

Scopus® AI

Trusted content.

Powered by responsible AI.



## Quick Reference Guide

# Scopus<sup>®</sup> AI

Trusted content.

Powered by responsible AI.

Scopus AI is an intuitive and intelligent search tool powered by generative AI (GenAI) that enhances your understanding and enriches your insights with unprecedented speed and clarity.

Built in close collaboration with the academic community, it serves as your trusted guide through the vast expanse of human knowledge found on Scopus, the world's largest multidisciplinary and trusted abstract and citation database.



ELSEVIER

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# Starting your Scopus AI query

## Start exploring

Documents Authors Researcher Discovery Organizations **Scopus AI New** **A**

Explore new topics and discover relevant references from 2013 [How it works](#)

**B**

**Search examples**

- ↳ What role does multisensory integration play in the formation of emotional memories?
- ↳ How do urban green spaces contribute to mental well-being? **C**
- ↳ How can game theory be applied to corporate compliance programs?

- A.** From the Scopus homepage page, **select the ‘Scopus AI’ tab.**
- B.** **Enter** your natural-language query into the search box.
- C.** **Search examples** demonstrate how you can frame your query.

## Search tips

Ask questions about a subject in a natural, conversational manner

# Search results overview

What would you like to learn more about?  
What threat does climate change pose to coffee production?

## What threat does climate change pose to coffee production?

**Summary** **A**

Climate change poses a significant threat to coffee production, impacting both yields and quality [1](#). The vulnerability of coffee farmers in Central America to the impact of climate change is exacerbated by financial insecurity [2](#). The Intergovernmental Panel on Climate Change (IPCC) reports indicate that climate change will reduce worldwide coffee yields on average and decrease coffee-suitable land by 2050 [3](#). Here's how climate change threatens coffee production:

- **Impact on Yields and Quality:** Climate change adversely affects coffee production, leading to lower yields and reduced quality [1](#).
- **Financial Insecurity:** Coffee farmers, particularly in Central America, are highly vulnerable to the impact of climate change, which is worsened by financial insecurity [2](#).
- **Reduction In Suitable Land:** The IPCC reports suggest a reduction in coffee-suitable land due to climate change, which could significantly impact production [3](#).

The impacts of climate change on coffee production include a reduction in suitable production areas, lower yields, increased frequency of extreme climate events, and a greater incidence of pests and diseases [1](#). The future of coffee production in Brazil, the world's largest Arabica coffee producer, is at risk due to climate change, with potential productivity losses and concerns about pests and diseases [4](#). However, there is an urgent need for sustainable management practices and adaptive measures to enhance the resilience of coffee production and livelihoods to climate change [1](#). While the available research emphasizes the negative impact of climate change on coffee production, more applied research is needed to understand the problem and identify risks and threats for timely adaptation and mitigation strategies [5](#).

Unfortunately, none of the abstracts directly address the specific effects of climate change on coffee production in terms of the impact on the taste and flavor of coffee.

[📄](#) [🔗](#) [🔄](#)

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**Expanded summary** **D** [✓](#)

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**Concept Map** **E** [✓](#)

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**Topic experts** **F** [✓](#)

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**Go deeper** **G**

- ↳ How does rising global temperatures affect the growth and yield of coffee plants?
- ↳ What are the specific climate-related factors that contribute to the spread of coffee diseases and pests?

---

**References** **B**

- 1 Opportunities for enhancing the climate resilience of coffee production through improved crop, soil and water management  
Bracken P., Burgess P.J., Girkin N.T.  
*Agroecology and Sustainable Food Systems* [🔗](#) 2023
- 2 Coffee and chocolate in danger  
Gross M.  
*Current Biology* [🔗](#) 2014
- 3 A Systematic Review on the Impacts of Climate Change on Coffee Agrosystems  
Bilen C., El Chami D., Mereu V., (...), Spano D.  
*Plants* [🔗](#) 2023

[Show all 5 references](#)

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**Foundational documents** **C**

270 citations  
The Impact of Climate Change on Indigenous Arabica Coffee (Coffea arabica): Predicting Future Trends and Identifying Priorities  
A.P., Davis, Aaron P., T.W., Gole, Tadesse Woldemariam, S., Baena, Susana, J.F., Moat, Justin F.  
*PLoS ONE* [🔗](#) 2012

153 citations  
Towards a climate change adaptation strategy for coffee communities and ecosystems in the Sierra Madre de Chiapas, Mexico  
G., Schroth, Gotz, P.R., Läderach, Peter Roman, J., Dempewolf, Jan, (...), J., Ramírez-Villegas, Julián  
*Mitigation and Adaptation Strategies for Global Change* [🔗](#) 2009

[Show more documents](#)

**A. Summary** — Scopus AI locates relevant documents published since 2013 and synthesizes the content of their abstracts to create an easy-to-follow Summary.

**B. References** — The Summary shows you the number of sources used to compile it (currently up to 10) and provides an option to view a list of the references, as well as their associated abstracts.

**C. Foundational documents** — The most influential papers in Scopus on your topic, i.e. the papers that have received the highest number of citations from the papers identified for writing the Summary.

**D. Expanded Summary** — Provides a more comprehensive and in-depth response.

**E. Concept map** — A downloadable visual that uses keywords to provide a bird's-eye view of the topic space.


**F. Topic experts** — Identify the leading authors based on your query alongside explanations of their relevant expertise.

**G. Go deeper** — Offers relevant queries for further exploration, leading to deeper insights in various research fields.

# Summary with Scopus references

Explore new topics and discover relevant references from 2013 [How it works](#) **B**

What would you like to learn more about?

What threat does climate change pose to coffee production? 

## What threat does climate change pose to coffee production?

### Summary **A**

Climate change poses a significant threat to coffee production, impacting both yields and quality [1](#) [2](#) [3](#) . The vulnerability of coffee farmers, particularly in Central America, is exacerbated by financial insecurity [4](#) . The Intergovernmental Panel on Climate Change (IPCC) reports indicate that climate change will reduce worldwide yields on average and decrease coffee-suitable land by 2050 [2](#) . The impacts of climate change on coffee production include a reduction in suitable production areas, lower yields, increased frequency of extreme climate events, and a greater incidence of pests and diseases [1](#) [2](#) [3](#) . The phenomenon of "climate change" could negatively affect coffee crops due to observed greater frequency of climatic extremes [5](#) [6](#) . Additionally, Brazil, the world's largest Arabica coffee producer, faces risks, vulnerabilities, and susceptibilities to pests and diseases under current and future climates, with projected negative impacts on coffee plantations [3](#) . To address these challenges, urgent action is needed to enhance the resilience of coffee production and livelihoods to climate change through sustainable management practices, policy interventions, and stakeholder engagement [1](#) . **In conclusion, climate change poses a multifaceted threat to coffee production, necessitating immediate measures to mitigate its adverse effects.**



### References **C**

- 1** Opportunities for enhancing the climate resilience of coffee production through improved crop, soil and water management **D**  
Bracken P., Burgess P.J., Girkin N.T. **E**  
*Agroecology and Sustainable Food Systems* [↗](#) 2023 **F**
- 2** A Systematic Review on the Impacts of Climate Change on Coffee Agrosystems  
Bilen C., El Chami D., Mereu V., (...), Spano D.  
*Plants* [↗](#) 2023
- 3** Climate risks and vulnerabilities of the Arabica coffee in Brazil under current and future climates considering new CMIP6 models  
Dias C.G., Martins F.B., Martins M.A.  
*Science of the Total Environment* [↗](#) 2024

Show all 6 references **G**

**A. Summary** — Scopus AI locates relevant documents published since 2013 and synthesizes the content of their abstracts to create an easy-to-follow Summary.

**B. How it works** — Click on this link to for more information on Scopus AI and to share feedback.

**C. References** — This section provides a list of references used to generate the Summary. These are numbered so you can see where each contributed to the Summary.

**D. Document title** — Click on the article title to view the 'Summary Reference' panel which includes the complete abstract with a link to document details page.

**E. Document author** — Click on an author name to view a 'Author profile preview' panel with a link to view the full Scopus Author Profile.

**F. Source details** — Click on the source name to view a comprehensive Scopus Source details page.

**G. Show all references** — Click here to access the 'Summary reference' panel with information and links for all references used to generate your query Summary.

**H. Copy Summary and references** — Click here to copy the Summary and references to your clipboard (Note: each reference includes a URL to its Scopus Document details page).



# Foundational documents

**Foundational documents** **A**

270 citations

**The Impact of Climate Change on Indigenous Arabica Coffee (Coffea arabica): Predicting Future Trends and Identifying Priorities** **B**

A.P., Davis, Aaron P., T.W., Gole, Tadesse Woldemariam, S., Baena, Susana, J.F., Moat, Justin F. **C**

**PLoS ONE** **D** 2012

153 citations

**Towards a climate change adaptation strategy for coffee communities and ecosystems in the Sierra Madre de Chiapas, Mexico**

G., Schroth, Gotz, P.R., Läderach, Peter Roman, J., Dempewolf, Jan, (...), J., Ramírez-Villegas, Julián **E**

**Mitigation and Adaptation Strategies for Global Change** 2009

[Show more documents](#)

**More documents** **G**

Foundational documents   Related documents

Foundational documents are cited by two or more of the references used to create your summary.

276 citations • Commonly cited by 12

**The Impact of Climate Change on Indigenous Arabica Coffee (Coffea arabica): Predicting Future Trends and Identifying Priorities** **F**

Davis, A.P. ↗, Gole, T.W. ↗, Baena, S. ↗, Moat, J.F. ↗ **F**

**PLoS ONE** 2012

[Show abstract](#) **F**

156 citations • Commonly cited by 10

**Towards a climate change adaptation strategy for coffee communities and ecosystems in the Sierra Madre de Chiapas, Mexico**

Schroth, G. ↗, Läderach, P.R. ↗, Dempewolf, J. ↗, (...), Ramírez-Villegas, J. ↗

**Mitigation and Adaptation Strategies for Global Change** 2009

[Show abstract](#)

129 citations • Commonly cited by 10

**An integrated framework for assessing vulnerability to climate change and developing adaptation strategies for coffee growing families in mesoamerica**

Baca, M. ↗, Läderach, P.R. ↗, Hagggar, J.P. ↗, (...), Ovalle, O. ↗

**PLoS ONE** 2014

[Show abstract](#)

318 citations • Commonly cited by 9

[Export all documents](#) **H**

File types

- CSV
- RIS
- BibTeX
- Plain text

Reference managers

- Mendeley
- Reworks (RIS)
- Zotero (RIS)
- EndNote (RIS)

Platforms

- SciVal

[Export all documents](#) **H**

**A. Foundational documents** — The most influential papers in Scopus on your topic, i.e. the papers that have received the highest number of citations from the papers identified for writing the Summary.

**B. Document title** — Click on the article title to view the 'Foundational document' summary panel which includes the complete abstract with a link to document details page.

**C. Document author** — Click on an author name to view the 'Author profile preview' panel with link to view the full Scopus Author Profile.

**D. Source details** — Click on the source name to view a comprehensive Scopus Source details page.

**E. Show more documents** — Click this link to view 'More documents' panel with additional Foundational documents related to your query.

**F. Show / hide abstract** — This link displays the complete abstract without visiting the document details page. When showing the abstract, the link changes to 'Hide abstract.'

**G. Related documents** — Displays documents that are related to the Foundational documents.

**H. Export all documents** — Allows you to export the document information for the list of Foundational documents or Related documents in a variety of formats.

# Expanded summary

## Expanded summary **A**

## **B** ^

The impact of climate change on coffee production is multifaceted, affecting yield, quality, environmental factors, and the economic implications for the industry. Here's a breakdown of the key points supported by the academic abstracts:

### Impact on Yield and Quality: **C**

- Climate change negatively affects coffee production through a reduction in suitable production areas, lower yields, and increased frequency of extreme climate events [1](#) [2](#) [3](#) . **D**
- The phenomenon of "climate change" could lead to a greater pressure on coffee production systems, directly impacting the livelihoods of producers [4](#) .
- Temperature increases and changes in precipitation patterns have already resulted in reductions in coffee yield, particularly in regions like Southeast Brazil [3](#) [5](#) .

### Environmental Factors Affected by Climate Change:

- Climate change impacts include declines in coffee yield, loss of coffee-optimal areas, and increased distribution of pests and diseases, which indirectly influence coffee cultivation [6](#) .
- Changes in temperature, precipitation, and light exposure, as well as water stress, have been identified as significant environmental factors affecting coffee quality [7](#) [8](#) .
- The suitability areas for coffee growth are expected to reduce due to climate change, potentially forcing farmers to switch to the production of other cash crops [5](#) .

### Economic Implications:

- The economic implications of climate change on the coffee industry are substantial, with potential negative impacts on the quantity and quality of roasted coffee, which depend on the farmers [9](#) .
- Smallholder coffee farmers, who represent a majority of coffee producers, are highly vulnerable to the impact of climate change, exacerbated by financial insecurity [10](#) .

### Mitigation Strategies:

- Sustainable management practices are urgently needed to enhance the resilience of coffee production and livelihoods to climate change [1](#) .
- Potential environmental solutions to mitigate the impact of climate change on coffee production include altitudinal shifts, new resilient cultivars, altering agrochemical inputs, and agroforestry [1](#) .
- Strategies such as afforestation of degraded areas with coffee agroforestry systems and boundary tree plantings have shown strong synergies between adaptation and mitigation [11](#) .

In conclusion, the academic abstracts provide substantial evidence of the threat posed by climate change to coffee production, including its impact on yield, quality, environmental factors, and the economic implications for the industry. The urgent need for sustainable practices to mitigate these impacts is evident, with potential solutions such as altering cultivation practices and implementing adaptation strategies to reduce vulnerability to climate change.

**A. Expanded summary** — The Expanded summary feature provides the option to view a more comprehensive and in-depth response. This feature increases the number of perspectives on a given user query to provide a more comprehensive and in-depth response.

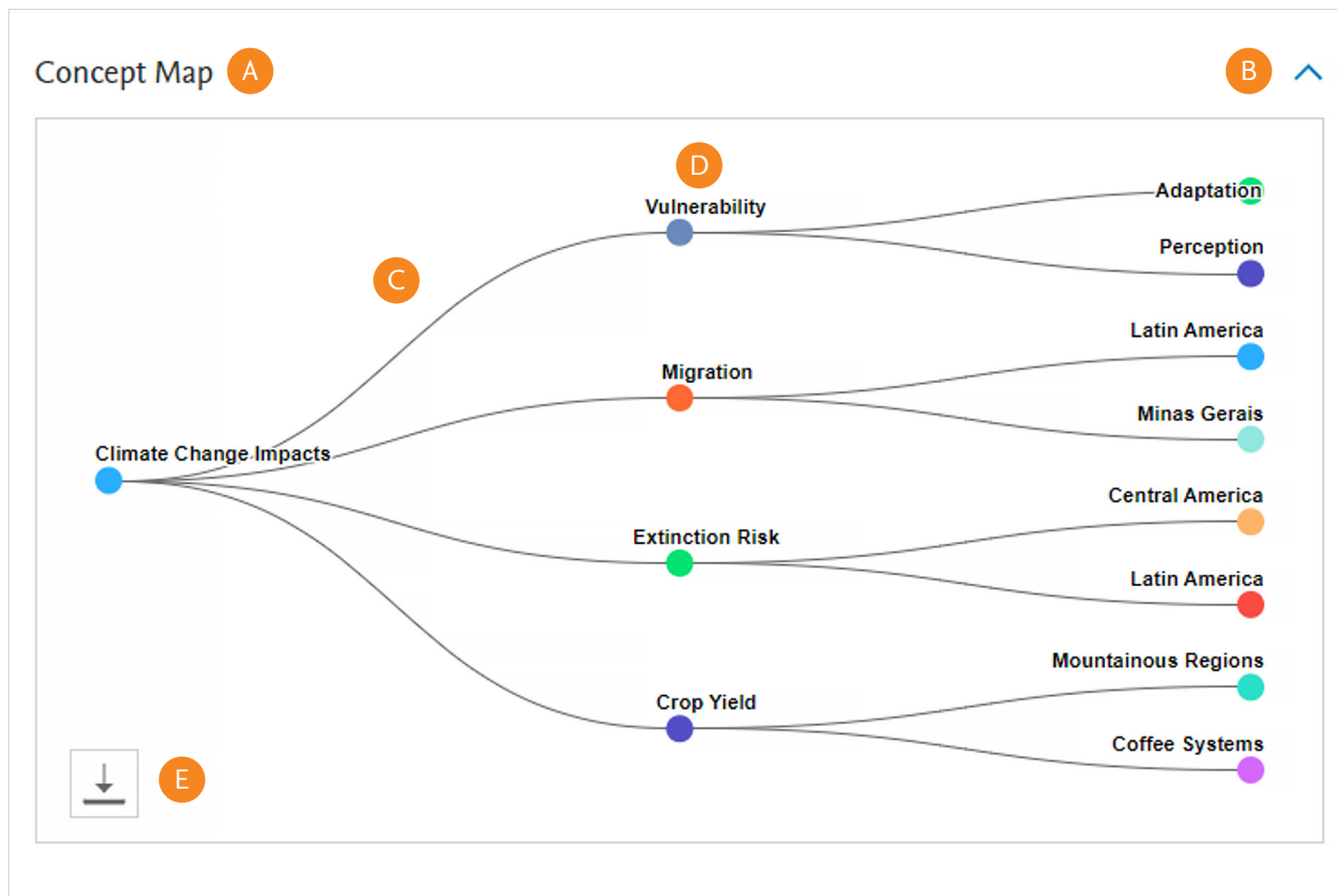
**B. Display / hide arrow** — Clicking on this arrow will display and hide the Expanded summary.

**C. Sub-topic heading** — The Expanded summary organizes the response into sub-topics. This provides a more organized view of the summary and allows you to identify areas within your query for further exploration.

**D. Source links** — Click on these source number links to view the 'Expanded summary reference' panel which includes information and links for each reference used to generate your Expanded summary.



# Concept map



**A. Concept map** — This tool visually maps search results, offering a comprehensive overview that allows you to navigate complex relationships easily.

**B. Display / hide arrow** — Clicking on this arrow will display and hide the Concept map.

**C. Concept branches** — Branches from initial concepts demonstrate potential connections to your query which you may want to explore.

**D. Related concepts** — Scopus AI outlines concepts related to your query. Clicking on a related concept once will remove branch concepts from your map. Clicking on the header again will add branch concepts back to the map.

**E. Download button** — Clicking on this button will download a PNG image file of the Concept map into your downloads folder.

# Topic experts

Topic experts **A**

**Craparo, Alessandro C.W. A.C.W.** **C**

347 citations 3 matching documents 6 h-index

Alessandro C.W. Craparo is an expert in sustainable coffee production, as evidenced by their publication on a targeted irrigation support tool for coffee production. Their research also delves into the impact of vapor pressure deficit on global coffee production under climate change, showcasing their expertise in understanding the threats posed by climate change to coffee cultivation.

[Preview profile](#) **D**

**Byrareddy, Vivekananda Mittahalli V.M.**

225 citations 2 matching documents 8 h-index

Vivekananda Mittahalli Byrareddy is an expert in the impact of climate change on coffee production. Their work on vapor pressure deficit and its critical thresholds for global coffee production demonstrates a deep understanding of the threats posed by climate change to coffee cultivation. Additionally, their research on predicting coffee yield at a regional scale further solidifies their expertise in this field.

[Preview profile](#)

**Mushtaq, Shahbaz S.**

2,363 citations 2 matching documents 29 h-index

Shahbaz Mushtaq is an expert in assessing the impact of climate change on coffee production. Their research on vapor pressure deficit and its critical thresholds for global coffee production under climate change highlights their expertise in understanding the threats posed by climate change to coffee cultivation. Additionally, their work on predicting coffee yield at a regional scale further demonstrates their knowledge in this area.

[Preview profile](#)

**B** ^

**Author profile preview**

**A.C.W., Craparo, Alessandro C.W.**

Experience in research: **13+ years** **E**

Year of latest matching document: **2023**

[View full profile](#) **F**

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**Most contributed topics** **G**

2018–2022

**Coffea Arabica; Genotype; Coffee**

**Crops; CERES (Experiment); Climate Change Impact**

**Civil Conflict; Civil War; Militia**

**Matching documents** **H**

**ThIRST: Targeted IRrigation Support Tool for sustainable coffee production** **↗**

Nguyen, K.T., Craparo, A., ...Bosselmann, A.S.  
*Frontiers in Sustainable Food Systems*, 2023

**Vapour pressure deficit determines critical thresholds for global coffee production under climate change** **↗**

Kath, J., Craparo, A., ...Power, S.  
*Nature Food*, 2022

**Warm nights drive Coffea arabica ripening in Tanzania** **↗**

Craparo, A.C.W., Van Asten, P.J.A., ...Grab, S.W.  
*International Journal of Biometeorology*, 2021

- A.** The Topic experts feature identifies the leading authors based on your query alongside explanations of their relevant expertise.
- B.** **Display / hide arrow** — Clicking on this arrow will display and hide topic experts.
- C.** **Topic expert information** — Based on Scopus Author Profiles, this section includes:
  - Author name
  - Impact metrics on research related to your query
  - Summary of the researcher’s research related to your query
- D.** **Preview profile** — Click on this link to view ‘Author profile preview’ panel including:
- E.** **Author experience in research** — ‘Experience in research’ and ‘Year of latest matching document.’
- F.** **Link to view** the full Scopus Author Profile.
- G.** ‘Most contributed topics’ with relation to your query **author matching documents** for your topic.
- H.** Displays the author’s ‘Matching documents’ for your query. Clicking on an article title links to the Scopus Document details page.

## Go deeper (suggested queries)

### Go deeper A

↳ How does rising global temperatures affect the growth and yield of coffee plants?

↳ What are the specific climate-related factors that contribute to the spread of coffee diseases and pests?

↳ How does changing rainfall patterns impact the quality and flavor profile of coffee beans?

B

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**A. Go deeper** — Scopus AI offers relevant queries for further exploration, leading to hidden insights in various research fields.

**B. Recommended Queries** — Clicking on any of the three recommended queries will generate a new query beginning with a Summary. This query will include all the features of your initial query including References, Foundational documents, Expanded summary, Concept map, Topic experts and Go deeper links.