Supplemental material to

"A Distant Threat? The Framing of Climate Futures across Four Countries"

Table S1. Journalistic media included in the sample

Media	Germany	India	South Africa	United States
Print media				
Print quality newspapers	Süddeutsche Zeitung; Welt; taz; Frankfurter Allgemeine Zeitung	Hindustan Times; Times of India; Hindu	Star; Sowetan	New York Times; Wall Street Journal; Washington Post
Print regional newspapers	Leipziger Volkszeitung; Hamburger Abendblatt; Allgemeine Zeitung; Stuttgarter Zeitung	Pioneer; Deccan Herald; Telegraph	Cape Times; Daily Dispatch; Herald; Pretoria News	Boston Globe; Star Tribune; Austin American Statesman; Salt Lake Tribune
Tabloid newspapers	Bild	Mumbai Mirror	Daily Sun	USA Today
Weekly newspapers/magazines	Spiegel; Zeit	Sunday Standard; India Today	Sunday Times	New Yorker; Newsweek
Online newspapers	spiegel.de; bild.de; sueddeutsche.de; welt.de	hindustantimes.com; indianexpress.com; thehindu.com	mg.co.za; news24.com; iol.co.za	nytimes.com; huffpost.com; usatoday.com

Table S2. Dictionary words used

English	German
warm*; water; emission*; year*; increas*; temperature*; sea*; degree*; rise*|rising; study|studies; 2030; ocean*; likely; arctic|antarctic*; extreme; becom*; 1,5|1.5|2,0|2.0|2; impact*; 2050; food; energy*; carbon*; species; centur*; weather; ice*; soil; level*; affect*; 2100; health*; population; predict*; celsius; expect*; heat*; storm*; flood*; long*; rain*; potential*; reduc*; intens*; fire*; threat*; air; great*; severe*; coast*; high*; project*; security; consequence*; effect*; target*; future; challenge*; crisis; fahrenheit; warn*; act*; cyclone*; annual; rate*; yield*; low*; extinct*; grow*; drought*; hot*; expect; decade*; might; degradation; acification|acidification; continue*; disaster*; crop*; develop*; renewable; scenario*; catastroph*; forest*; chang*; frequent*; adapt*; atmospher*; caus*; estimat*; deadly; next; surviv*; limit; mitigat*; 2040; island*; rapid*; plan|planning; precipitation; melt*; loss; jet stream; suggest*; forecast; fast*; wors*;	Klimawandel; könnte*; grad; jahr*|jährlich*; gletscher*; häuf*; wärme*; studie*; zunehmen*; extrem*; meeresspiegel; hitzewelle*; steigt|steige|steigen; zukunft; künftig*|zukünftig*; führe|führen|führt; erderwärmung; jahrhundert*; 2050; eis; 2100; erwärm*; schnell*; koralle*; bedroh*; kommend*; hitze*; trocken*; dürre*; auswirk*|wirk*|bewirk*; gefährd*; arktis*|antarktis*; meer*; anstieg|ansteig*; wald|wälder*; erwart*; permafrost*; öfter; früher; droht; klima*; schmelz*|schmilz*; verschwind*; überleben; möglich*; erreich*; heiß*; jahrzehnt*; auftreten; entwick*; atmosphär*; ökosystem*; berechnung*; gefahr*; 2030; katastroph*; langfristig*; arten*; celsius; eisfrei*; prophezei*; stärker; womöglich*; überschwemm*; sturm|stürme; krise*; wahrscheinlich*; hurrikan*; artkisch*|antarktisch*; beschleunig*; später; prognos*; vermehr*; aussterben; abnehmen|abnimmt; gewarnt|warn*; 2080;

hurricane*; season*; suffer*; glacier*; expand*; monsoon*; goal*; 2025; ecosystem*; commit*; improve*; 2080; tropic*; biodivers*; pledge*; assum*; trend*; damag*; model*; bushfire*; toward*; emerg*; declin*; wildfire*; react*; optimistic; pessimistic; uninhabitable; permafrost; determin*; decreas*; reach*; indicat*; benchmark; lead*; worry; strateg*; reshap*; objective*; urgen*; outlook; decarboniz*; neutral*; downpour*; rain*; dry|drier; heat; extreme weather; level*; will; distant; soon; forthcoming; climat*; could; coral; bleach*; endanger*; coming; earlier; retreat; disappear*; appear*; calculat*; danger*; speed*; prognos*; later; alter*; thunderstorm*; simulation*; duration; fear*; migration; nutrition; result*; tipping point; dramat*; polar; tornado*; irrevers*; thaw*; ecolog*; deluge; spate	abschmelz*|abschmilz*; vermutlich; durchschnittstemperatur*; temperatur*; niederschl*; veränder*|änder*; wetter*; massensterben; verstärk*; höher*; unwetter*; modell*|simulation*; erhöh*; intensi*; dauer; starkregen*|regen*; schlimmer; befürcht*; schätzung*; absterben|abstirbt; szenari*; hitze*; migration*; skizzier*; meereis; effekt*|konsequenz*|ergebnis|result*; jahrtausend*; droh*; emission*; unumkehrbar; kipppunkt*; dramatisch*; massenaussterben; zunahme|zunehm*|zunimmt; polkappe*; eismeer*; drastisch*; langfristig*; orkan*|tornado*; flutschäden|flutschaden; 1,5|1.5|2,0|2.0|2; polar*; vorhersag*; irreversib*; ozean*; wassertemperatur*; auftauen*|auftaut; voraussichtlich*; überhitzt|überheiz*; starkniederschl*; ökologisch*; waldbrand|waldbrände; aufheiz*; überflut*; bald|demnächst; dekade*; bevorsteh*; wird; werden; meeres*; wasserspiegel; eisschmelz*; flut*; sintflut; hochwasser; wirbelsturm|wirbelstürme; naturkatastroph*; umweltkatastroph*; mitigation; abschwäch*; linder*; minder*; verminder*; begrenz*;

	adaptation; anpass*; 2 grad|1,5 grad; fahrenheit; ausmaß; ernähr*; energie*; kohlenstoff*; spezie*; boden*; gesundheit*; bevölkerung*; projizier*; länger*; reduzier*; luft*; küste*; ziel*; herausforderung*; handeln|handlung*; zyklon*; rate*; niedrig*; gering*|wenig*; wachstum*; versauerung; weiter*; ertrag|erträge; erneuerbar*; verursach*; nächste*; 2040; insel*; plan*; verlust|verlier*; strom*|strömung*; saison*; ausbreit*; monsun*; 2025; verpflicht*; verbesser*; trop*; biodivers*; annahme*|annehmen|annimmt; trend*; schäden|schaden; buschbrand|buschbrände|feuer; reagier*; optimistisch*|pessimistisch*; unbewohnbar*; entschluss|entschlossen; besorg*; strategie*; dringlich*; vorschau*; dekarbonisier*; klimaneutral*; fern*

Codebook to "A Distant Threat? The Framing of Climate Futures across Four Countries"

1. Format and main topic

2.1 Format of article

We differentiate between various formats of articles: editorial article, news agency report, letter to the editor, guest article/contribution, and interview. The formats are described below.

Code	Format
00	Non-existent/indistinguishable
01	journalistic article Articles written by the editorial team or by a journalist. Every article which is **not** a guest contribution, news agency report, letter to the editor, or interview is coded as a journalistic article. These articles are often either not marked by name or marked by an abbreviation. **Most of the analyzed articles will be journalistic articles, e.g. reports, news, comments, or reviews.** **Attention:** Articles marked by an agency's abbreviation in combination with a reference to the editorial office are considered to be in-house efforts and therefore coded as editorial articles, e.g. dpa/FAZ.
02	news agency report: A news agency report can be recognized by the news agency's name underneath or above the article (e.g. Associated Press) or its abbreviation (AP). **Attention:** Sometimes there are references to photographs underneath the articles which were adopted from an agency. Articles are NOT coded as news agency reports when only the photography can explicitly be traced back to the agency, e.g. Photo: AP. **Attention:** Articles marked by an agency's abbreviation in combination with a reference to the editorial office are considered to be in-house efforts and therefore coded as editorial articles (code 01), e.g. dpa/FAZ, or if "sp" is the abbreviation of a newspaper's editor: dpa/sp. If it is not possible to decide whether or not an article is an editorial article or a news agency report (even after a quick online search or a look at the list of agencies!), we code 00 "non-existent/indistinguishable".
03	letter to the editor

On the one hand, a letter to the editor can be recognized by its style. On the other hand, it can often be recognized by formal criteria.

Style: Letters to the editor comment on the previous news coverage – they comment on topics or on the way the news were covered.

Formal criteria: Often, letters to the editor are marked by a notice as "Letter to the editor", "Postbox", "Leserbriefe" etc. In some cases, only the author's name and place of residence can be found underneath an article.

Attention: If it is unclear whether an article is a letter to the editor or an editorial article, we code "non-existent/indistinguishable" (code 00).

04 Guest article/contribution

Guest articles/contributions are authored by people that are more or less well known by the public, e.g. politicians, experts (e.g., scientists), journalists of other (e.g. foreign) media or such articles/contributions are republished from other media (e.g., the Conversation). The authors of guest contributions do not belong to the editorial office. Their names are normally referred to with a description of their function or profession (e.g. diplomat, chairman or chairwoman of a board, IPCC expert).

05 Interview

Interviews are texts written in a question-answer-format, in which one or more interviewee(s) answer(s) the editor's questions. Questions and answers are reported in their original wording ("O-Ton").

09 Other

e.g. horoscope, weather report, etc.

2.2 Main topic of the article: Aspects of climate change, climate politics and climate futures

We code one main topic for each article. The main topic is the subject or rather the aspect of climate change, climate politics, or climate futures discussed or described in the article which takes up the most space or attracts the most attention. If an article covers several aspects, which take up the same amount of space or attract the same amount of attention, the topic mentioned *first* is coded as the main topic. A good orientation to assess this is thus to look at the title of the article and its lead/introduction. Another orientation can be to ask what the trigger of reporting was. In some cases/articles, climate change will not be the main but rather the side topic; in these cases, the assessment should be based on the paragraph(s)/sentence(s) related to climate change.

Attention: We favor the **content** over the debate: If an article covers a national or international debate with specific topics, we record the topics of the debate (e.g. reduction of CO_2 emissions) instead of the debate itself.

Code	Topic/subject
00	**Unclear/indistinguishable** Only use this code when the topic of the article cannot be identified or it has no topic or if articles have no recognizable (substantial) content. This code will be used rarely or never.
01	**Climate change and its causes in a general sense** The article covers the existence of climate change in a very general sense and/or it focuses on explaining the causes for climate change, i.e., greenhouse gas emissions, physical mechanisms behind the greenhouse effect, mutually reinforcing processes etc. This can also include data, statistics and evidence that prove the existence of climate change (temperature data, CO_2-concentration in the atmosphere etc.) – however, everything that goes beyond these basic facts belongs to the category of consequences (06).
02	**Climate engineering (geoengineering)** Combating climate change through deliberate technical measures/interventions such as solar geoengineering (reflect sunlight back), carbon dioxide removal and sequestration or radiation management (reduction of radiation in the atmosphere). This is an artificial intervention into the climate after greenhouse gases have been emitted, and often links to carbon capture and storage. However, what also falls under this category is afforestation/reforestation; they can be seen as climate engineering when it is practiced on a large industrial scale of mass planting of fast-growing trees to absorb carbon dioxide. The same is true for ocean afforestation and ocean fertilization (which includes iron fertilization of the oceans).
03	**Mitigation/climate protection/prevention of climate change** This includes measures to reduce the impact of climate change or climate change itself, e.g., general climate protection goals, but also specific goals for the reduction of CO_2 emissions, as well as general mentions of "Fight/efforts against climate change", including fighting the dependency of industries on oil, coal, gas, and oil consumption in general.

Attention: This includes the funding, sponsorship, or establishment of infrastructure (laws, institutions etc.) for mitigation goals, e.g., the establishment of a public authority measuring exhaust gases with the goal to reduce CO_2 emissions. As such, a green(er) economy and creating green jobs falls under this category.

04 **Adaptation to the consequences of climate change**

e.g. dike heightening, adjustment of field crops

Attention: This includes the funding, sponsorship, or establishment of infrastructure (laws, institutions etc.) with the goal to put adaptation measures into practice.

05 **Mobilization/awareness**

The article focuses on the *need to raise awarenes*s within politics and/or society or on ongoing *efforts to raise awareness* for climate change and its effects, or for a political, societal, or economic problem and/or effects of a problem related to climate change. This can include a description or critique of specific calls for change and/or calls for awareness and other mobilization efforts such as demonstrations, protests, school strikes, etc. The focus can also be the public opinion on climate change if the article includes calls to change this public opinion. If the article focuses on media coverage as a means to raise awareness, code 08 (media presentations) should be used.

06 **Consequences/effects of climate change**

The article focuses on (potential) effects of climate change which go beyond a simple change in temperature, including articles that focus on future scenarios. This encompasses a simple description of the consequences of climate change, but also whether these effects can be supported by statistics, data, or other forms of evidence.

07 **Individual behavior and lifestyle**

The article discusses behavior of individuals, their lifestyle, such as consumption (e.g., individuals as consumers), transportation, energy use, etc. with a link to climate change.

08 **Media presentation of climate change**

The article focuses on how the media are covering the issue of climate change and its primary and secondary effects. This may include articles that deal with specific pieces of media reporting, e.g., discussing a recent talk show or another

published article. It may also include calls for more coverage or a different focus of the coverage. If media representations are only discussed as part of more general efforts to raise awareness for climate change and its effects, the article should be coded as 05 (mobilization/awareness).

09 **Other topic**

All topics for which no other code fits – should only be used as the very last possibility!

2. Categories relating to future scenarios

2.1 Scenario

For each article, we code which climate related future scenarios are covered. A future scenario is a description of how climate change will affect different aspects of life on earth – it points out which systems are affected by the primary or secondary consequences of climate change, and in which way. Please note that scenarios often refer to "changes" that will happen; in many cases, a future scenario is given with a local/global or temporal reference. However, for us to code a scenario, three out of the following four categories need to be fulfilled: time frame, scope, plausibility, and knowledge basis (but not evaluation!). For every possible system – e.g. ecosystems, economy, society – we code whether or not a scenario is mentioned in the article. Thus, an article can (and probably will) include more than one scenario.

Since the future scenarios of climate change and their framing are central, additional features are coded for each type of scenario. You can think of it as a *relation* between the scenario and its characteristics. Here we integrate central assumptions of *framing* and the concept of *psychological distance* (temporal, spatial, social and hypothetical proximity or distance). Hence, for each scenario, we also code the time frame, the geographical range, its basis, its evaluation, and its plausibility. Accordingly, the various scenarios are given letters (a – e) and the related variables are coded for each scenario type. Each scenario type (ecosystem, economic, social, etc.) will only be coded ONCE per article even if it is mentioned at different parts of the text and by different speakers/actors.

If a scenario of one type is mentioned in different parts of the text, but each time described identically (e.g., permanently as positive), this is, of course, unproblematic to code. In case two different scenarios of the same type appear in the article, the *dominant* scenario of this type is coded.

Example: An article includes a negative economic scenario, but also shortly mentions short-term positive economic benefits of climate change. Thus, the negative economic scenario

is dominant in the article and should be coded for the other categories (geographical range, plausibility etc.).

The dominant time frame/scope/etc. is either mentioned most often in the article or in the title and/or teaser. If there are no such indications and multiple are mentioned an equal number of times, we rather code 00 "unclear/indistinguishable" even if one time frame/scope/etc. is mentioned earlier or in the dominant scenario phrase.

It does not make a difference whether the author or quoted persons come up with the scenario(s).

If adaptation or mitigation measures are described including their (desired) future impact, the passage is coded as a scenario.

If the article describes changes which do not match any category, the “scenario other changes” is coded.

2.1.1 Scenario a: Climate/ecosystem

This category codes whether an article discusses changes of the climate system or ecosystem – such as rising temperatures, increasing number of extreme weather events, deceleration of the gulf stream, plants and animal species facing habitat loss, sea-level rise, thawing of permafrost soil, disappearance of biodiversity, increasing numbers of forest fires and so forth – as primary/secondary consequences of climate change.

Code	**Tags**
0	no
1	yes

2.1.2 Scenario b: Economic system

This category codes whether an article discusses economic changes as a result of or linked to climate change – such as the threat/strengthening of individual companies, threat/strengthening of industry sectors (agriculture, tourism, automobile, renewable energy), or threat/strengthening of economy, or a nation in general – as primary/secondary consequences of climate change. This also includes political demands, goals, or projections that portray a change of economic conditions (e.g., demands for less carbon intense cars). The reason for that is that these political aspects implicitly affect economic systems. Please keep in mind that although the scenario might be economical, this can still affect the society as a whole.

Code	Tags
0	no
1	yes

2.1.3 Scenario c: Socio-political system

This category codes whether an article discusses social changes – such as the increase/decrease of social inequality, increase/decrease of migration (climate refugees), increasing/decreasing supply and reliability of drinking water and food, aspects of security and health, as well as changes in the political system – as primary/secondary consequences of climate change.

Code	Tags
0	no
1	yes

2.1.4 Scenario d: individual changes

This category codes whether an article discusses changes in individual habits or lifestyle as primary/secondary consequences of climate change.

Code	Tags
0	no
1	yes

2.1.5 Scenario e: other changes

This category codes whether an article discusses changes as primary/secondary consequences of climate change that do not match any other category.

Code	Tags
0	no
1	yes

2.2 Categories describing the scenarios

2.2.1 a–e Timeframe for the scenario

Here, the **explicitly stated** timeframe for the occurrence of the scenario is coded. If the time frame is not explicitly stated, we code 00 “unclear/indistinguishable”. If an article contains

several scenarios of the same type with different time frames, we code **the dominant time frame of the scenario per type.**

Code	Time frame
00	unclear/indistinguishable
01	within the current or next year (nearest future)
02	up to the next five years (near future)
03	more than 5 up to 30 years (within one generation)
04	more than 30 up to 50 years (distant future)
05	more than 50 years (most distant future)

2.2.2 a–e Geographic scope of the scenario

Here, the **explicitly stated** geographic scope of the scenario is coded – starting point for this assessment is the respective country in which the newspaper/magazine is based. If the geographic scope is not explicitly stated, we code 00 "unclear/indistinguishable". If an article contains several scenarios of the same type with different geographic scopes, we code **the dominant geographic scope of the scenario per type.** Also note: If a local scope is mentioned for a scenario, we give it priority and subsequently do not consider any respective global consequences that might also be given (in this case, we disregard code 05 "global").

Code	Geographic scope
00	unclear/indistinguishable
01	local (< nation = the whole respective country) (nearest)
02	national (near)
03	own part of the world (continent)
04	other part of the world (distant)
05	global

2.2.3 a–e Plausibility

Here, the **explicitly or implicitly stated** plausibility of the scenario is coded. If the plausibility is not explicitly or implicitly stated (see cues), then 00 "unclear/indistinguishable" is coded. If an article contains several scenarios of the same type with different extends of plausibility, we code **the dominant plausibility of the scenario per type.** Pay attention: Usually, the moment

the plausibility is questioned in any way, the chosen code should not be 04 (even if this is addressed, for instance, in the heading).

Code	Plausibility
00	**unclear/indistinguishable** This code is only used if there is no statement at all about a scenario's plausibility.
01	**very unlikely, will (probably) not occur** The scenario is presented as definitely unlikely or impossible.
02	**somewhat/rather unlikely** The scenario is presented as somewhat or rather unlikely or as one of several options, or the plausibility is presented as conflicted and not finally accessible.
03	**likely, will probably occur** The scenario is presented as likely but not certain. Statements are presented without doubts concerning the content but written in the conjunctive form (cues: could, assume) or framed by softening modal adverbs (probably, estimated, perhaps). If the scenario is based on statements made by scientists (who normally express themselves carefully even though their theories are based on data and/or literature), words as e.g. might, appears also signal this code.
04	**very likely, certain** The scenario is presented as very likely or certain. Statements about the future are phrased in the indicative form. Cues: to be certain, proving, knowing This also concerns states'/nations'/organizations' etc. goals, pledges, commitments, targets such as "reaching net zero by year x" if they are mentioned without limitation and are not contested by other sources later in the article. Cues: expected, predicted, projected/projections

2.2.4 a–e Actor(s)

Here we code the type of actors, i.e., person(s) who speak(s) about the scenario(s) (i.e., the sources or persons for which direct quotes are used) and/or who are related to, affected by, or involved in the scenario (e.g., positively or negatively affected). The second type of actor(s)

refers to mentioned actor(s) for whom the scenario has meaning in the future. Be careful: If a scenario has a local context, it will make most sense to code local actors (if applicable) but maybe not international ones. Please note that while we term this category “actor(s)”, this can also be coded for organizations, collectives of people, and groups of actors (e.g., corporate actors, church, companies, government, and scientific institutions). We code actor(s) regarding their dominant function (e.g., a scientist in a scientific-corporate context). Since it is possible that several actors comment on or are mentioned related to the same scenario, we code for every group of actors if they have a say or not, if they are mentioned/affected/involved or not. In terms of social closeness or distance, some of these actors are considered to be more socially distant than others.

Code	Type of actor/speaker
	Scientific actors
0	not present
1	present
	Local/national political actors
0	not present
1	present
	International political actors
0	not present
1	present
	Economic actors
0	not present
1	present
	NGOs/activist(s) (related to climate issues)
0	not present
1	present
	Civil society actors (i.e., as part of an organization or union), including activists without an obvious relation to climate issues (church, labor union, cultural association, celebrities etc.)
0	not present
1	present
	(Journalistic) media actors
0	not present

1	present
	ATTENTION: only coded if a journalist/media actor is actually quoted/mentioned, not if there is no actual speaker/actor and the journalist themselves as author of the article is "the speaker/actor"
	Citizens/individuals (also as part of society or humanity as a whole)
0	not present
1	present
	Other actors
0	not present
1	present

2.2.5 a–e Knowledge basis of the future scenario

Here, the **explicitly stated** basis of the scenario is coded. If the basis is not explicitly stated, then 00 "unclear/indistinguishable" is coded. If an article contains several scenarios of the same type with different bases, we code **the dominant basis of the scenario per type.** If a base includes science or scientists (e.g., an NGO in cooperation with scientists), we give preference to scientific research.

Code	**Basis**
00	unclear/indistinguishable
01	scientific research
02	political decisions/declarations/outputs
03	individual opinion/personal assumption (also as representatives of an e.g., organization)
04	scientific-corporate perspective (science situated at economic/corporate actors)

2.2.6 a–e Evaluation of the scenario

Here, we code **evaluations** of the scenario. Often, adjectives are an indicator of an evaluation. If the evaluation is not explicitly stated, then 00 "unclear/indistinguishable" is coded. If an article contains several scenarios of the same type with different assessments, we code **the dominant evaluation of the scenario per type.**

Code	**Evaluation**
00	**unclear/indistinguishable/neutral**
	This code is used if there is no assessment of the scenario at all (i.e., it´s neutral).
01	**negative**

The scenario is described as clearly negative (e.g., loss of glaciers, supply of water and food questioned) and/or with clearly negative adjectives, e.g. catastrophic, apocalyptic, dangerous.

02 **ambivalent/mixed**

The article includes positive and negative assessments (description of scenarios and/or used adjectives) that are balanced and/or the final assessment of the article is unclear. The code can as well be used if the assessment is conflicting and not finally accessible.

03 **positive**

The scenario is described as positive (e.g., a green future, renewable energy mix) and/or with positive adjectives or substantives.

3. Causes, attributions of blame, measures and attributions of accountability

3.1 Causes

Causes are the reasons why a problem – in our case climate change itself and/or the primary or secondary consequences of climate change – occurs. Causes can be processes, structures, or events, but not actors (that would be causers or culprits, see 3.2 Attribution of blame). This category predominantly includes causes for climate change, in some cases, these needs to be extended to a general deterioration of the ecosystem.

Note: Logically, climate change must be the cause of the primary/secondary consequences of climate change, but the exact wording in the article is central to this coding step. That is why we code both for climate change in general (as a cause for a climate future scenario) and more specific causes. In addition to climate change as a cause, all concrete aspects of climate change must be included, as well as upstream causes of climate change (e.g. individual transport). Causes therefore always lie temporally and logically before their consequence or the problem.

The following categories were drawn from the relevant literature (Engesser & Brüggemann, 2016; Guenther et al., 2022; Post et al., 2019; Wessler et al., 2016) and regrouped. Since it is possible that several causes are mentioned, we code for each one if it is mentioned or not within the article.

Code **Causes**

Climate change in general

This category concerns climate change in a general sense as a cause for the specific climate change-related future scenarios. Climate change will very likely implicitly be the cause for a climate future. Hence, we code for synonyms, such as “global warming”. To code for this, no further explanation is required in an article.

0 not mentioned

1 Mentioned

Emissions

This category concerns emissions as responsible for climate change and scenarios, including mentioning greenhouse gases, the greenhouse effect, and the use of fossil fuels. We code for emissions when they are mentioned (not in the title, but in the article). Consequently, that implies that when “emission reduction” is mentioned, we code for the cause and the measure (i.e., mitigation).

0 not mentioned

1 mentioned

Financial and economic aspects

This includes everything with a link to finances and economics, such as industry and its (lack of) responsibility. This can also include capitalism in general or lobbyism.

0 not mentioned

1 mentioned

Individual behavior

This concerns individual behaviors such as lifestyle, the private use of energy, consumption patterns, transportation, or a general lack of individual responsibility.

Attention: This includes both personal/individual behavior but also collective behavior or those of celebrities.

0 not mentioned

1 mentioned

Political aspects

This concerns international and/vs. national policies, (a lack of) political responsibility, as well as international agreements, negotiations, and compliance with set goals.

	Attention: This includes both if agreements focusing on climate protection are not strong enough to show effects, and if agreements are likely to increase e.g. pollution.
0	not mentioned
1	mentioned
	Human-nature interactions
	This is concerned with impacts humans have on the environment, including exploitation, agriculture, deforestation (on a social, structural, or industrial level), and urbanization.
0	not mentioned
1	mentioned
	Scientific and technological aspects
	This concerns scientific and/or technological developments, such as a lack thereof or a misdirection, including dysfunctional innovation and distribution.
0	not mentioned
1	mentioned
	Other aspects
0	not mentioned
1	mentioned

3.2 Attributions of blame

Here we code which actor(s) are assigned the blame for climate change and/or the primary and secondary consequences of climate change. Please note that this can also be coded for organizations, collectives of people, and groups of actors (e.g., corporate actors, church, companies, government, scientific institutions). Be careful when social systems are mentioned, because if this is too unspecific, then it might rather be a cause in general but not so much a specific attribution of blame (e.g., capitalism). Be careful: the actors blamed are connected to a cause (so always think of them as a link between a cause and actor blamed); this is not true the other way round: causes can stand without actors. We code actor(s) regarding their dominant function (e.g., a scientist in a scientific-corporate context). Since it is possible that several actors are blamed, we code for every group of actors if they are mentioned or not within the article.

Code	**Type of actor/speaker blamed**
	Scientific actors

0	not mentioned
1	mentioned
	Local/national political actors
0	not mentioned
1	mentioned
	International political actors
0	not mentioned
1	mentioned
	Economic actors
0	not mentioned
1	mentioned
	NGOs/(climate) activist(s) (related to climate issues)
0	not mentioned
1	mentioned
	Civil society actors (i.e., as part of an organization or union), including activists without an obvious relation to climate issues (church, labor union, cultural association, celebrities etc.)
0	not mentioned
1	mentioned
	(Journalistic) media actors
0	not mentioned
1	mentioned
	Citizens/individuals as politically/individually acting subjects (also as part of society or humanity as a whole)
0	not mentioned
1	mentioned
	Individuals as consumers (also as part society)
0	not mentioned
1	mentioned
	Other actors
0	not mentioned
1	mentioned

3.3 Measures and their effectiveness

If the article describes measures that should be taken to combat climate change and/or its primary and secondary consequences, or it reports (and evaluates) measures that have already been taken, then we code for measures. Measures are usually demanded, evaluated, required, suggested or recommended for the future (signal words!) or have been implemented in the present with a view to a future effect.

Attention: It can sometimes be difficult to assess what a future scenario and what a measure is. Remember, future scenarios are in the future – from a given point of reference – and they often contain details about geographic scopes (also global) and time frames. Think of it as a narrative: in most cases, the future scenario will be described, the causal mechanism will be explained, and measures will be introduced to support or prevent a specific future scenario. So, in a way, the future scenario is the potential outcome, and a measure can (or cannot) guide the way towards it.

The following categories were drawn from the relevant literature (Engesser & Brüggemann, 2016; Guenther et al., 2022; Post et al., 2019; Wessler et al., 2016) and regrouped. Since it is possible that several measures are mentioned, we code for each one whether it is mentioned or not. Furthermore, measures can be assessed, and thus we code for each measure if they are only mentioned or if they are actively opposed (rejected) or actively advocated (e.g., as a promising solution). Indicators for advocated can be should, will, must, have to, "the only thing that helps", etc.

Code	**Measures**
	Mitigation measures
	This concerns attempts to reduce greenhouse gases (their sources) but also measures such as rainforest protection. If the Paris Agreement (or similar formulations) is mentioned in the context of a mitigation measure, remember to code it as a political measure a priori as well.
0	not mentioned
1	opposed/rejected
2	mentioned or mixed evaluation
3	Advocated
	Climate engineering
	This concerns technical measures such as carbon dioxide removal or radiation management (an artificial intervention), and often links to carbon capture and

storage. This also refers to the storage regarding forests and oceans – and respective measures (on an industrial scale).

0 not mentioned
1 opposed/rejected
2 mentioned or mixed evaluation
3 advocated

Adaptation measures

This includes sea walls, reforestation with new plants that tolerate a warmer climate or plant and animal protection and is often directly referred to as adaptation.

0 not mentioned
1 opposed/rejected
2 mentioned or mixed evaluation
3 advocated

Renewable energies

This refers to wind, solar and water energy, usually described as clean or green energy.

0 not mentioned
1 opposed/rejected
2 mentioned or mixed evaluation
3 advocated

Bridging technologies

This refers to old and new technologies such as nuclear energy, gas, and fracking.

0 not mentioned
1 opposed/rejected
2 mentioned or mixed evaluation
3 advocated

Political measures (international treaties/regulations/policies)

This concerns (inter)national treaties and binding regulations, the transfer of knowledge and financial aids between countries, carbon trading and carbon taxes. If the Paris Agreement (or similar formulations) is mentioned in the context of a political measure, remember to code it as a mitigation measure a priori as well.

0	not mentioned
1	opposed/rejected
2	mentioned or mixed evaluation
3	advocated
	Individual behavior
	This concerns **individual** energy conservation, changes in lifestyles, consumption, sustainable products, individual action and transportation
0	not mentioned
1	opposed/rejected
2	mentioned or mixed evaluation
3	advocated
	Research and technology
	This refers to **progress and funding** in science as well as technology development.
0	not mentioned
1	opposed/rejected
2	mentioned or mixed evaluation
3	advocated
	Socio-economic measures
	This relates to claims that a change of the socio-economic order is necessary, such as **questioning capitalism** or asking for an ecological revolution (a system change). However, weaker socioeconomic measures are also coded.
0	not mentioned
1	opposed/rejected
2	mentioned or mixed evaluation
3	advocated
	Corporate measures
	This refers to **voluntary commitments of industry and organizations** as well as corporate responsibilities and divestment.
0	not mentioned
1	opposed/rejected
2	mentioned or mixed evaluation
3	advocated
	Pressure from civil society

	This refers to claims that state that what is needed is more **protest and demonstrations** to, for instance, raise awareness or increase pressure on politicians.
0	not mentioned
1	opposed/rejected
2	mentioned or mixed evaluation
3	advocated
	Education and awareness
	This refers to more education about and/or awareness of climate change, such as training programs – in public and/or schools.
0	not mentioned
1	opposed/rejected
2	mentioned or mixed evaluation
3	advocated
	Other measures
0	not mentioned
1	opposed/rejected
2	mentioned or mixed evaluation
3	advocated

3.4 Attribution of responsibility

Here we code which actors are assigned responsibility for measures to combat climate change or its primary and secondary consequences. Please note that this can also be coded for organizations, collectives of people, and groups of actors (e.g., corporate actors, church, companies, government, scientific institutions). Be careful when social systems are mentioned, because if this is too unspecific, then it might rather be a measure in general but not so much a specific attribution of responsibility. We code actor(s) regarding their dominant function (e.g., a scientist in a scientific-corporate context). Since it is possible that several actors are responsible, we code for every group of actors if they are mentioned or not within the article.

Code	**Type of actor/speaker responsible to act**
	Scientific actors
0	not mentioned
1	mentioned

	Local/national political actors
0	not mentioned
1	mentioned
	International political actors
0	not mentioned
1	mentioned
	Economic actors
0	not mentioned
1	mentioned
	NGOs/activist(s) (related to climate issues)
0	not mentioned
1	mentioned
	Civil society actors (i.e., as part of an organization or union), including activists without an obvious relation to climate issues (church, labor union, cultural association, celebrities etc.)
0	not mentioned
1	mentioned
	(Journalistic) media actors
0	not mentioned
1	mentioned
	Citizens/individuals as politically/individually acting subjects (also as part of society or humanity as a whole)
0	not mentioned
1	mentioned
	Individuals as consumers (also as part society)
0	not mentioned
1	mentioned
	Other actors
0	not mentioned
1	mentioned