Project : Summarizing and Analyzing Research Papers

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**Topic** : summarize and analyze research on the impact of climate change on biodiversity .

**Research paper** : https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9058818/

**Initial Prompt**

Description : “Can you provide a summary of research paper in 100 words ?”

Generated summary : Climate change, driven by human activities such as burning fossil fuels and deforestation, leads to rising global temperatures and extreme weather. This results in more frequent natural disasters, sea level rise, reduced crop yields, and biodiversity loss. The 2015 Paris Agreement aimed to limit warming to 1.5–2 °C by 2100, but current emissions suggest a potential rise of 3–4 °C. Despite pledges from COP 26 to achieve net-zero emissions by 2050, projections indicate a likely rise of about 2.4 °C. Urgent additional measures are needed to meet the 1.5 °C target and ensure long-term sustainability.

**Iteration 1**

Description : what are the main points of research paper mention in 100 words ?

Generated summary :  **Climate Change Definition**: Refers to long-term changes in temperature and weather patterns due to human activities. It manifests as increased global temperatures and extreme, unpredictable weather.

 **Drivers**: Key drivers include increased greenhouse gas emissions (CO2, methane, nitrous oxide) from burning fossil fuels and deforestation.

 **Consequences**: Major impacts include more frequent and severe natural disasters, rising sea levels, decreased crop productivity, and biodiversity loss.

 **Mitigation Measures**: Essential actions include reducing greenhouse gas emissions and increasing forest cover. The 2015 Paris Agreement aimed to limit global warming to 1.5–2 °C by 2100, but current trends indicate a possible rise of 3–4 °C. COP 26 pledges to achieve net-zero emissions by 2050 may lead to a rise of around 2.

**Iteration 2**

Description : summarize the research paper in efficient way in 100 words .

Generated summary : The research paper examines the impacts of climate change driven by human activities, including greenhouse gas emissions and deforestation. Key consequences are increased global temperatures, extreme weather events, rising sea levels, and biodiversity loss. The 2015 Paris Agreement aimed to limit warming to 1.5–2 °C by 2100, but current trends suggest a rise of 3–4 °C. Despite COP 26 pledges to achieve net-zero emissions by 2050, a temperature increase of about 2.4 °C is expected. The study underscores the urgent need for additional measures to meet climate targets and mitigate adverse effects on human welfare and ecosystems.

**Final prompt**

Description : provide me the crisp of research paper in most efficient manner in 100 words .

Generated summary : The research paper explores the impact of climate change driven by human activities, particularly greenhouse gas emissions and deforestation. It identifies key consequences: increased global temperatures, extreme weather, rising sea levels, and biodiversity loss. Despite the Paris Agreement’s goal to limit warming to 1.5–2 °C by 2100, current emissions trends point to a potential rise of 3–4 °C. COP 26 pledges to reach net-zero emissions by 2050 may result in a temperature increase of approximately 2.4 °C. The paper emphasizes the urgent need for additional actions to meet climate targets and mitigate adverse effects on both ecosystems and human societies.

**Insights and Application**

**Key Insights :**

The research paper delves into the drivers and impacts of climate change, primarily caused by human activities such as greenhouse gas emissions and deforestation. Key insights include:

1. **Drivers**: Greenhouse gases (CO2, methane, nitrous oxide) from burning fossil fuels and deforestation are major contributors to climate change.
2. **Impacts**: Climate change results in rising global temperatures, extreme weather events, increased frequency of natural disasters, sea level rise, decreased crop productivity, and biodiversity loss.
3. **Global Agreements**: The Paris Agreement aimed to limit warming to 1.5–2 °C by 2100, but current trends suggest a potential rise of 3–4 °C. COP 26 pledges to achieve net-zero emissions by 2050 might result in a temperature increase of around 2.4 °C.
4. **Urgent Actions**: The paper stresses the need for additional, immediate measures to meet climate goals and mitigate negative effects on ecosystems and human welfare, highlighting the gap between current actions and required outcomes.

**Potential Application** :

The research paper’s findings have several practical applications:

1. **Policy Development**: It can inform policymakers in crafting more robust climate policies and regulations, emphasizing the need for stricter emission controls and enhanced forest conservation efforts.
2. **Climate Adaptation Strategies**: The insights can guide the development of adaptation strategies for communities vulnerable to extreme weather events, rising sea levels, and biodiversity loss, ensuring resilience in agriculture and infrastructure.
3. **Sustainability Initiatives**: Businesses and organizations can use the data to implement sustainable practices, reduce their carbon footprint, and invest in green technologies.
4. **Public Awareness and Education**: The research can be leveraged to raise awareness about the urgency of climate action, fostering public support for climate initiatives and encouraging behavioural changes that support environmental sustainability.

**Evaluation**

**Clarity** : The research paper is clear and well-structured, effectively outlining the drivers, impacts, and mitigation strategies related to climate change. It uses precise language and provides detailed insights, making complex concepts accessible. However, summarizing key findings in a more concise manner could further enhance clarity.

**Accuracy** : The research paper is accurate, presenting current data and trends on climate change, supported by recent reports and models. It correctly identifies key drivers, impacts, and mitigation measures. The use of up-to-date sources and alignment with global climate agreements adds to its credibility and reliability.

**Relevance** : The research paper is highly relevant, addressing critical aspects of climate change that impact both ecosystems and human societies. Its discussion on greenhouse gas emissions, policy responses, and future projections aligns with global climate priorities, making it a valuable resource for policymakers, researchers, and stakeholders focused on climate action.

**Reflection :**

I had a very good learning experience while making the project using various prompts and the course the content provided in the course was very precise . I had face problem while making the project in some areas like finding the research paper and generating the specific requirements. But although it was great learning experience .