image captioning and positioning through a pre-trained convolutional neural network model).

Areas characterised by the predominance of a specific subject are outlined and tagged, even if subject clusters are often more spread around and less localised than they appear.

A straight diagonal line separates the upper-left portion of the map (majority of images including people) from the lower-right portion (majority of images without people).

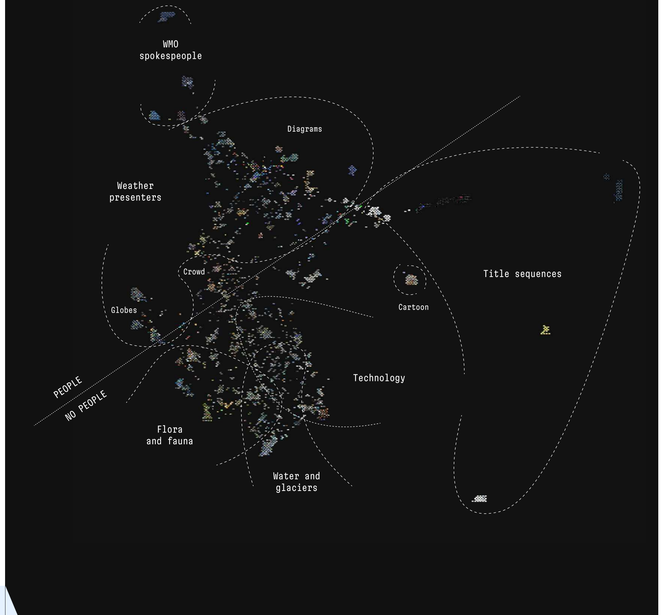
CLUSTERING

The network mapping was expanded into a detailed clustering of the images through the creation of a hierarchy of manually curated hotspots. The categorisation process kept into consideration the actual images' features and subjects as well as the evaluation criteria previously set. The hierarchy of (not exclusive) image clusters is visible on the opposite page.

INTERACTIVE NETWORK

PixPlot P1

Interactive network including all the 2,413 unique frames, displayed according to image similarity and with hotspots based on images' subjects.

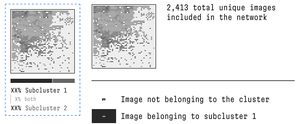


PI → IMAGES → NETWORK → VIZ 01

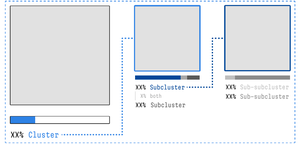
The visualisation on the right displays the cluster hierarchy and the quantity of images for each cluster and subcluster. It builds on the grid display provided by PixPlot and uses colour to distinguish one category from the others as well as for highlighting the links in the hierarchy.

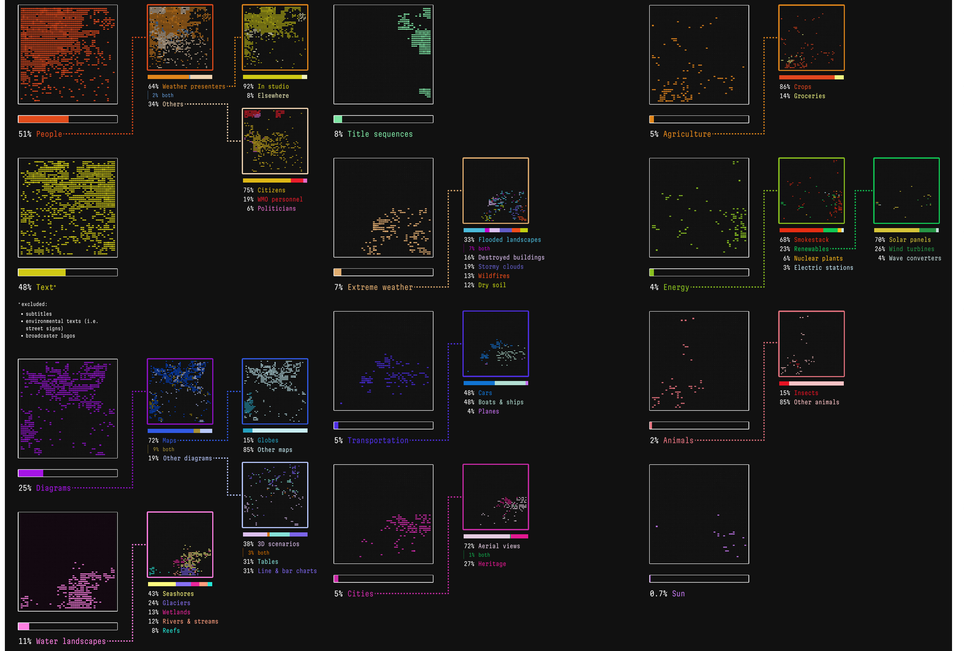
Clusters are ordered from the most populated to the least populated. Quantities are always expressed as percentages, since the most interesting comparison in that sense is that between child clusters belonging to the same parent cluster (or that of parent clusters between each other).

A single cluster is visualised as follows:



A family of clusters is visualised as a series of cluster visualisations connected through dashed lines and colour coding according to their hierarchy.





HIERARCHY OF IMAGE CLUSTERS

- PEOPLE
  - Weather presenters
    - In studio
    - Elsewhere
  - Others
    - Citizens
    - WMO personnel
    - Politicians
- TEXT
- DIAGRAMS
  - Maps
    - Globes
    - Other maps
  - Other diagrams
    - 3D scenarios
    - Tables
    - Line & bar charts
- WATER LANDSCAPES
  - Seashores
  - Glaciers
  - Wetlands
  - Rivers & streams
  - Reefs
- TITLE SEQUENCES
- EXTREME WEATHER
  - Flooded landscapes
  - Destroyed buildings
  - Stormy clouds
  - Wildfires
  - Dry soil
- TRANSPORTATION
  - Cars
  - Boats & ships
  - Planes
- CITIES
  - Aerial views
  - Heritage
- AGRICULTURE
  - Crops
  - Groceries
- ENERGY
  - Smokestack
  - Renewables
    - Solar panels
    - Wind turbines
    - Wave converters
  - Nuclear plants
  - Electric stations
- ANIMALS
  - Insects
  - Other animals
- SUN

A map of climate change representations across the online weather forecast landscape

Network - images

Clustered images were reconnected with their visual appearance through cluster-specific wall of images based on the grouping hierarchy.

CHILD CLUSTER

All images in each low-level-cluster (clusters which don't contain other clusters) were downloaded and arranged together in creating cluster-specific image walls. The purpose of this operation was to connect the abstraction of the network with the qualitative appearence of the frames, providing samples of the distinctive visual qualities in each image group.

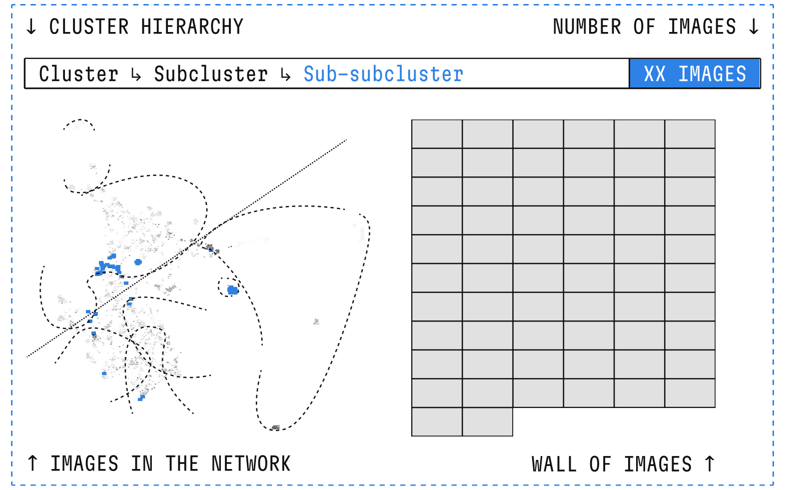
The complete hierarchy of clusters with the low-level-clusters highlighted in blue is available on the right.

◈ P1 → IMAGES → NETWORK → VIZ 02

The visualisation on the right covers all low-level-clusters in the previously defined hierarchy. For each cluster are shown:

- the hierarchy of its parent clusters (if any);
- the number of images in the cluster;
- the position of the images in the network;
- a sample of images from the cluster (image wall).

Colours are mantained from the previous visualisation (P1 → images → network → viz 01). A single cluster is visualised as follows:



The sequence of low-level-clusters' displays is followed by a miniature of the tagged network (P1 → images → network → viz 00), in order to provide an easy-to-consult map of the network areas.

HIERARCHY OF IMAGE CLUSTERS (CHILD CLUSTERS HIGHLIGHTED)

- PEOPLE
  - Weather presenters
    - In studio
    - Elsewhere
  - Others
    - Citizens
    - WMO personnel
    - Politicians
- TEXT
- DIAGRAMS
  - Maps
    - Globes
    - Other maps
  - Other diagrams
    - 3D scenarios
    - Tables
    - Line & bar charts
- WATER LANDSCAPES
  - Seashores
  - Glaciers
  - Wetlands
  - Rivers & streams
  - Reefs
- TITLE SEQUENCES
- EXTREME WEATHER
  - Flooded landscapes
  - Destroyed buildings
  - Stormy clouds
  - Wildfires
  - Dry soil
- TRANSPORTATION
  - Cars
  - Boats & ships
  - Planes
- CITIES
  - Aerial views
  - Heritage
- AGRICULTURE
  - Crops
  - Groceries
- ENERGY
  - Smokestack
  - Renewables
    - Solar panels
    - Wind turbines
    - Wave converters
  - Nuclear plants
  - Electric stations
- ANIMALS
  - Insects
  - Other animals
- SUN

A map of climate change representations across the online weather forecast landscape

Image plot

The visual space of the reports was also examined in regard to hue and brightness values in the pictures, to detect trends and tendencies in the use of colours of climate crisis' representations.

IMAGE MEASURING

Colour values in each of the 2'413 unique images were measured through *ImageMeasure* for ImageJ. In particular, the process returned for each picture:

- median of brightness values;
- standard deviation of brightness values;
- median of saturation values;
- standard deviation of saturation values;
- median of hue values;
- standard deviation of hue values.

PLOT DIMENSIONS

The measures of brightness and hue were used to build a plot of images through *ImagePlot* for ImageJ. The axis of the plot were mapped as below:

- X axis → median of hue values (*hue_median*);
- Y axis → standard deviation of brightness values (*brightness_stdev*).

Each image was positioned in the plot according to its measured values.

PLOT EVALUATION

The distribution in the plot was analysed mainly in regard to the hue values, considering image density as well as recurring subjects across the x axis.

◈ P1 → IMAGES → IMAGE PLOT → VIZ 01

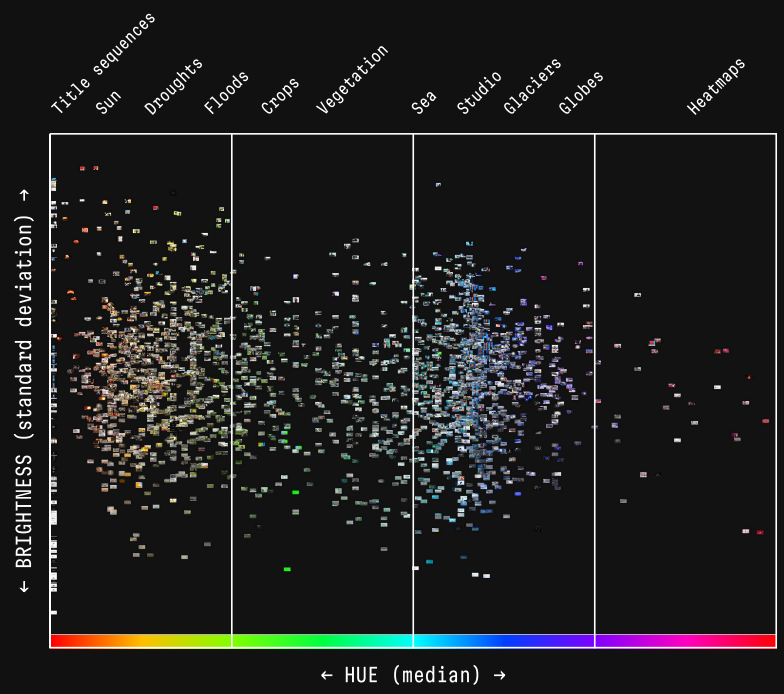
The visualisation on the right shows the 2,413 unique images distributed in the space according to their hue values (median mapped on X axis) and brightness values (standard deviation mapped on Y axis), as previously explained.

The plot is split vertically into 4 portions of equal width, according to hue values:

1. red to green (X1);
2. green to light blue (X2);
3. light blue to purple (X3);
4. purple to red (X4).

The purpose of those portions is to facilitate the evaluation of image density in relation to hue values.

Recurring subjects for specific hue areas are noted above the plot.



Frame grids

The total sampled frames were rearranged in grids, providing static reductions of the reports. The grids were mapped according to the series to which the report belonged, its continent of production and duration.

FRAME UNIFORMATION

All 42,077 frames were uniformed in their ratio, so that they could be more easily aggregated and compared. The uniformation process had the following settings:

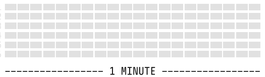
- ratio → 16:9;
- image → fill ratio;
- squashing and stretching → allowed.

Frames from videos which had an original ratio different from the output ratio (16:9) were deformed, but their content remained in all cases recognisable.

GRID CONSTRUCTION

Frames were rearranged to build an image grid for each report. Every row of the grid displays 20 frames, which correspond to 10 seconds of the original report: as previously explained, the sampling extracted 2 frames each second of screen time.

Consequently, 6 rows correspond to 1 minute of screen time.

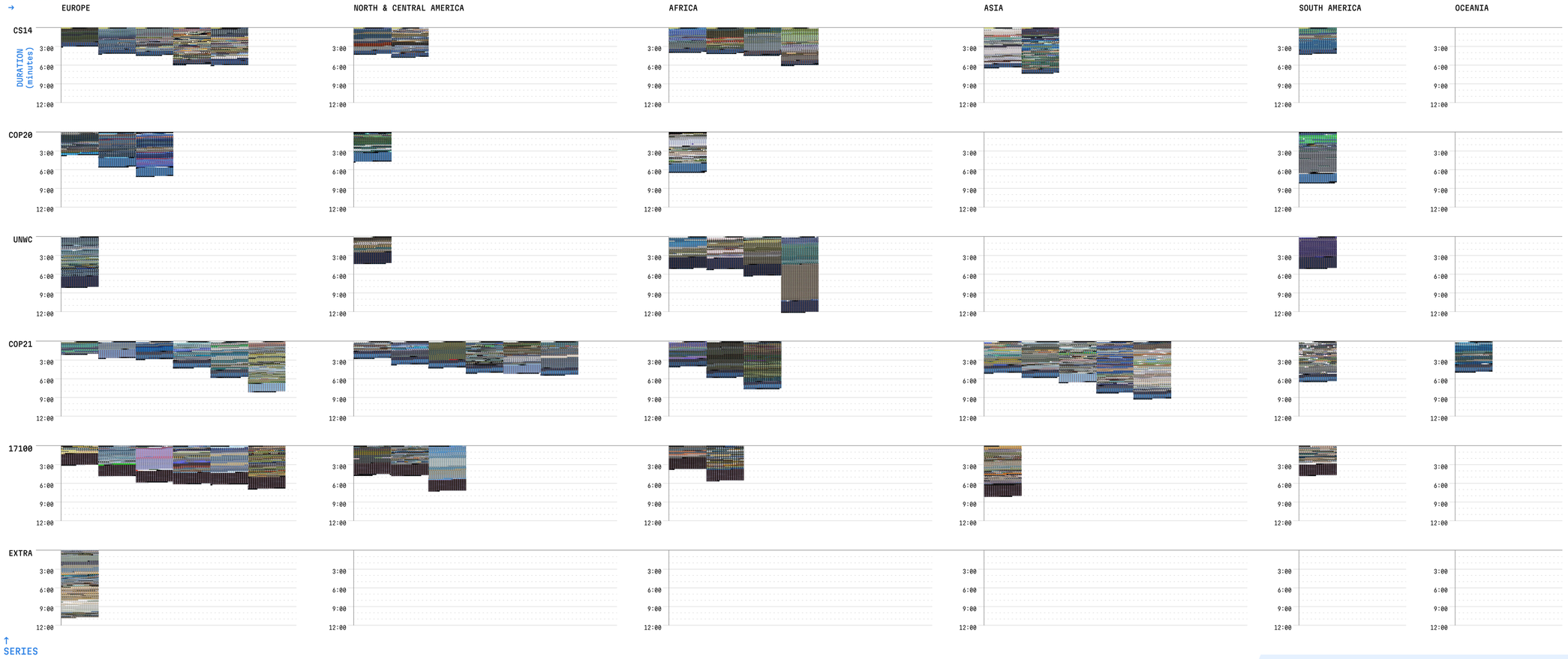


◈ PI → IMAGES → FRAME GRIDS → VIZ 00

The visualisation on the right shows the 63 image grids resulting, one for every report. They are grouped according to:

- series to which they belong (horizontal grouping);
- continent where they were set and produced (vertical grouping);

Inside each series/continent unit, the reports are ordered according to their duration, from the shortest to the longest (final speech included).



Frame grids - subjects and people

Images in the grids were categorised on the basis of subjects and people represented, using respectively colours and patterns in order to implement cross classification. Pictures in each category were then counted to provide quantitative comparisons of the identified typologies.

CATEGORISATION

The frames in the grid were mapped on the basis of both the main subject represented (8 exclusive categories) and the role of the people framed (5 non-exclusive categories). In either cases the categories resulted from the previous analysis of unique images and the evaluation criteria set prior to the analysis.

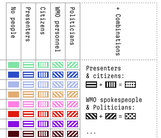
Main subjects:

1. Map → synthesised images of earth from above (satellite views included);
2. Chart → charts including bar and line charts, tables, 3D scenarios;
3. Extreme weather → all images of environments or people experiencing extreme weather (floods, droughts, wildfires, storms, heatwaves).
4. Technology → images centered on some piece of technology.
5. Natural landscape → images of natural environments that don't show clear modifications due to human activity (such as buildings, infrastructures, crops); pictures of extreme weather are excluded;
6. Artificial landscape → all images of environments that show clear modifications due to human activity; pictures of extreme weather are excluded;
7. Title sequence → all frames of title sequences (recurring as openings and endings in most videos);
8. Speech → pictures centered on people talking (giving a speech, interviewing, ...) where the context is not visible or not relevant.

People framed:

1. No people → nobody is visible (only exclusive category of the 5);
2. Presenters → weather presenters, meteorologists and scientists or internal personnel of the media company;
3. WMO personnel → as in most final speeches;
4. Politicians → on all levels, from local to national;
5. Citizens → basically anyone else.

Categories are associated to colours and textures as in the table below:

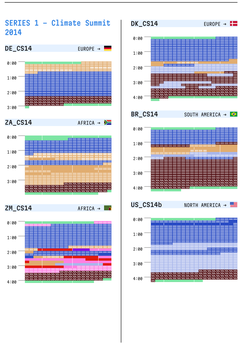


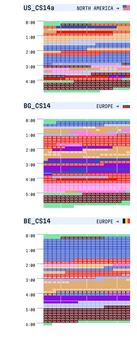
In the following visualisation the images in the grids are replaced with rectangles characterised by:

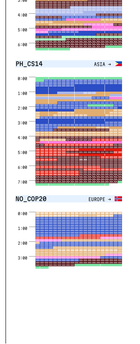
- a colour → according to the main subject represented (8 colours);
- a texture → according to the people framed (5 textures + their combinations).

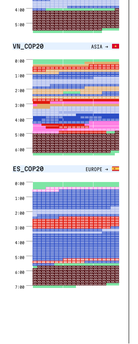
As mapped in the table on the left.

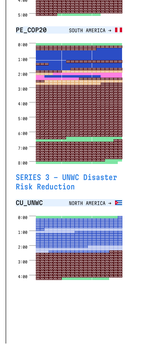
The grids are grouped according to the report series. Inside each series the reports are ordered on the basis of their duration (from the shortest to the longest - final speech included). The visualisation is designed as follows:

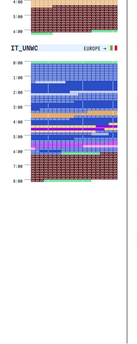


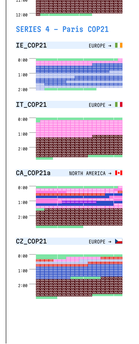


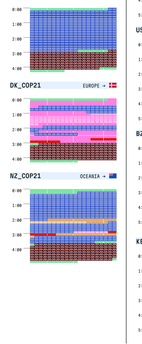


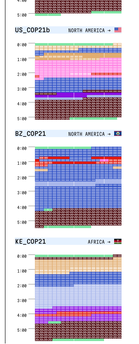


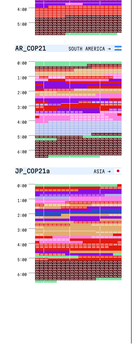


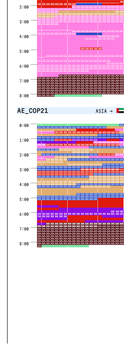


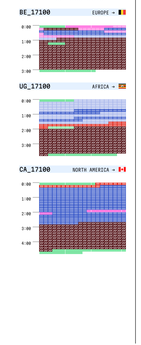


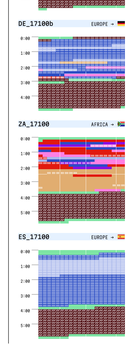


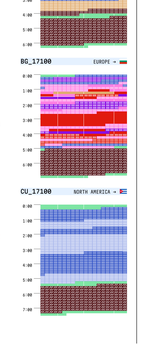


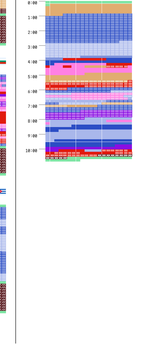






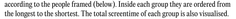




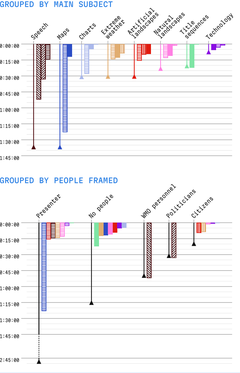


The visualisation below uses bars to show the quantity of screen time dedicated in total by the reports to each subject/people unit (e.g. maps including weather presenters). The time is calculated from the number of frames in the considered unit, knowing that every 2 frames correspond to a second.

Bars are both grouped according to the main subject represented (above), and according to the people framed (below). Inside each group they are ordered from the longest to the shortest. The total screentime of each group is also visualised.



The colour and pattern code is the same as in the table on the left.



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