

This prompt offers two kinds of help:

- A brief overview of the kinds of questions you might wish to explore as you study how climate change is likely to affect the food supply;
- A suggested strategy for how to search the literature as you prepare to write your paper.

## OVERVIEW – CLIMATE AND FOOD

Studies suggest that climate change will significantly impact both agriculture and ocean catch. Impacts are already observed in some parts of the world. Impacts are predicted to worsen. How much worse will depend on how many degrees average global temperatures will rise, how that will affect patterns of rainfall (too much or too little). Changes in ocean temperatures and increased acidification are predicted to impact ocean catch. “Downstream” impacts of increased food insecurity include (but are not limited to): unrest, protest, social conflict and migration. In this part of the research module, you will explore impacts on food supplies and the predicted social impacts of increasing hunger.

Breakdown of CORE ISSUES for research

The basics: What are the impacts: Already observed now? Predicted? If temperatures increase = 2oC (Paris Accords target)? If temperatures increase 4oC or more?

The basics: Differences among nations/regions? (evidence or argument that some places on Earth will experience greater impacts than will others)

“Downstream” impacts of diminished food supply, increasing food insecurity – population:  
Impacts on population’s health status (health impacts of poor nutrition)

“Downstream” impacts of diminished food supply, increasing food insecurity – economic:  
Impacts on population’s vitality, productivity (hungry people are poor workers)  
Impacts on communities directly dependent on farming, fishing  
Rising price of food fuels more general inflation?

“Downstream” impacts of diminished food supply, increasing food insecurity – political  
Delegitimation of government; civil unrest, protest, riot, uprising  
Migration  
Impacts of migration on the places refugees are leaving  
Impacts of migration on the “destination” places (economic burden; adverse political responses such as xenophobia, racism, right wing populism)

## SUGGESTED STRATEGY FOR SEARCHING THE LITERATURE

I recommend the following sequence for searching the literature:

- 1 Start with a search of the most recent **reports from top scientific bodies and government agencies**;
- 2 Search **academic articles** using Google Scholar (scholar.google.com);
- 3 Do a **more general search** using Google or another search engine;
- 4 Search the **best newspapers** and **reputable climate websites**.  
(NOTE that I do not suggest using Wikipedia.)

### 1 Search the most recent **reports from top scientific bodies and government agencies**

(NOTE: There are many excellent reports one can consult. You will find a lot of repetition, so you do not need to consult every source. Here I start with a handful of the most recent reports, followed by a more complete list.)

These publications should, in most cases, supply you with all you need:

IPCC's most recent full set of reports:

<https://www.ipcc.ch/report/ar5/>

EPA: [https://19january2017snapshot.epa.gov/climate-impacts/climate-impacts-society\\_.html](https://19january2017snapshot.epa.gov/climate-impacts/climate-impacts-society_.html)

U.S. Global Change Research Program:

<https://science2017.globalchange.gov/> (the science)

<https://nca2018.globalchange.gov/> (the impacts)

American Meteorological Society:

[www.ametsoc.net/sotc2017/StateoftheClimate2017\\_lowres.pdf](http://www.ametsoc.net/sotc2017/StateoftheClimate2017_lowres.pdf)

A more complete list of best scientific and governmental sources:

#### International

Intergovernmental Panel on Climate Change  
United Nations Environmental Programme (UNEP)  
World Meteorological Organization

#### Agencies of the U.S. federal government

Environmental Protection Agency (EPA)  
National Oceanographic and Atmospheric Administration (NOAA)  
National Aeronautics and Space Administration (NASA)  
U.S. Global Change Research Program

#### Scientific bodies – U.S.

National Academic of Sciences  
Climate Change at the National Academies (climatechange@nas.edu)  
National Science Foundation

#### Other professional bodies – American Meteorological Society

## 2 Search **academic articles** using Google Scholar (scholar.google.com)

(NOTE: Narrow and focus your search by using several phrases in quotes – such as “climate change”. For example, if you are searching for how climate change will increase the frequency of extreme weather events, don’t just enter “climate change,” search, instead for” “climate change” AND “extreme weather events”)

Search terms to use (you may certainly choose others):

“climate change” AND x, where x can be:

food  
hunger  
food security  
agriculture  
fishing  
fisheries

(NOTE: For some citations you find on Google Scholar, you can directly download the PDF. For other citations, you may be able to find and download PDFs if your University library offers on line access to academic journals.)

## 3 Do a **more general search** using Google or another search engine

Use the same search terms to do a general search on Google or another search engine.

This will bring up information more recent than you find on scholar.google.com (it takes several years for research to be published in academic journals).

## 4 Search the **best newspapers** and **reputable climate websites**

New York Times, Washington Post, The Guardian

On line sources

Climate Central  
GRIST  
Society of Environmental Journalists  
The Daily Climate  
Climate Nexus  
InsideClimate News  
DeSmogBlog  
Skepticalscience.com  
Yale 350

(NOTE about on line sources: You will run into a lot of denialist disinformation on the internet, on websites, on blogs, on youtube. FYI, skepticalscience.com has a comprehensive list of denialist talking points (and refutations of those talking points).

See, for example: <https://www.skepticalscience.com/argument.php> )

Finally, here are some good citations to help you get started:

“Climate Change Is Transforming the World's Food Supply,”  
<https://www.livescience.com/57921-climate-change-is-transforming-global-food-supply.html>

“Climate Changes and Food Supply,” [www.ciesin.org/docs/004-138/004-138.html](http://www.ciesin.org/docs/004-138/004-138.html)

“Climate Impacts on Agriculture and Food Supply,”  
[https://19january2017snapshot.epa.gov/climate-impacts/climate-impacts-agriculture-and-food-supply\\_.html](https://19january2017snapshot.epa.gov/climate-impacts/climate-impacts-agriculture-and-food-supply_.html)

“Farmed Out: How Will Climate Change Impact World Food Supplies?”  
<https://www.scientificamerican.com/article/how-will-climate-change-impact-world-food-supplies/>

“Changes in climate extremes, fresh water availability and vulnerability to food insecurity projected at 1.5°C and 2°C global warming with a higher-resolution global climate model,”  
<http://rsta.royalsocietypublishing.org/content/376/2119/20160452>

“Climate change could slash staple crops: Study,”  
[www.climatecentral.org/news/climate-change-could-slash-staple-crops-21460](http://www.climatecentral.org/news/climate-change-could-slash-staple-crops-21460)

“A warming planet will devastate fisheries,”  
<https://www.nature.com/articles/d41586-018-02884-4>

Increase in crop losses to insect pests in a warming climate  
<http://science.sciencemag.org/content/361/6405/916>

Some new good sources, added March, 2021:

<https://insideclimatenews.org/news/15072019/world-hunger-rising-climate-shocks-and-conflicts-and-economic-slumps-slow-recovery>

<https://www.nationalgeographic.com/science/2019/10/billions-face-water-food-insecurity/>

<https://www.cbsnews.com/news/climate-change-tropical-rain-belt-water-food-supply/>

<https://www.dailyclimate.org/climate-change-will-continue-to-widen-gaps-in-food-security-new-study-finds-2647877151.html>

IPCC, “Climate Change and Land: An IPCC Special Report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems,” <https://www.ipcc.ch/srccl/>