



# ***semantic Encyclopedia***

***- Transforming Raw Data into Knowledge!***

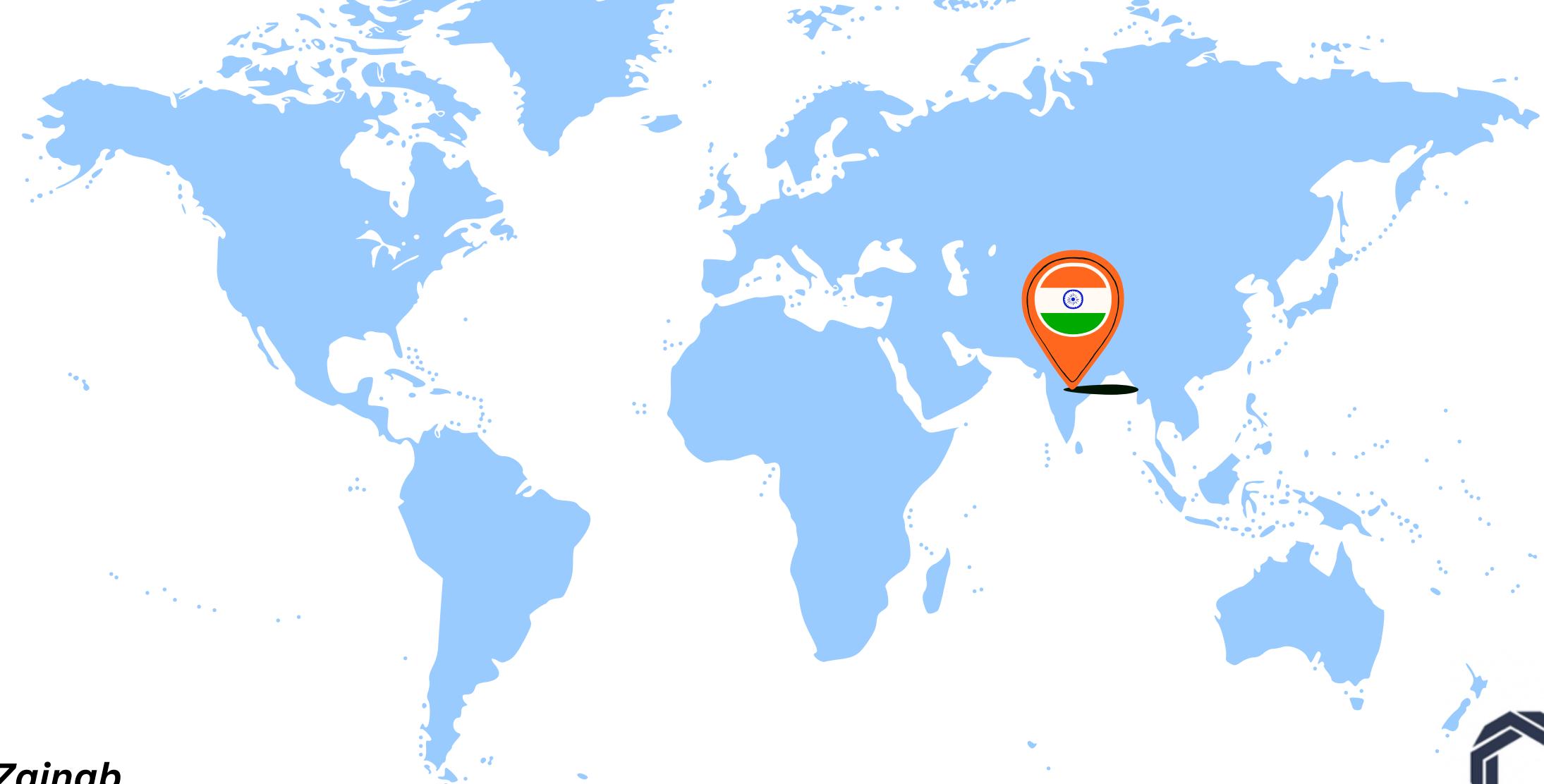


***Presented by:***

***Shaik Zainab, Master of Pharmacy Student @AnuragUniversity, Telangana, India  
Intern @semanticClimate***



*Shaik Zainab,  
Master of Pharmacy Student  
@AnuragUniversity, Telangana, India*

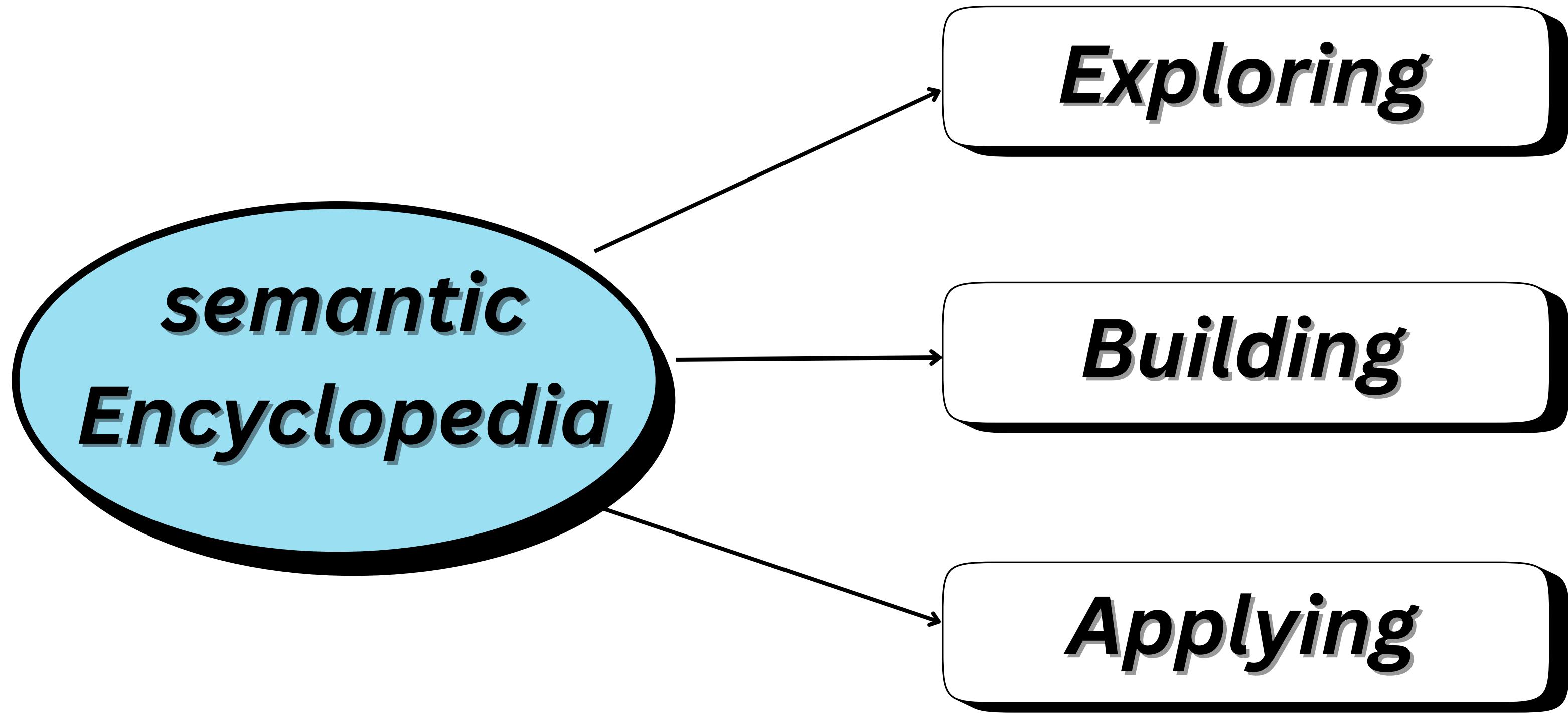


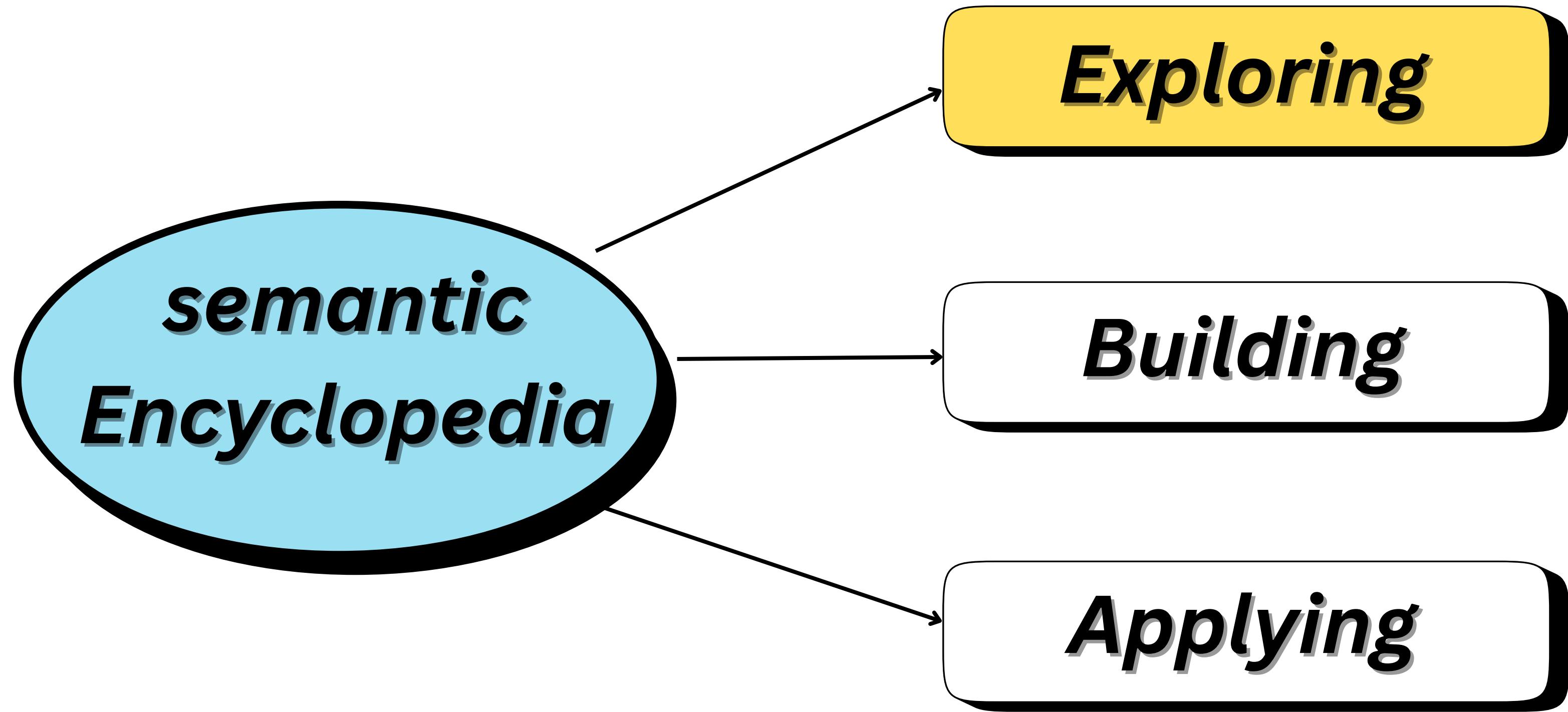
→ *Intern @semanticClimate*



#semanticClimate  
Transforming information into actionable knowledge







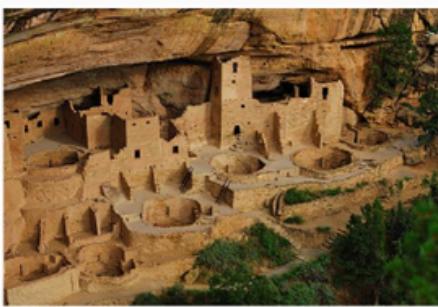
search term: wet tropics Wikipedia Page

The **Wet Tropics of Queensland** World Heritage Site consists of approximately 8,940 km of Australian wet tropical forests growing along the north-east Queensland portion of the Great Dividing Range. The Wet Tropics of Queensland meets all four of the criteria for natural heritage for selection as a World Heritage Site. World Heritage status was declared in 1988, and on 21 May 2007 the Wet Tropics were added to the Australian National Heritage List.



search term: United States of America Wikipedia Page

The **United States of America (USA)**, commonly known as the **United States (U.S.)** or **America**, is a country primarily located in North America. It is a federal union of 50 states and a federal capital district, Washington, D.C. The 48 contiguous states border Canada to the north and Mexico to the south, with the states of Alaska to the northwest and the archipelagic Hawaii in the Pacific Ocean. The United States also asserts sovereignty over five major island territories and various uninhabited islands. The country has the world's third-largest land area, largest exclusive economic zone, and third-largest population, exceeding 334 million. Its three largest metropolitan areas are New York, Los Angeles, and Chicago, and its three most populous states are California, Texas, and Florida.



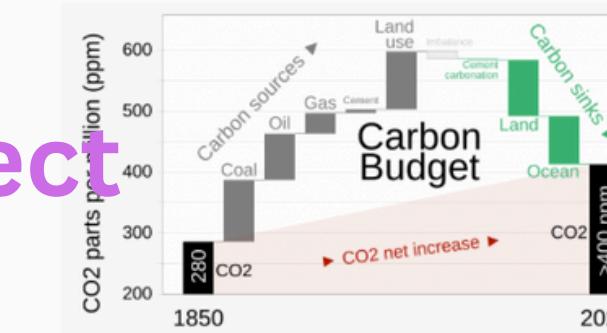
Cliff Palace, a settlement of ancestors of the Native American Pueblo peoples in present-day Montezuma County, Colorado, built between c. 1200 and 1275

search term: Global Carbon Project Wikipedia Page

The **Global Carbon Project (GCP)** is an organisation that seeks to quantify global greenhouse gas emissions and their causes. Established in 2001, its projects include global budgets for three dominant greenhouse gases—carbon dioxide ( $\text{CO}_2$ ), methane ( $\text{CH}_4$ ), and nitrous oxide ( $\text{N}_2\text{O}$ )—and complementary efforts in urban, regional, cumulative, and negative emissions.



## Global Carbon Project (GCP)



GCP's *Global Carbon Budget 2021* presented research (Friedlingstein et al. 2021) showing cumulative contributions to the global carbon budget since 1850 to illustrate how carbon source and sink components have been out of balance, causing an approximately 50% rise in atmospheric carbon dioxide concentration

search term: Energy budget Wikipedia Page

An **energy budget** is a balance sheet of energy income against expenditure. It is studied in the field of Energetics which deals with the study of energy transfer and transformation from one form to another. Calorie is the basic unit of measurement. An organism in a laboratory experiment is an open thermodynamic system, exchanging energy with its surroundings in three ways - heat, work and the potential energy of biochemical compounds.

search term: winter Wikipedia Page

**Winter** is the coldest and darkest season of the year in polar and temperate climates. It occurs after autumn and before spring. The tilt of Earth's axis causes seasons; winter occurs when a hemisphere is oriented away from the Sun. Different cultures define different dates as the start of winter, and some use a definition based on weather.



search term: chemistry Wikipedia Page

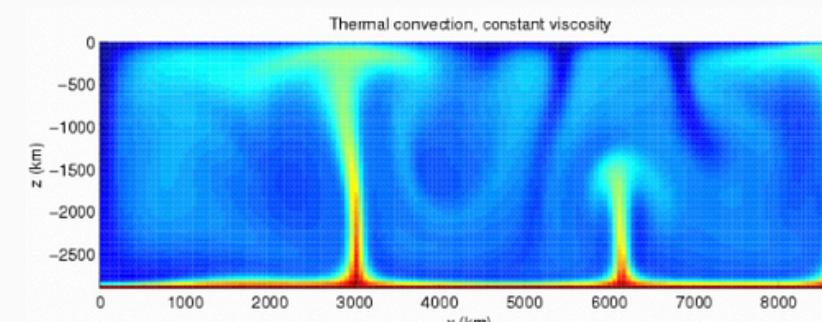
**Chemistry** is the scientific study of the properties and behavior of matter. It is a physical science within the natural sciences that studies the chemical elements that make up matter and compounds made of atoms, molecules and ions: their composition, structure, properties, behavior and the changes they undergo during reactions with other substances. Chemistry also addresses the nature of chemical bonds in chemical compounds.



## Convection

search term: convective Wikipedia Page

**Convection** is single or multiphase fluid flow that occurs spontaneously through the combined effects of material property heterogeneity and body forces on a fluid, most commonly density and gravity (see buoyancy). When the cause of the convection is unspecified, convection due to the effects of thermal expansion and buoyancy can be assumed. Convection may also take place in soft solids or mixtures where particles can flow.



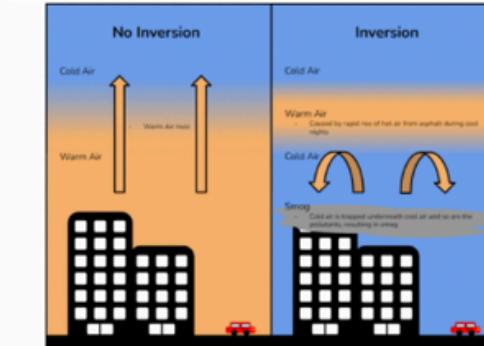
Simulation of thermal convection in the Earth's mantle. Hot areas are shown in red, cold areas are shown in blue. A hot, less-dense material at the bottom moves upwards, and likewise, cold material from the top moves downwards.

search term: 3SM Coupled Model Wikipedia Page

There were no results matching the query.

search term: atmospheric inversion Wikipedia Page

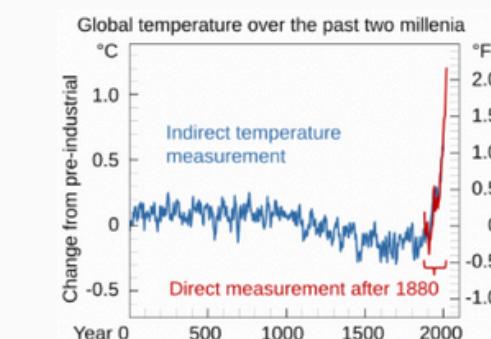
In meteorology, an **inversion** (or **temperature inversion**) is a phenomenon in which a layer of warmer air overlies cooler air. Normally, air temperature gradually decreases as altitude increases, but this relationship is reversed in an inversion.



Temperature inversion in an urban environment

search term: mean surface temperature Wikipedia Page

**Global surface temperature** (GST) is the average temperature of Earth's surface. More precisely, it is the weighted average of the temperatures over the ocean and land. The former is also called sea surface temperature and the latter is called surface air temperature. Temperature data comes mainly from weather stations and satellites. To estimate data in the distant past, proxy data can be used for example from tree rings, corals, and ice cores. Observing the rising GST over time is one of the many lines of evidence supporting the scientific consensus on climate change, which is that human activities are causing climate change. Alternative terms for the same thing are **global mean surface temperature** (GMST) or **global average surface temperature**.



The blue line represents global surface temperature reconstructed over the last 2,000 years using proxy data from tree rings, corals, and ice cores. The red line shows direct surface temperature measurements since 1880.

CMIP

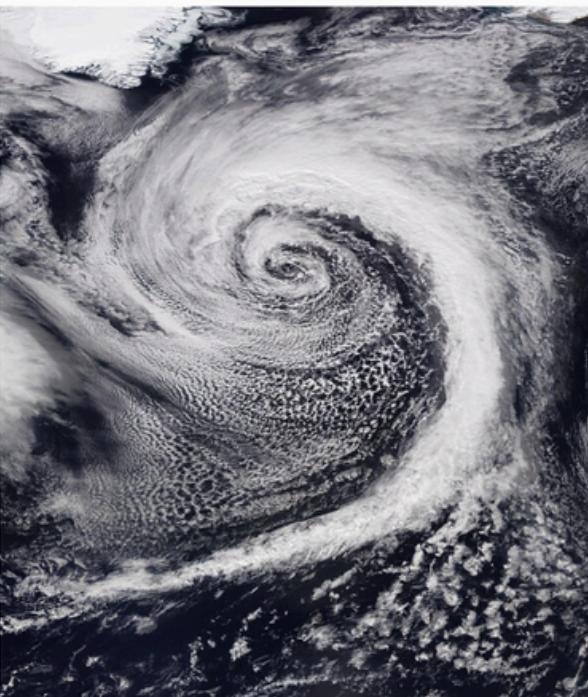
search term: CMIP6 Wikipedia Page

In climatology, the **Coupled Model Intercomparison Project** (CMIP) is a collaborative framework designed to improve knowledge of climate change. It was organized in 1995 by the Working Group on Coupled Modelling (WGCM) of the World Climate Research Programme (WCRP). It is developed in phases to foster the climate model improvements but also to support

**Extratropical cyclones**, sometimes called **mid-latitude cyclones** or **wave cyclones**, are low-pressure areas which, along with the **anticyclones** of high-pressure areas, drive the weather over much of the Earth. Extratropical cyclones are capable of producing anything from cloudiness and mild showers to severe hail, thunderstorms, blizzards, and tornadoes. These types of cyclones are defined as large scale (synoptic) low pressure weather systems that occur in the middle latitudes of the Earth. In contrast with tropical cyclones, extratropical cyclones produce rapid changes in temperature and dew point along broad lines, called weather fronts, about the center of the cyclone.



## Extratropical cyclones



A powerful extratropical cyclone over the North Atlantic Ocean in March 2022

search term: Working Group I Wikipedia Page

The **Intergovernmental Panel on Climate Change (IPCC)** is an intergovernmental body of the United Nations. Its job is to advance scientific knowledge about climate change caused by human activities. The **World Meteorological Organization (WMO)** and the **United Nations Environment Programme (UNEP)** set up the IPCC in 1988. The United Nations endorsed the creation of the IPCC later that year. It has a secretariat in Geneva, Switzerland, hosted by the WMO. It has 195 member states who govern the IPCC. The member states elect a bureau of scientists to serve through an assessment cycle. A cycle is usually six to seven years. The bureau selects experts in their fields to prepare IPCC reports. There is a formal nomination process by governments and observer organizations to find these experts. The IPCC has three working groups and a task force, which carry out its scientific work.



search term: IOB Wikipedia Page

search term: glacial Wikipedia Page

A **glacier** (US: /'gleɪʃər/; UK: /'glæsiər, 'gleɪsiər/) is a persistent body of dense ice that is constantly moving downhill under its own weight. A glacier forms where the accumulation of snow exceeds its **ablation** over many years, often **centuries**. It acquires distinguishing features, such as **crevasses** and **seracs**, as it slowly flows and deforms under stresses induced by its weight. As it moves, it abrades rock and debris from its substrate to create landforms such as **cirques**, **moraines**, or **fjords**. Although a glacier may flow into a body of water, it forms only on land and is distinct from the much thinner **sea ice** and **lake ice** that form on the surface of bodies of water.



Glacier of the Geikie Plateau in Greenland.

search term: warming Wikipedia Page

**Warming** may refer to:

**Paleoecology** (also spelled **palaeoecology**) is the study of interactions between organisms and/or interactions between organisms and their environments across geologic timescales. As a discipline, paleoecology interacts with, depends on and informs a variety of fields including paleontology, ecology, climatology and biology.

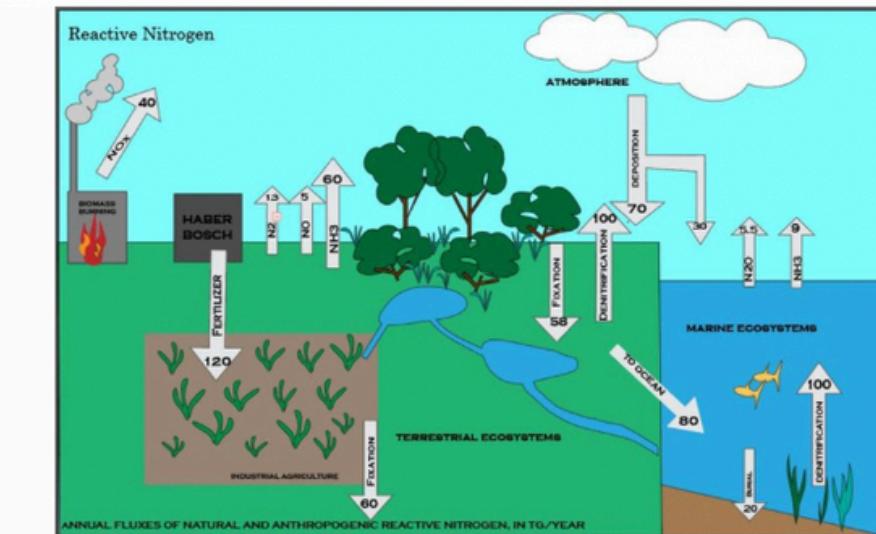


*Zygospira modesta*, atrypid brachiopods, preserved in their original positions on a trepostome bryozoan; Cincinnati (Upper Ordovician) of southeastern Indiana

# Nitrogen cycle

search term: nitrogen cycle [Wikipedia Page](#)

The **nitrogen cycle** is the biogeochemical cycle by which nitrogen is converted into multiple chemical forms as it circulates among atmospheric, terrestrial, and marine ecosystems. The conversion of nitrogen can be carried out through both biological and physical processes. Important processes in the nitrogen cycle include fixation, ammonification, nitrification, and denitrification. The majority of Earth's atmosphere (78%) is atmospheric nitrogen, making it the largest source of nitrogen. However, atmospheric nitrogen has limited availability for biological use, leading to a scarcity of usable nitrogen in many types of ecosystems.



Global cycling of reactive nitrogen including industrial fertilizer production, nitrogen fixed by natural ecosystems, nitrogen fixed by oceans, NO<sub>x</sub> emitted by biomass burning, NO<sub>x</sub> emitted from soil, nitrogen fixed by lightning, NH<sub>3</sub> emitted by terrestrial ecosystems, deposition of nitrogen to terrestrial surfaces and oceans, NH<sub>3</sub> emitted from oceans, ocean NO<sub>2</sub> emissions from the atmosphere, denitrification in oceans, and reactive nitrogen burial in oceans.

search term: coastal waters [Wikipedia Page](#)

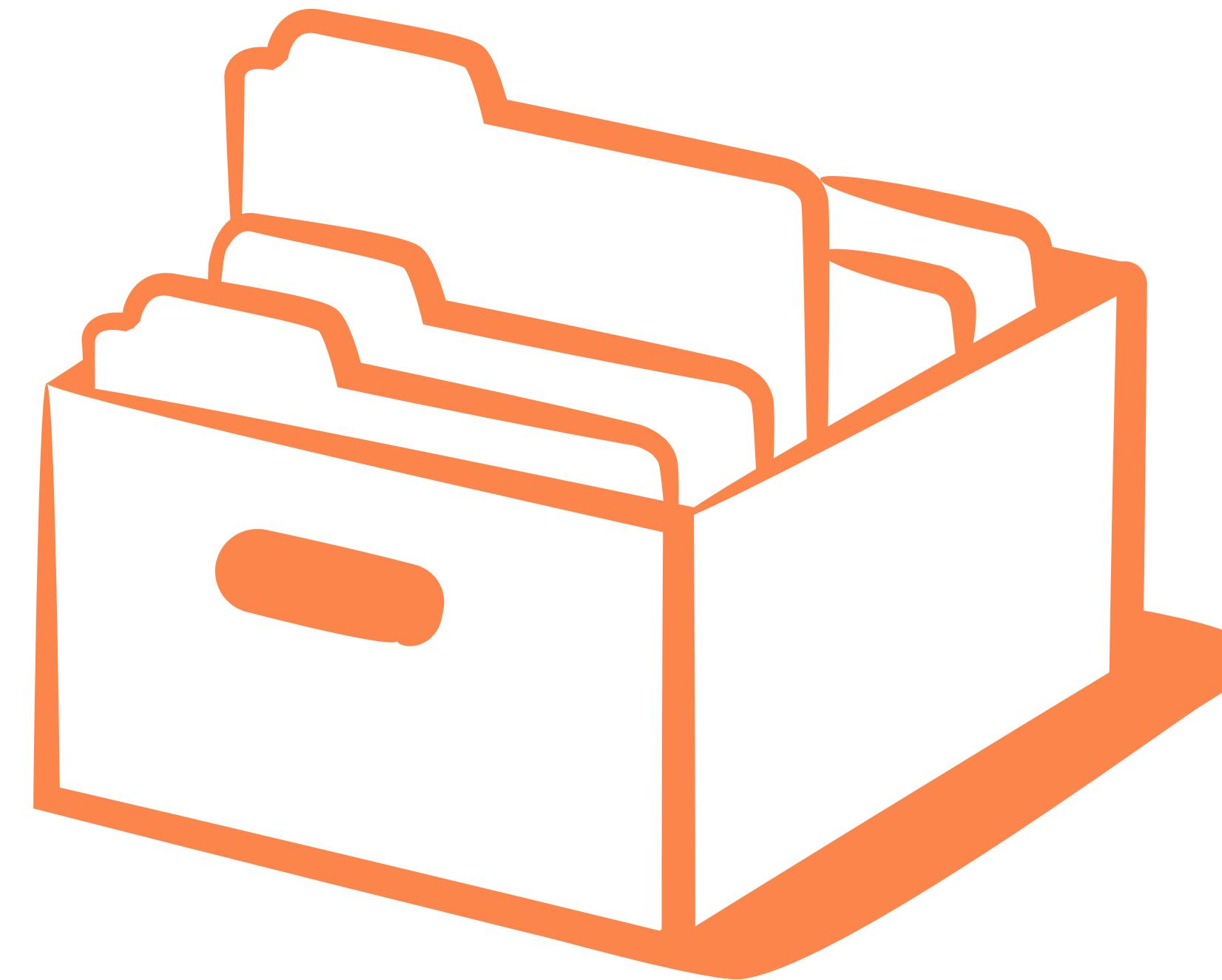
A **coast** – also called the **coastline**, **shoreline**, or **seashore** – is the land next to the sea or the line that forms the boundary between the land and the ocean or a lake. Coasts are influenced by the **topography** of the surrounding landscape, as well as by water induced **erosion**, such as waves. The **geological composition** of rock and soil dictates the type of shore that is created. Earth contains roughly 620,000 km (390,000 mi) of coastline.



Sunrise on the Jersey Shore coastline at Spring Lake, New Jersey, U.S.

search term: Administration [Wikipedia Page](#)

**Administration** may refer to:





# ipcc

Intergovernmental Panel on Climate Change

*Sixth Assessment Reports*  
(AR6)

**Executive Summary**

Climate-related illnesses, premature deaths, malnutrition in all its forms, and threats to mental health and well-being are increasing (*very high confidence*<sup>1</sup>). Climate hazards are a growing driver of involuntary migration and displacement (*high confidence*) and are a contributing factor to violent conflict (*high confidence*). These impacts are often inter-connected, are unevenly distributed across and within societies, and will continue to be experienced inequitably due to differences in exposure and vulnerability (*very high confidence*). Cascading and compounding risks affecting health due to extreme weather events have been observed in all inhabited regions, and risks are expected to increase with further warming (*very high confidence*) {7.1.3, 7.1.4; Cross-Chapter Box COVID in Chapter 7; 7.2.1, 7.2.2, 7.2.3, 7.2.4, 7.3.1, 7.3.2, 7.3.3, 7.4.1, 7.4.4; Cross-Chapter Box HEALTH in Chapter 7; Cross-Chapter Box ILLNESS in Chapter 2}.

**mental health**

**Cascading**

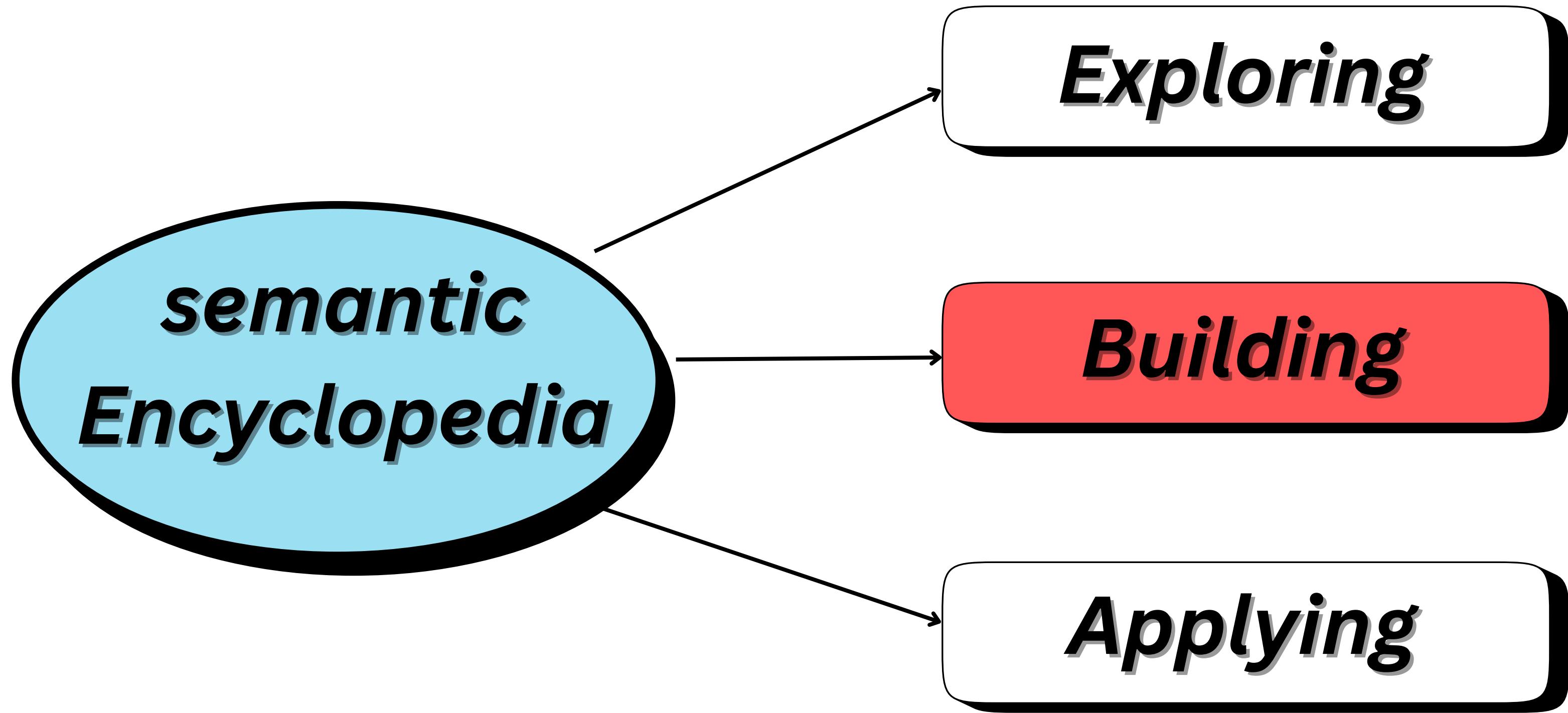
Since AR5, new evidence and awareness of current impacts and projected risks of climate change on health, well-being, migration and conflict have emerged, including greater evidence of the detrimental impacts of climate change on mental health (*very high confidence*). New international agreements were reached on climate change (Paris Agreement), disaster risk reduction (DRR) (Sendai Agreement), sustainable development (the Sustainable Development Goals (SDGs)), urbanisation (The New Urban Agenda), migration (Global Compact for Safe, Orderly and Regular Migration) and refugees (Global Compact on Refugees) that, if achieved, would reduce the impacts of climate change on health, well-being, migration and conflict (*very high confidence*). However, the challenges with implementing these agreements are highlighted by the coronavirus disease 2019 (COVID-19) pandemic, which exposed systemic weaknesses at community, national and international levels in the ability of societies to anticipate and respond to global risks (*high confidence*). Incremental changes in policies and strategies have proven insufficient to reduce climate-related risks to health, well-being, migration and conflict, highlighting the value of more integrated approaches and frameworks for solutions across systems and sectors that are embodied in these new international agreements (*high confidence*) {7.1.3, 7.2.1, 7.4.1, 7.4.2, 7.4.3, 7.4.6; Cross-Chapter Box COVID in Chapter 7}.

**Paris Agreement**

**Sustainable  
Development Goals  
(SDGs)**

**coronavirus**

**pandemic**

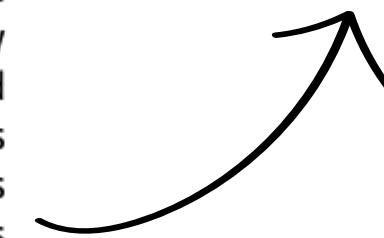




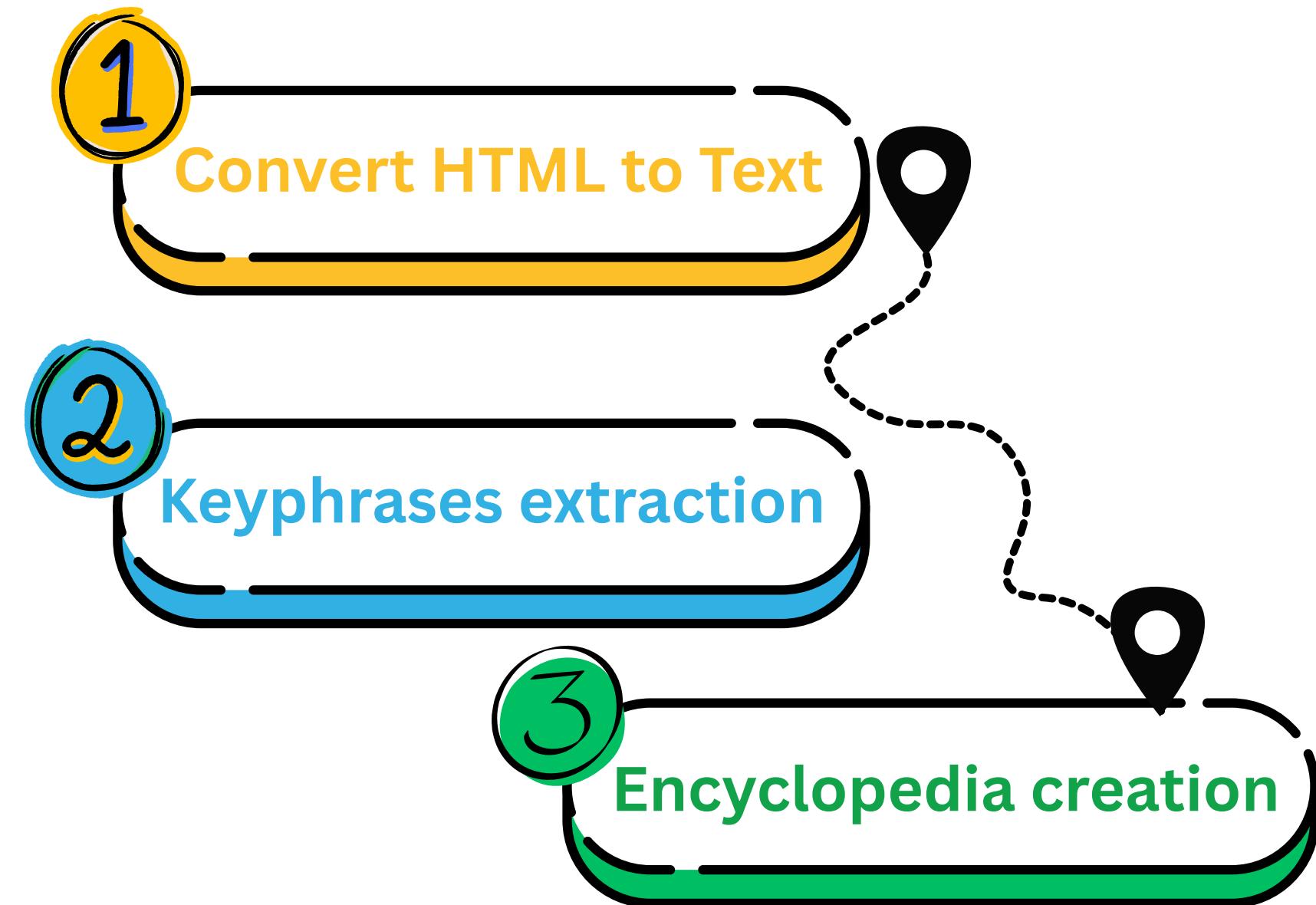
Since AR5, new evidence and awareness of current impacts and projected risks of climate change on health, well-being, migration and conflict have emerged, including greater evidence of the detrimental impacts of climate change on **mental health** (*very high confidence*). New international agreements were reached on climate change (**Paris Agreement**), disaster risk reduction (DRR) (Sendai Agreement), sustainable development (the **Sustainable Development Goals (SDGs)**), urbanisation (The New Urban Agenda), migration (Global Compact for Safe, Orderly and Regular Migration) and refugees (Global Compact on Refugees) that, if achieved, would reduce the impacts of climate change on health, well-being, migration and conflict (*very high confidence*). However, the challenges with implementing these agreements are highlighted by the **coronavirus** disease 2019 (COVID-19) **pandemic**, which exposed systemic weaknesses at community, national and international levels in the ability of societies to anticipate and respond to global risks (*high confidence*). Incremental changes in policies and strategies have proven insufficient to reduce climate-related risks to health, well-being, migration and conflict, highlighting the value of more integrated approaches and frameworks for solutions across systems and sectors that are embodied in these new international agreements (*high confidence*) {7.1.3, 7.2.1, 7.4.1, 7.4.2, 7.4.3, 7.4.6; Cross-Chapter Box COVID in Chapter 7}.

## IPCC AR6 WG II Ch : 7

- 1 Paris Agreement
- 2 Sustainable Development Goals (SDGs)
- 3 coronavirus
- 4 pandemic
- 5 mental health



# From Documents to Encyclopedia: Stepwise Process





# Convert HTML to Text



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```



Chapter 7: Health, Wellbeing and the Changing Structure of Communities | Climate Change  
of Communities  
Coordinating Lead Authors: Guéladio Cissé (Mauritania/Switzerland/France),  
Kathryn Bowen (Australia), Diarmid Campbell-Lendrum (United Kingdom), Susan Clayton (USA)  
McGregor (United Kingdom/ New Zealand), Jan Semenza (Sweden), Maria Cristina Tirado (USA)  
Banwell (Australia), Ritwika Basu (India/United Kingdom), Lea Berrang-Ford (United Kingdom)  
(Norway), Katrin Burkart (USA), Mercedes Bustamante (Brazil), Luisa Cabeza (Spain), Mart  
Winston Chow (Singapore), Mark John Costello (New Zealand/Norway/Ireland), Marlies Craig  
Kingdom), David Dodman (United Kingdom), Susan Elliott (Canada), Siri Eriksen (Norway),

**Converted 18 chapters of UN IPCC  
AR6 WG II files from HTML to TXT**

Step 1: Converting HTML to TXT ...  
Converted: chapter\_11.html → chapter\_11.txt  
Converted: chapter\_07.html → chapter\_07.txt  
Converted: chapter\_06.html → chapter\_06.txt  
Converted: chapter\_10.html → chapter\_10.txt  
Converted: chapter\_17.html → chapter\_17.txt  
Converted: chapter\_01.html → chapter\_01.txt  
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Converted: chapter\_09.html → chapter\_09.txt  
Converted: chapter\_08.html → chapter\_08.txt  
Converted: chapter\_12.html → chapter\_12.txt  
Converted: chapter\_04.html → chapter\_04.txt



# Automatic Keyphrases Extraction

TXT

txt2phrases (TF-IDF-based automatic key phrase extraction using Hugging Face Transformers for identifying most important terms in textual documents)

Since AR5, new evidence and awareness of current impacts and projected risks of climate change on health, well-being, migration and conflict have emerged, including greater evidence of the detrimental impacts of climate change on mental health (very high confidence). New international agreements were reached on climate change (Paris Agreement), disaster risk reduction (DRR) (Sendai Agreement), sustainable development (the Sustainable Development Goals (SDGs)), urbanisation (The New Urban Agenda), migration (Global Compact for Safe, Orderly and Regular Migration) and refugees (Global Compact on Refugees) that, if achieved, would reduce the impacts of climate change on health, well-being, migration and conflict (very high confidence). However, the challenges with implementing these agreements are highlighted by the coronavirus disease 2019 (COVID-19) pandemic, which exposed systemic weaknesses at community, national and international levels in the ability of societies to anticipate and respond to global risks (high confidence). Incremental changes in policies and strategies have proven insufficient to reduce climate-related risks to health, well-being, migration and conflict, highlighting the value of more integrated approaches and frameworks for solutions across systems and sectors that are embodied in these new international agreements (high confidence) {7.1.3, 7.2.1, 7.4.1, 7.4.2, 7.4.3, 7.4.6; Cross-Chapter Box COVID in Chapter 7}.



keyword	count
Climate change	106
mental health	74
Paris Agreement	21
Migration	16
disaster risk reduction	11
pandemic	10
Sustainable Development Goals	10
urbanisation	8
refugees	4

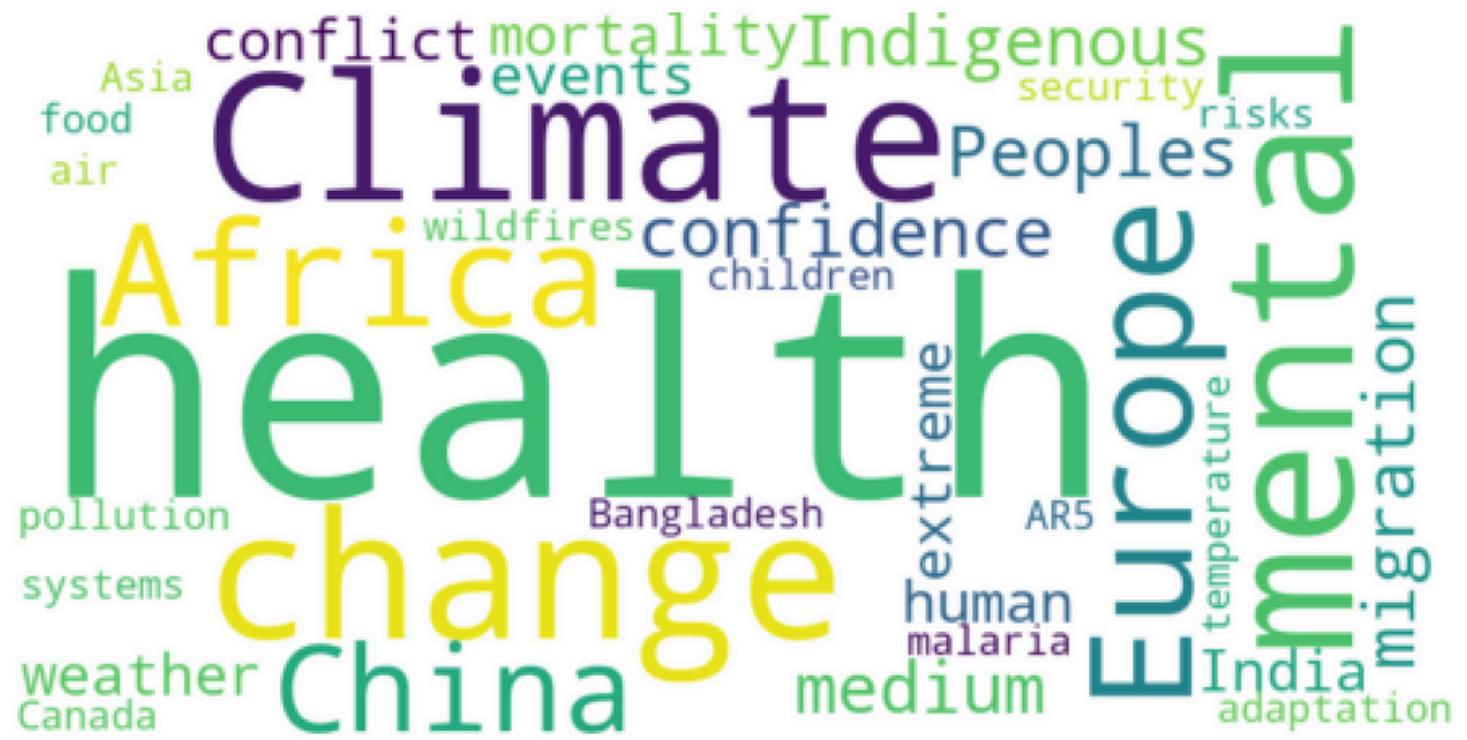
**Extracted around ~2500 keyphrases  
from thousands of pages of the  
IPCC AR6 WG II chapters**

	chapter_01_keywords.csv
	chapter_02_keywords.csv
	chapter_03_keywords.csv
	chapter_04_keywords.csv
	chapter_05_keywords.csv
	chapter_06_keywords.csv
	chapter_07_keywords.csv
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	chapter_12_keywords.csv
	chapter_13_keywords.csv
	chapter_14_keywords.csv
	chapter_15_keywords.csv
	chapter_16_keywords.csv
	chapter_17_keywords.csv
	chapter_18_keywords.csv

3

# Creating a semantic Encyclopedia

(Using **Amilib**: Extracting Definitions, Descriptions, and Images from **Wikimedia**)



# Using amilib: Extracting Definitions, Descriptions, and Images from Wikimedia

## petermr/amilib



Python library of `ami` software especially NLP,  
HTML, downloading and related convenience  
utilities

5

Contributors

3

Used by

14

Discussions

2

Stars

2

Forks



**petermr/amilib: Python library of `ami` software especially NLP,  
HTML, downloading and related convenience utilities**

Python library of `ami` software especially NLP, HTML, downloading and related  
convenience utilities - petermr/amilib



<https://github.com/petermr/amilib>

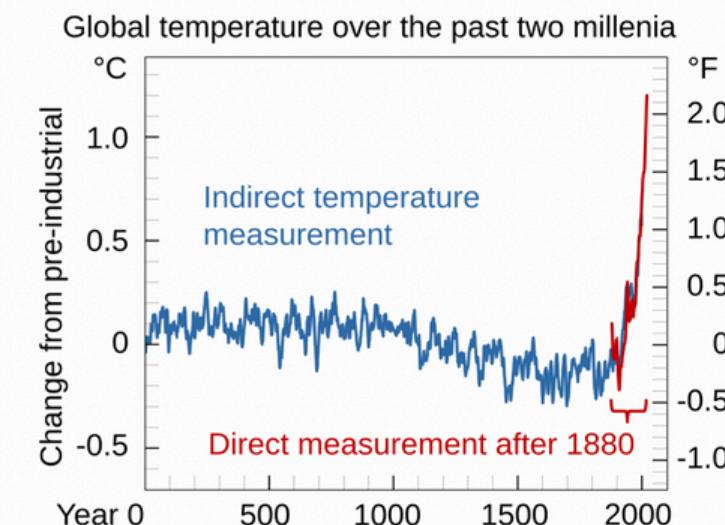
# ***Generated Encyclopedia (HTML)***

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2   </p>
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4   </div><p></p></div><div name="pandemic" term="pandemic" role="ami_entry"><
5   </p><div title="figure"><figure typeof="mw:File/Thumb"><a href="/wiki/File:
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# ***“Wikimedia enhancement”***

search term: Climate change Wikipedia Page

Present-day **climate change** includes both **global warming**—the ongoing increase in global average temperature—and its wider effects on Earth's climate system. Climate change in a broader sense also includes previous long-term changes to Earth's climate. The current rise in global temperatures is driven by human activities, especially fossil fuel (coal, oil and natural gas) burning since the Industrial Revolution. Fossil fuel use, deforestation, and some agricultural and industrial practices release greenhouse gases. These gases absorb some of the heat that the Earth radiates after it warms from sunlight, warming the lower atmosphere. Carbon dioxide, the primary gas driving global warming, has increased in concentration by about 50% since the pre-industrial era to levels not seen for millions of years.



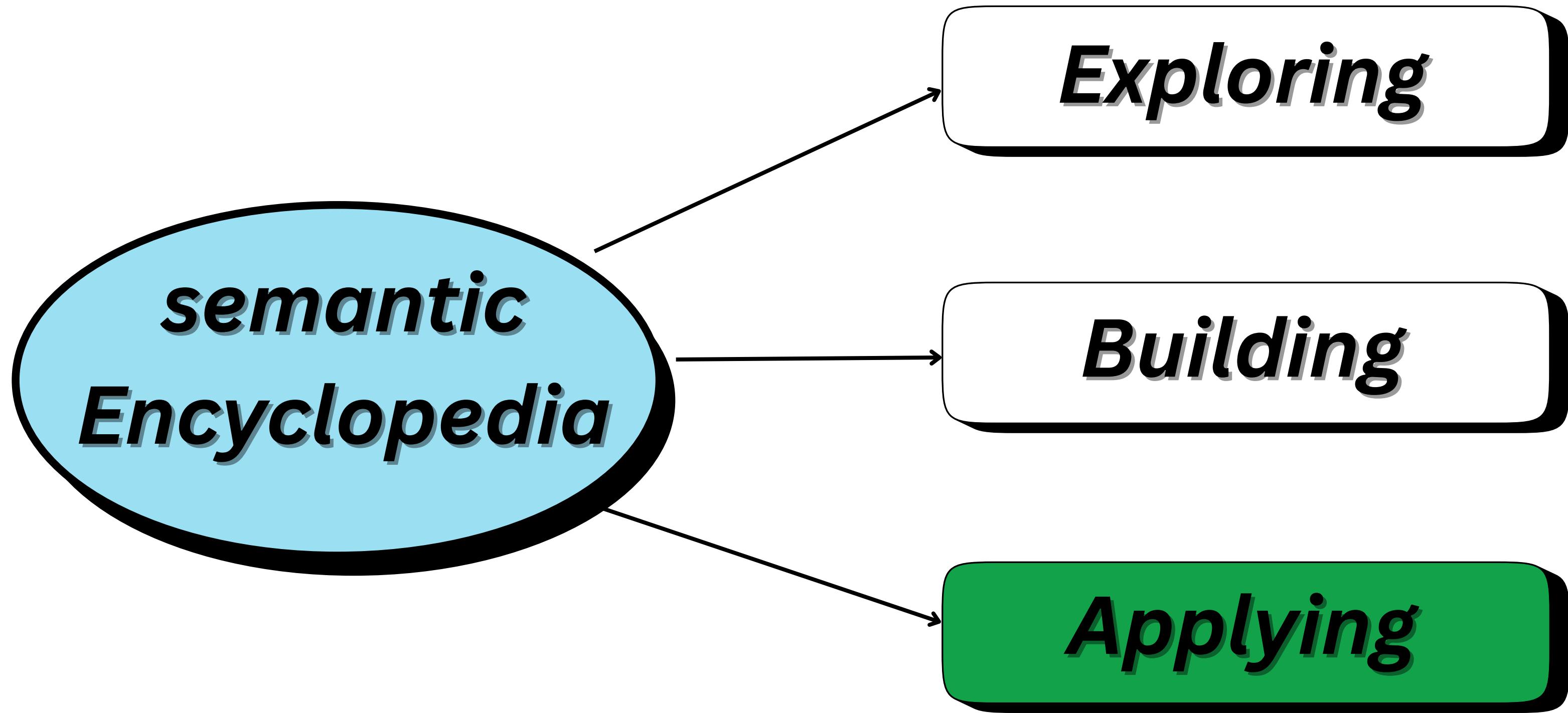
Global surface temperature reconstruction over the past 2000 years using proxy data from tree rings, corals, and ice cores in blue. Directly observed data is in red.

search term: mental health Wikipedia Page

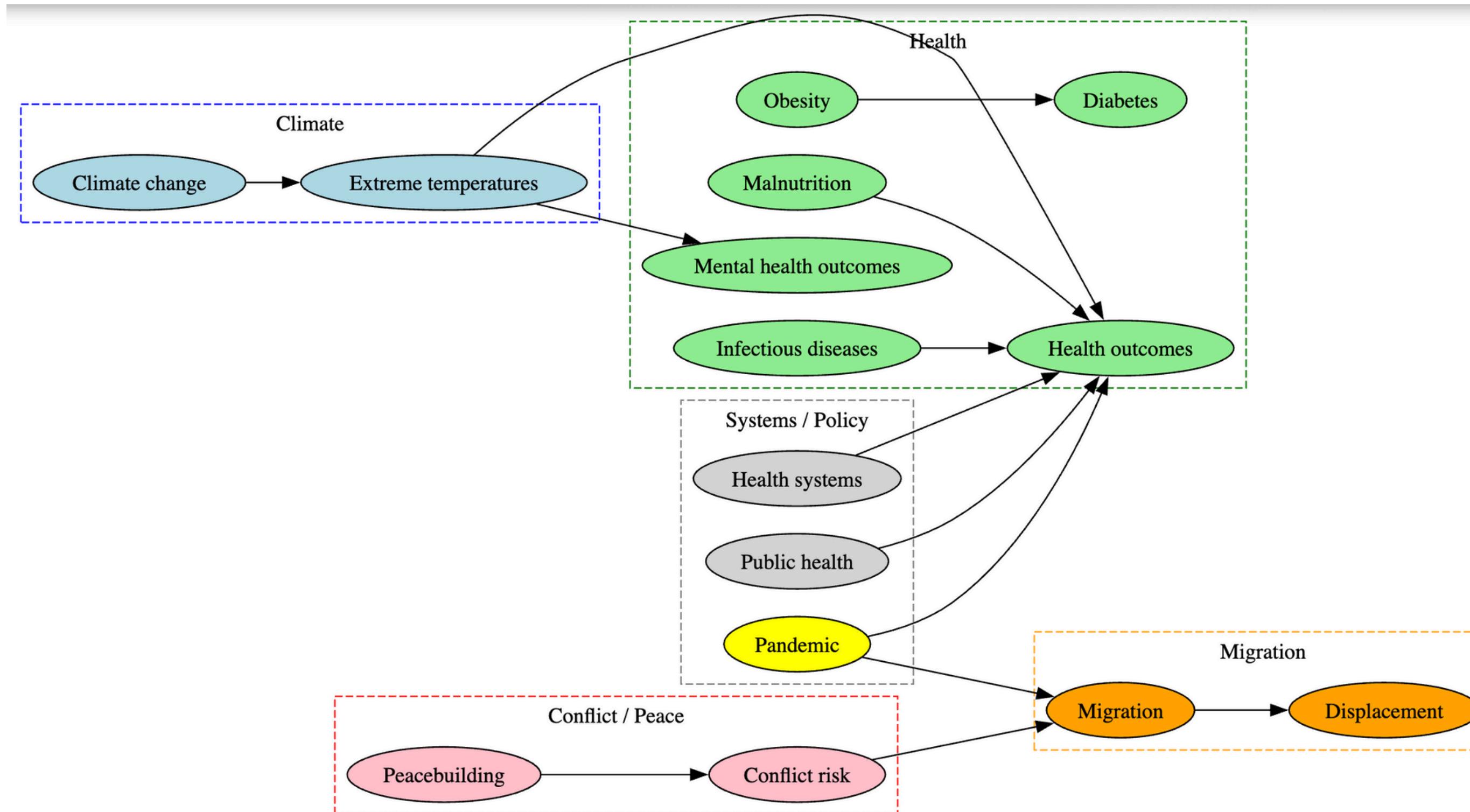
**Mental health** encompasses emotional, psychological, and social well-being, influencing cognition, perception, and behavior. Mental health plays a crucial role in an individual's daily life when managing stress, engaging with others, and contributing to life overall. According to the World Health Organization (WHO), it is a "state of well-being in which the individual realizes his or her abilities, can cope with the normal stresses of life, can work productively and fruitfully, and can contribute to his or her community". It likewise determines how an individual handles stress, interpersonal relationships, and decision-making. Mental health includes subjective well-being, perceived self-efficacy, autonomy, competence, intergenerational dependence, and self-actualization of one's intellectual and emotional potential, among others.



The Greek glyph "Ψ" or "psi" when Latinized, is an old symbol for mental health and well being



# Creating a semantic Knowledge Graph



*semantic Knowledge Graph of Climate, Health, and Policy*

# PDF Annotations for Knowledge Capture

Chapter 7

## Executive Summary

mate-related illnesses, premature deaths, malnutrition in all its forms, and threats to mental health and well-being are increasing (*very high confidence*). Climate hazards are a growing driver of voluntary migration and displacement (*high confidence*) and are contributing factor to violent conflict (*high confidence*). These impacts are often inter-connected, are unevenly distributed across and within societies, and will continue to be experienced inequitably due to differences in exposure and vulnerability (*very high confidence*). Escalating and compounding risks affecting health due to extreme weather events have been observed in all inhabited regions, and risks are expected to increase with further warming (*very high confidence*) [1.3, 7.1.4; Cross-Chapter Box COVID in Chapter 7; 7.2.1, 7.2.2, 7.2.3, 7.4, 7.3.1, 7.3.2, 7.3.3, 7.4.1, 7.4.4; Cross-Chapter Box HEALTH in Chapter 7; Cross-Chapter Box ILLNESS in Chapter 2].

uce AR5, new evidence and awareness of current impacts and projected risks of climate change on health, well-being,



We have proven insufficient to reduce climate-related risks to health, well-being, migration and conflict, highlighting the value of more integrated approaches and frameworks for solutions across systems and sectors that are embodied in these new international agreements (high confidence) {7.1.3, 7.2.1, 7.4.1, 7.4.2, 7.4.3, 7.4.6; Cross-Chapter Box COVID in Chapter 7}.

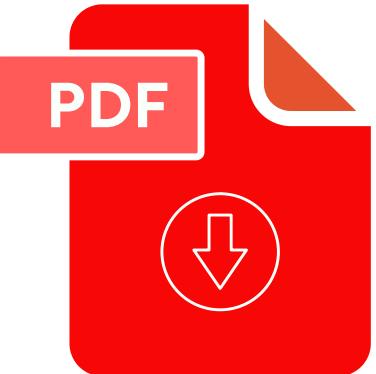
With proactive, timely and effective adaptation, many risks to human health and well-being could be reduced and some potentially avoided (*very high confidence*). A significant adaptation exists for human health and well-being and for responses to disaster risks (*very high confidence*). Nationally Determined Contributions (NDCs) to the Paris Agreement from low- and middle-income countries identify health as a priority concern. National planning on health and climate change is advancing, but the comprehensiveness of strategies and plans need to be strengthened, and implementing action on health and climate change priorities remains challenging (*high confidence*). Multi-sectoral collaboration on health and climate change policy is evident, with uneven progress, and financial support for health

## **Health, Wellbeing and the Changing Structure of Communities**

adaptation is only 0.5% of dispersed multi-lateral climate finance projects (*high confidence*). This level of investment is insufficient to protect population health and health systems from most climate-sensitive health risks (*very high confidence*) {7.4.1, 7.4.2, 7.4.3}.

imate resilient development has a strong potential to generate substantial co-benefits for health and well-being and reduce risks of involuntary displacement and conflict (*very high confidence*). Sustainable and climate resilient development decreases exposure, vulnerability and societal inequity and increases timely and effective adaptation and mitigation more broadly, has the potential to reduce but not necessarily eliminate climate change impacts on health, well-being, involuntary migration and conflict (*high confidence*). This development includes greenhouse gas (GHG) emission reductions through clean energy and transport; climate-resilient urban planning; sustainable food systems that lead to healthier diets; universal access to healthcare and social protection systems; wide-scale, proactive adaptive capacity building for climate change; and achievement of the SDGs (*very high confidence*). Meeting the objectives of the Global Compact for Safe, Orderly, and Regular Migration and building inclusive and integrative approaches to climate-resilient peace would help prevent health risks related to migration and conflict (*high agreement, medium evidence*). The net global financial gains from these co-benefits to health and well-being, including avoided hospitalisations, morbidity and premature deaths, exceed the financial costs of mitigation (*high confidence*). An example of co-benefits, the financial value of health benefits from improved air quality alone is projected to be greater than the costs of meeting the goals of the Paris Agreement (*high confidence*). Pathways to climate resilient development, including health and healthcare systems, involve balancing trade-offs between development pathways underpinning climate mitigation and adaptation (*medium confidence*) {7.4.6; Cross-Chapter Box HEALTH Chapter Box MIGRATE in Chapter 7}.

transformations are needed to resilient development pathways (CRDPs) (high confidence). Migration and conflict avoidance (high confidence). Transformational changes will be more effective if they are responsive to regional, local and Indigenous knowledge and consider the many dimensions of vulnerability, including those that are gender- and age-specific (*high confidence*). A key pathway towards climate resilience in the health sector is universal access to primary healthcare, including mental healthcare (*high confidence*). Investments in other sectors and systems that improve upon the social determinants of health have the potential to reduce vulnerability to climate-related health risks (*high confidence*). Links between climate change, adaptation, migration and labour markets highlight the value of providing better mobility options as part of transformative change (*medium confidence*). Strong governance and gender-sensitive approaches to natural resource management can reduce the risk of inter-group conflict in climate-disrupted areas (*medium confidence*) (medium confidence).



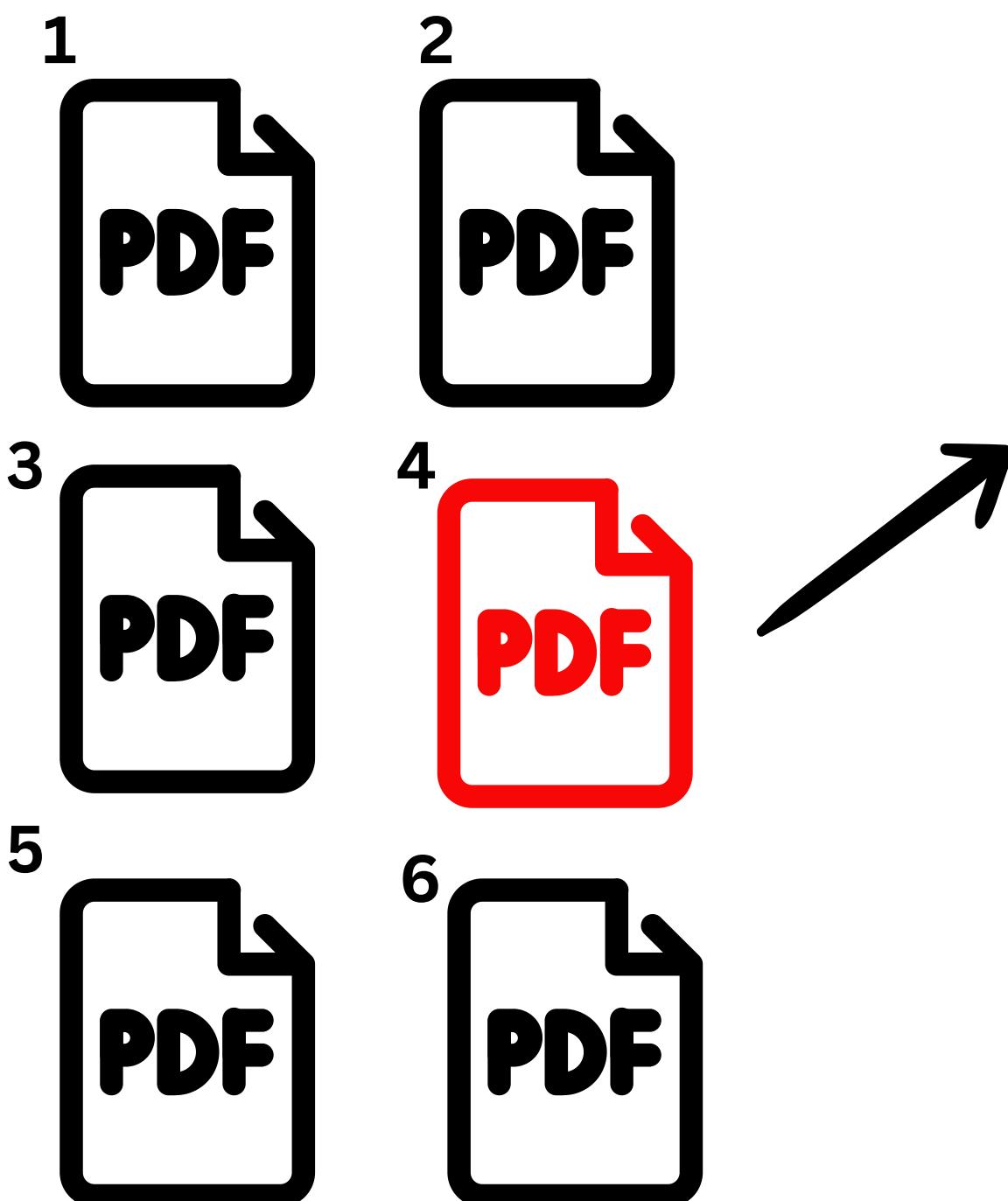
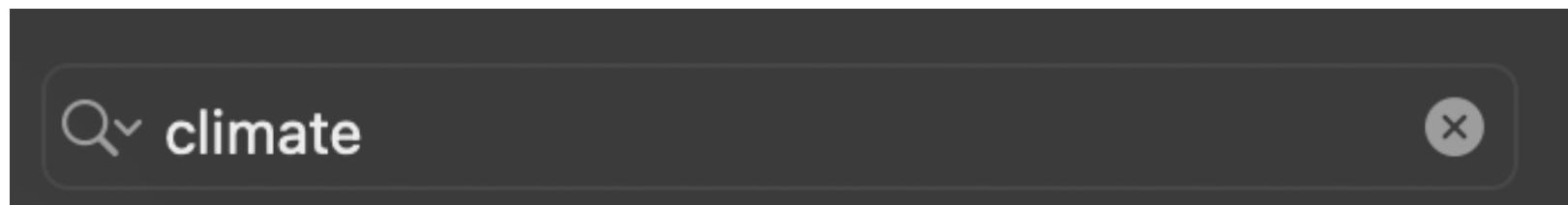
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search term: Paris Agreement Wikipedia Page

The **Paris Agreement** (also called the **Paris Accords** or **Paris Climate Accords**) is an international treaty on climate change that was signed in 2016. The treaty covers climate change mitigation, adaptation, and finance. The Paris Agreement was negotiated by 196 parties at the 2015 United Nations Climate Change Conference near Paris, France. As of February 2023, 195 members of the United Nations Framework Convention on Climate Change (UNFCCC) are parties to the agreement. Of the three UNFCCC member states which have not ratified the agreement, the only major emitter is Iran. The United States, the second largest emitter, withdrew from the agreement in 2020, rejoined in 2021, and announced its withdrawal again in 2025.



# Content Indexing and Search



## Chapter 7

### Health, Wellbeing and the Changing Structure of Communities

#### Executive Summary

Climate-related illnesses, premature deaths, malnutrition in all its forms, and threats to mental health and well-being are increasing (*very high confidence*). Climate hazards are a growing driver of involuntary migration and displacement (*high confidence*) and are a contributing factor to violent conflict (*high confidence*). These impacts are often inter-connected, are unevenly distributed across and within societies, and will continue to be experienced inequitably due to differences in exposure and vulnerability (*very high confidence*). Cascading and compounding risks affecting health due to extreme weather events have been observed in all inhabited regions, and risks are expected to increase with further warming (*very high confidence*) (7.1.3, 7.1.4; Cross-Chapter Box COVID in Chapter 7; 7.2.1, 7.2.2, 7.2.3, 7.2.4, 7.3.1, 7.3.2, 7.3.3, 7.4.1, 7.4.4; Cross-Chapter Box HEALTH in Chapter 7; Cross-Chapter Box ILLNESS in Chapter 2).

Since AR5, new evidence and awareness of current impacts and projected risks of climate change on health, well-being, migration and conflict have emerged, including greater evidence of the detrimental impacts of climate change on mental health (*very high confidence*). New international agreements were reached on climate change (Paris Agreement), disaster risk reduction (DRR) (Sendai Agreement), sustainable development (the Sustainable Development Goals (SDGs)), urbanisation (The New Urban Agenda), migration (Global Compact for Safe, Orderly and Regular Migration) and refugees (Global Compact on Refugees) that, if achieved, would reduce the impacts of climate change on health, well-being, migration and conflict (*very high confidence*). However, the challenges with implementing these agreements are highlighted by the coronavirus disease 2019 (COVID-19) pandemic, which exposed systemic weaknesses at community, national and international levels in the ability of societies to anticipate and respond to global risks (*high confidence*). Incremental changes in policies and strategies have proven insufficient to reduce climate-related risks to health, well-being, migration and conflict, highlighting the value of more integrated approaches and frameworks for solutions across systems and sectors that are embodied in these new international agreements (*high confidence*) (7.1.3, 7.2.1, 7.4.1, 7.4.2, 7.4.3, 7.4.6; Cross-Chapter Box COVID in Chapter 7).

With proactive, timely and effective adaptation, many risks for human health and well-being could be reduced and some potentially avoided (*very high confidence*). A significant adaptation gap exists for human health and well-being and for responses to disaster risks (*very high confidence*). Nationally Determined Contributions (NDCs) to the Paris Agreement from low- and middle-income countries identify health as a priority concern. National planning on health and climate change is advancing, but the comprehensiveness of strategies and plans need to be strengthened, and implementing action on key health and climate change priorities remains challenging (*high confidence*). Multi-sectoral collaboration on health and climate change policy is evident, with uneven progress, and financial support for health

adaptation is only 0.5% of dispersed multi-lateral climate finance projects (*high confidence*). This level of investment is insufficient to protect population health and health systems from most climate-sensitive health risks (*very high confidence*) (7.4.1, 7.4.2, 7.4.3).

Climate resilient development has a strong potential to generate substantial co-benefits for health and well-being and to reduce risks of involuntary displacement and conflict (*very high confidence*). Sustainable and climate resilient development that decreases exposure, vulnerability and societal inequity and that increases timely and effective adaptation and mitigation more broadly, has the potential to reduce but not necessarily eliminate climate change impacts on health, well-being, involuntary migration and conflict (*high confidence*). This development includes greenhouse gas (GHG) emission reductions through clean energy and transport; climate-resilient urban planning; sustainable food systems that lead to healthier diets; universal access to healthcare and social protection systems; wide-scale, proactive adaptive capacity building for climate change; and achievement of the SDGs (*very high confidence*). Meeting the objectives of the Global Compact for Safe, Orderly, and Regular Migration and building inclusive and integrative approaches to climate-resilient peace would help prevent health risks related to migration and conflict (*high agreement, medium evidence*). The net global financial gains from these co-benefits to health and well-being, including avoided hospitalisations, morbidity and premature deaths, exceed the financial costs of mitigation (*high confidence*). As an example of co-benefits, the financial value of health benefits from improved air quality alone is projected to be greater than the costs of meeting the goals of the Paris Agreement (*high confidence*). All pathways to climate resilient development, including those for the health and healthcare systems, involve balancing complex synergies and trade-offs between development pathways and the options that underpin climate mitigation and adaptation pathways (*very high confidence*) (7.4.6; Cross-Chapter Box HEALTH in Chapter 7; Cross-Chapter Box MIGRATE in Chapter 7).

Key transformations are needed to facilitate climate resilient development pathways (CRDPs) for health, well-being, migration and conflict avoidance (*high confidence*). The transformational changes will be more effective if they are responsive to regional, local and Indigenous knowledge and consider the many dimensions of vulnerability, including those that are gender- and age-specific (*high confidence*). A key pathway towards climate resilience in the health sector is universal access to primary healthcare, including mental healthcare (*high confidence*). Investments in other sectors and systems that improve upon the social determinants of health have the potential to reduce vulnerability to climate-related health risks (*high confidence*). Links between climate risks, adaptation, migration and labour markets highlight the value of providing better mobility options as part of transformative change (*medium confidence*). Strong governance and gender-sensitive approaches to natural resource management can reduce the risk of inter-group conflict in climate-disrupted areas (*medium confidence*)

<sup>1</sup> In this Report, the following summary terms are used to describe the available evidence: limited, medium, or robust; and for the degree of agreement: low, medium, or high. A level of confidence is expressed using five qualifiers: very low, low, medium, high, and very high, and typeset in italics, e.g., *medium confidence*. For a given evidence and agreement statement, different confidence levels can be assigned, but increasing levels of evidence and degrees of agreement are correlated with increasing confidence.

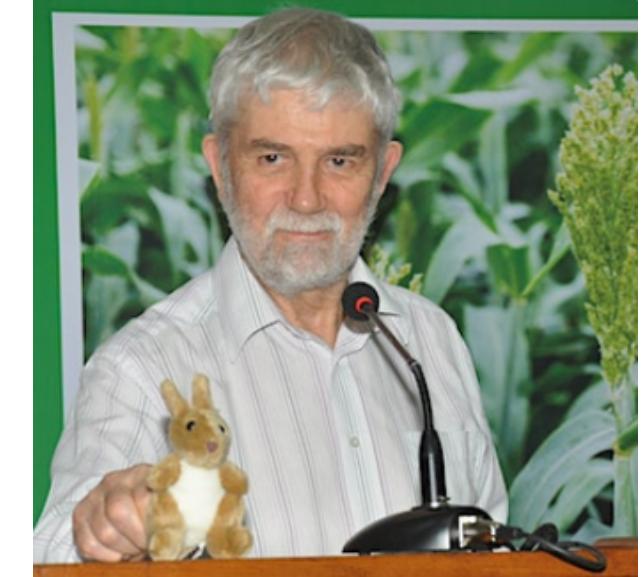
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**Prof. Peter Murray Rust**



**Mr. Simon Worthington**



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