





D5.4 Undergraduate/Master Curricula Implemented

Title of Course

Introduction to Climate Change Management

Title of the presentation

Strategies for mitigation greenhouse gas emissions and adaptation to the impacts of climate change

др Ирма Дервишевић

"Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union. Neither the European Union nor the granting authority can be."

Partnership for Promotion and Popularization of Electrical Mobility through Transformation and Modernization of WB HEIs Study Programs/PELMOB

Call: ERASMUS-EDU-2022-CBHE-STRAND-2

Project Number: 101082860



Strategies for mitigation greenhouse gas emissions and adaptation to the impacts of climate change





🙆 Филипа Вишњића бб, 38220 Косовска Митровица

J +381 28 422 340

@ rektorat@pr.ac.rs



Instagram





Partnership for Promotion and Popularization of Electrical Mobility through Transformation and Modernization of WB HEIs Study Programs / PELMOB



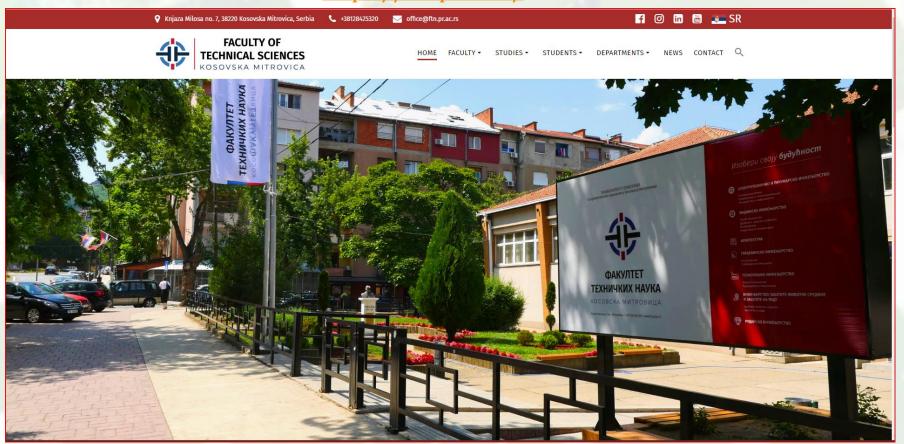
Strategies for mitigation greenhouse gas emissions and adaptation to the impacts of climate change







https://ftn.pr.ac.rs/





Strategies for mitigation greenhouse gas emissions and adaptation to the impacts of climate change







https://www.google.rs/maps/@42.8979479,20.8656299,19z





Jniversity of Pristina

Kosovska Mitrovica

Introduction to Climate Change Management

Strategies for mitigation greenhouse gas emissions and adaptation to the impacts of climate change









Strategies for mitigation greenhouse gas emissions and adaptation to the impacts of climate change





Mitigation Strategies











Mitigation Strategies









Strategies for mitigation greenhouse gas emissions and adaptation to the impacts of climate change

Mitigation Strategies

Energy Efficiency Improvements

 Building Design: Implementing energy-efficient designs and materials for new construction and retrofitting existing buildings.

Appliances and Lighting: Promoting the use of energy-efficient appliances and LED lighting to reduce consumption.

Industrial Processes: Optimizing manufacturing processes to minimize energy use and waste.











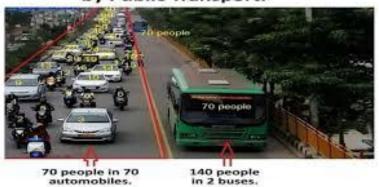
Strategies for mitigation greenhouse gas emissions and adaptation to the impacts of climate change

Transportation Innovations

Mitigation Strategies

- Electrification of Vehicles: Promoting electric and hybrid vehicles to reduce reliance on fossil fuels.
- Public Transportation: Expanding and improving public transport systems to decrease individual car usage.
- Active Transportation: Encouraging walking, cycling, and other low-carbon transportation methods.

Imagine if we all start travelling by Public Transport.











Strategies for mitigation greenhouse gas emissions and adaptation to the impacts of climate change

Mitigation Strategies









Strategies for mitigation greenhouse gas emissions and adaptation to the impacts of climate change Mitigation Strategies

Waste Management and Reduction

- Recycling and Composting: Promoting recycling programs and composting organic waste to reduce landfill emissions.
- Waste-to-Energy Technologies: Converting waste materials into usable energy, reducing the volume sent to landfills.
- Circular Economy Principles: Fostering product lifecycle management to minimize waste and encourage reuse and recycling of materials.















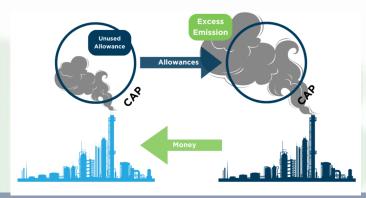
Mitigation Strategies

Carbon Pricing and Policy Measures

- Carbon Taxes: Implementing taxes on carbon emissions to create financial incentives for reducing GHGs.
- Cap-and-Trade Systems: Allowing companies to buy and sell emissions allowances, encouraging reductions where they are most cost-effective.
- Regulatory Standards: Establishing strict emissions standards for industries, vehicles, and energy production.













Strategies for mitigation greenhouse gas emissions and adaptation to the impacts of climate change

Mitigation Strategies

Education and Behavioral Change

- Awareness Campaigns: Informing communities about climate change and how individuals can reduce their carbon footprint.
- Sustainable Lifestyle Choices: Encouraging choices such as plant-based diets, reduced consumption, and energy conservation at home.





Strategies for mitigation greenhouse gas emissions and adaptation to the impacts of climate change





Adaptation Strategies

Adaptation strategies are essential for reducing vulnerability to climate change impacts and ensuring that communities can thrive in a changing environment. By implementing these strategies at various levels—from local to global—we can enhance resilience, protect livelihoods, and safeguard ecosystems. Collaboration among governments, businesses, and individuals is crucial for effective adaptation to climate change.





Water Resource Management

- Integrated Water Resources Management (IWRM): A holistic approach to managing water resources to ensure sustainable access for all sectors, considering variability in precipitation and water availability.
- Rainwater Harvesting: Collecting and storing rainwater for agricultural, domestic, and industrial use, reducing reliance on traditional water sources.
- Desalination: Utilizing technology to convert seawater into freshwater, especially relevant for coastal communities facing water scarcity.



Strategies for mitigation greenhouse gas emissions and adaptation to the impacts of climate change
Adaptation Strategies







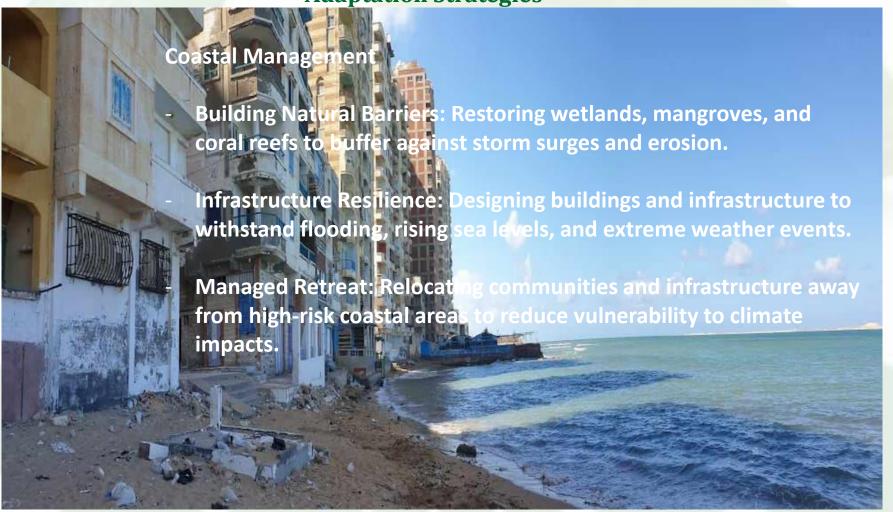


Strategies for mitigation greenhouse gas emissions and adaptation to the impacts of climate change





Adaptation Strategies





Strategies for mitigation greenhouse gas emissions and adaptation to the impacts of climate change





Adaptation Strategies





Strategies for mitigation greenhouse gas emissions and adaptation to the impacts of climate change

Adaptation Strategies





Ecosystem-Based Adaptation

- Protecting Biodiversity: Conserving ecosystems and natural habitats to maintain their function as buffers against climate change impacts.
- Restoration Projects: Implementing restoration initiatives for degraded ecosystems, such as forests, wetlands, and grasslands, to enhance resilience.
- Sustainable Land Management: Promoting practices that maintain ecosystem services while enhancing agricultural productivity.



Strategies for mitigation greenhouse gas emissions and adaptation to the impacts of climate change





Adaptation Strategies





Strategies for mitigation greenhouse gas emissions and adaptation to the impacts of climate change





Adaptation Strategies

Policy and Governance

- Climate Action Plans: Formulating comprehensive policies that incorporate adaptation strategies at local, regional, and national levels.
- Community Engagement: Involving local communities in decision-making processes ensures that adaptation measures meet their needs and circumstances.
- Intersectoral Coordination: Collaborating across different sectors (e.g., agriculture, water, health) to develop integrated approaches to adaptation.





Role of Individuals and Communities

Education and Awareness

- Spreading Knowledge: Individuals can educate themselves and share information about climate change, its impacts, and solutions through discussions, workshops, and social media.
- Engaging Youth: Mentoring and involving younger generations in environmental initiatives can cultivate a culture of sustainability and responsibility.





Role of Individuals and Communities

Sustainable Lifestyle Choices

- Reducing Energy Consumption: Individuals can adopt energy-efficient appliances, use LED lighting, and practice habits like turning off lights and unplugging devices when not in use.
- Sustainable Transportation: Opting for public transport, walking, biking, or carpooling reduces greenhouse gas emissions. Individuals can also consider electric or hybrid vehicles to minimize their carbon footprint.
- Waste Reduction: Practicing the principles of reduce, reuse, and recycle can significantly lower waste production. Composting organic waste also reduces landfill contributions.





Role of Individuals and Communities

Community Involvement and Activism

- Grassroots Movements: Joining or organizing local climate action groups, such as climate strikes, cleanups, or community gardens, raises awareness and promotes collective action.
- Participating in Local Governance: Engaging with local government and policymakers to advocate for environmentally friendly policies and practices empowers communities to influence decision-making.







Support for Sustainable Practices

- Local and Sustainable Products: Supporting local farmers and businesses that prioritize sustainable practices helps reduce transportation emissions and promotes local economies.
- Gardening and Urban Farming: Growing food locally reduces reliance on industrial agriculture and cuts transportation emissions. Community gardens can enhance food security and strengthen community ties.





Role of Individuals and Communities

Advocacy and Political Engagement

- Contacting Representatives: Individuals can inform and pressure political representatives to prioritize climate issues by writing letters, signing petitions, or participating in campaigns.
- Voting: Supporting candidates and policies that prioritize climate action and sustainability during elections is essential. Every vote contributes to shaping environmental policies.







Role of Individuals and Communities

Adoption of Renewable Energy

- Solar Panels: Investing in solar panels for homes reduces reliance on fossil fuels and provides clean, renewable energy.
- Community Solar Projects: Participating in community solar initiatives allows individuals without suitable roofs to access renewable energy options and invest in sustainable energy solutions.







Role of Individuals and Communities

Behavioral Changes and Mindset Shifts

- Conscious Consumption: Individuals can choose to buy less, opt for ecofriendly products, and consider the environmental impact of their purchases.
- Lifestyle Adjustments: Simple changes like eating less meat, conserving water, and reducing air travel can collectively lead to significant reductions in individual carbon footprints.



Funded by the European Union





Conclusion

Climate change represents one of the most pressing challenges of our time, threatening ecosystems, economies, and communities worldwide. The overwhelming consensus among scientists underscores the urgency to act, as rising temperatures, extreme weather events, and shifting climate patterns continue to escalate.

However, it is essential to recognize that combating climate change is not solely the responsibility of governments and international organizations. Individuals and communities play a critical role in driving change at the grassroots level. Through education, sustainable lifestyle choices, community involvement, advocacy, and support for renewable energy, everyone can contribute to creating a more sustainable future.





The science background of climate change and global warming



Conclusion

International agreements like the Paris Agreement provide a framework for global cooperation, but the success of these initiatives relies heavily on the commitment and actions of individuals and local entities. By working together—through small daily actions and larger collective movements—we can foster a resilient planet and ensure a healthier environment for generations to come.

Ultimately, climate change is a shared challenge that requires a unified response. Whether through policy advocacy, community engagement, or personal lifestyle changes, every effort counts. By embracing our roles as stewards of the Earth and supporting one another, we can pave the way for innovative solutions and create a legacy of environmental responsibility.





The science background of climate change and global warming



Data Source

- 1. Intergovernmental Panel on Climate Change (IPCC) Data Distribution Centre (DDC)
- •Provides climate, socio-economic, and environmental data from the past and future scenarios.
- •Includes projections for temperature, precipitation, and sea-level rise.
- ipcc DDC, https://ipcc-data.org/about.html
- 2. National Centers for Environmental Information (NOAA NCEI)
- •Offers historical weather and climate data, including temperature, precipitation, and extreme weather events.
- Hosts one of the largest archives of climate data globally.
- •Website: NOAA NCEI, https://www.ncei.noaa.gov/







The science background of climate change and global warming



Data Source

- 3. NASA Earth Science Data Systems
- •Provides satellite and ground-based data on climate indicators like temperature, ice melt, and sea-level rise.
- •Includes tools like **GISTEMP** (global temperature analysis) and **Worldview** (interactive satellite imagery).
- •Website: NASA Earth Data, https://www.earthdata.nasa.gov/



- 4. World Bank Climate Change Knowledge Portal (CCKP)
- •Offers **global data** on historical and future climate, vulnerabilities, and impacts.
- •Includes visualizations and tools for analyzing climate risks.
- •Website: World Bank CCKP, https://climateknowledgeportal.worldbank.org/







The science background of climate change and global warming





5. National Snow & Ice Data Center (NSIDC)

- •Focuses on cryosphere data, including sea ice, glaciers, and ice sheets.
- Provides datasets and maps for polar and mountain regions.
- •Website: NSIDC, https://nsidc.org/home



6. Goddard Institute for Space Studies (GISS)

- •Hosts global temperature records and climate model outputs.
- •Known for its **GISTEMP dataset**, which tracks global surface temperature changes.



National Aeronautics and Space Administration Goddard Institute for Space Studies





The science background of climate change and global warming



Data Source

- 7. ClimateData.ca (Canada)
- Provides climate data and tools for adaptation planning in Canada.
- •Includes projections for temperature, precipitation, and extreme weather.
- •Website: ClimateData.ca, https://climatedata.ca/



8. IRI/LDEO Climate Data Library

- •Offers global climate datasets and analysis tools.
- •Includes data on temperature, precipitation, and ocean-atmosphere interactions.
- •Website: IRI Data Library, https://iridl.ldeo.columbia.edu/







The science background of climate change and global warming





- 9. UNdata (United Nations)
- Provides environmental and energy statistics, including greenhouse gas emissions
- Includes datasets from the Energy Statistics Database and Environment Statistics
 Database.



/data.un.org/

10. Emission Factor Database (EFDB)

- •Hosted by the IPCC, it provides **emission factors** for estimating greenhouse gas emissions.
- •Useful for researchers and policymakers.
- •Website: IPCC EFDB, https://www.ipcc-nggip.iges.or.jp/EFDB/main.php







The science background of climate change and global warming



Data Source

•Climate Change Data Portal (CCDP) Developed by Xander Wang, University of Regina. It provides dynamically-downscaled climate projections over Canada and China.



The Best Data Viz and Infographics on Climate Change Facts

https://visme.co/blog/climate-change-facts/



https://climatevisuals.org/







The science background of climate change and global warming



Scientific journals

1. Nature Climate Change

- •Focus: Publishes cutting-edge research on climate change, including its causes, impacts, and mitigation strategies.
- •**Key Topics**: Range shifts in ecosystems, carbon balance, renewable energy, and socio-economic impacts of climate change.
- •Recent Highlights: Articles on rooftop photovoltaic systems, Arctic carbon uptake, and gender inequality in climate assessments.
- •Website: Nature Climate Change, https://www.nature.com/nclimate/

Citation Impact 2023

Journal Impact Factor: 30.3

5-year Journal Impact Factor: 31.4

Immediacy Index: 4.5

Eigenfactor® Score: 0.06679
Article Influence Score: 11.6





The science background of climate change and global warming



Scientific journals

2. Climate (MDPI)

- •Focus: An open-access journal covering climate science, adaptation, and mitigation.
- •**Key Topics**: Climate impacts on natural resources, rural livelihoods, and communication strategies for climate resilience.
- •Recent Highlights: Studies on gendered climate impacts in Kyrgyzstan and the role of renewable energy communities.
- •Website: Climate Journal. https://www.mdpi.com/journal/climate

Impact Factor: 3.0 (2023); 5-Year Impact Factor: 3.3 (2023)





The science background of climate change and global warming



Scientific journals

- 3. Advances in Climate Change Research
- •Focus: Interdisciplinary research on climate change, including policy, socioeconomic impacts, and mitigation.
- •**Key Topics**: Changes in climate systems, greenhouse gas emissions, and global climate governance.
- •Recent Highlights: Special issues on Arctic permafrost and global mitigation strategies.
- •Website: Advances in Climate Change Research.

https://www.sciencedirect.com/journal/advances-in-climate-change-research/about/insights

Impact
9.8
CiteScore ①
Impact Factor ①





The science background of climate change and global warming



Scientific journals

4. Climatic Change

- •Focus: Examines climatic variability and change, including its causes and implications.
- •Key Topics: Climate policy, adaptation, and mitigation.
- •Recent Highlights: Research on climate change impacts on health, ecosystems, and socio-economic systems.
- •Website: Climatic Change.

https://link.springer.com/journal/10584



Journal Impact Factor 4.8 (2023)



5-year Journal Impact Factor 5.4 (2023)



Submission to first decision (median) 28 days



Downloads 2,516,770 (2024)





The science background of climate change and global warming



Scientific journals

5. Environmental Research Letters

- •Focus: Covers all areas of environmental science, including climate change.
- •Key Topics: Climate impacts, adaptation, and mitigation strategies.
- •Recent Highlights: Studies on extreme weather events, carbon sequestration, and renewable energy.
- •Website: Environmental Research Letters, https://iopscience.iop.org/journal/1748-9326

6	d	ay	/S
---	---	----	----

Median submission to first decision before peer review

Full list of journal metrics

54 days

Median submission to first decision after peer review

5.8

Impact factor

11.9

Citescore





The science background of climate change and global warming



Scientific journals

6. WIREs Climate Change

- •Focus: Promotes cross-disciplinary discussions on climate change and its societal implications.
- •Key Topics: Climate science, policy, and adaptation.
- •Recent Highlights: Reviews on climate change impacts on health, ecosystems, and global governance.
- •Website: WIREs Climate Change.

https://wires.onlinelibrary.wiley.com/journal/17577799

Citation Impact		
2023 CiteScore (Scopus):	20	
2023 Journal Citation Indicator (Clarivate):	1.34	
2023 Journal Impact Factor (Clarivate):	9.4	





The science background of climate change and global warming



Scientific journals

7. Climate Policy

- •Focus: A leading journal on climate change policy, including adaptation and mitigation.
- •**Key Topics**: Policy design, implementation, and socio-political issues related to climate change.
- •Recent Highlights: Research on climate governance, negotiations, and policy impacts.
- •Website: Climate Policy.
 Journal metrics

Usage	Citation metrics	Speed/acceptance
783K annual downloads/views	 5.3 (2023) Impact Factor Q1 Impact Factor Best Quartile 6.5 (2023) 5 year IF 12.9 (2023) CiteScore (Scopus) Q1 CiteScore Best Quartile 1.987 (2023) SNIP 2.245 (2023) SJR 	 0 days avg. from submission to first decision 110 days avg. from submission to first post-review decision 11 days avg. from acceptance to online publication 12% acceptance rate





The science background of climate change and global warming



Scientific journals

- 8. Climate Change Ecology
- •Focus: Examines the ecological impacts of climate change.
- •**Key Topics**: Ecosystem responses to climate change, biodiversity loss, and adaptation strategies.
- •Recent Highlights: Studies on species distribution shifts and ecosystem resilience.
- •Website: Climate Change Ecology.

https://www.sciencedirect.com/journal/climate-change-ecology





The science background of climate change and global warming



Scientific journals

- 9. International Journal of Climate Change Strategies and Management
- •Focus: Explores strategies for managing climate change impacts.
- •Key Topics: Climate adaptation, mitigation, and policy frameworks.
- •Recent Highlights: Research on climate risk management and sustainable development.
- •Website: <u>IJCCSM</u>.

https://www.emerald.com/insight/publication/issn/1756-8692

Citation metrics Scopus' Scopus' Clarivate Clarivate 8 1 71 35 4 30 CiteScore 2023 CiteScore Tracker 2023 Impact Factor 5-year Impact Factor 2024 (2023)(updated monthly) More info > More info > More info > More info >





The science background of climate change and global warming



Scientific journals

10. Global Environmental Change

- •Focus: Addresses the interactions between global environmental change and human systems.
- •Key Topics: Climate impacts, adaptation, and socio-economic responses.
- •Recent Highlights: Studies on climate-induced migration, food security, and ecosystem services7.
- •Website: Global Environmental Change.

https://www.sciencedirect.com/journal/global-environmental-change

