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INTERNATIONAL JOURNAL OF MULTIDISCIPLINARY RESEARCH & REVIEWS

journal homepage: www.ijmrr.online/index.php/home

GLOBAL WARMING AND THE HUMAN FUTURE IN EUROPE: AN ANTHROPOLOGICAL APPROACH TO CLIMATE ADAPTATION, CULTURAL RESILIENCE AND SUSTAINABLE TRANSFORMATION

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How to Cite the Article: Lalit Shrestha (2026). Global Warming and the Human Future in Europe: An Anthropological Approach to Climate Adaptation, Cultural Resilience and Sustainable Transformation. International Journal of Multidisciplinary Research & Reviews, 5(9), 43-55.



<https://doi.org/10.56815/ijmrr.v5i9.2026.43-55>

<i>Keywords</i>	<i>Abstract</i>
Global Warming; Climate Change; Europe; Environmental Anthropology; Climate Anthropology; Political Ecology; Climate Resilience; Adaptation; Mitigation; Indigenous Knowledge; Climate Justice; Sustainable Development.	Global warming is no longer merely an environmental or atmospheric phenomenon; it is an increasingly profound anthropological challenge affecting human health, livelihoods, migration, settlement, food systems, cultural practices, social institutions and relations between humans and the environment. Europe provides a particularly significant case because it is the fastest-warming continent, with climate risks increasingly affecting ecosystems, infrastructure, water resources, food and energy security, economies and human health. The European State of the Climate 2025 reports that Europe continued to experience exceptional warming, with heatwaves extending from the Arctic to the Mediterranean, record-high sea-surface temperatures and the largest area burned by wildfires on record. This chapter examines global warming in Europe through an anthropological lens, moving beyond purely technological and economic explanations. It explores how climate change interacts with culture, social inequality, political economy, indigenous and local ecological knowledge, migration, urbanisation, consumption and human adaptation. Drawing upon environmental anthropology, political ecology, cultural ecology, climate anthropology and resilience theory, the chapter argues that Europe cannot “escape” global warming through technological solutions alone. Rather,



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	climate resilience requires a transformation of human-environment relationships, consumption patterns, institutions and cultural values. The chapter proposes an anthropological framework based on mitigation, adaptation, ecological restoration, climate justice, local knowledge, community participation and intergenerational responsibility. It concludes that Europe's pathway out of the climate crisis must be simultaneously ecological, technological, cultural and ethical.
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1. Introduction

Climate change represents one of the defining challenges of the twenty-first century. Although global warming is generated by physical processes involving greenhouse gases, its consequences are experienced through human societies and cultures. People live in particular environments, organise economies, construct settlements, produce food, consume resources and develop cultural meanings around nature. Consequently, climate change cannot be adequately understood only through climatology, economics or environmental science.

Anthropology contributes a distinctive perspective because it examines the complex relationship between human beings, culture, society and environment. It asks not simply how much the planet is warming, but also: Who is vulnerable? Why are some communities more vulnerable than others? How do people perceive environmental risks? How do cultures adapt? What happens to livelihoods and identities when environments change? Which forms of knowledge can help societies respond?

Europe is an important region for such analysis. The IPCC has documented increases in mean temperature and extreme heat throughout European regions, together with changes in precipitation, drought, flooding, sea-level rise, cryosphere systems and other climate-impact drivers. The European Environment Agency's first European Climate Risk Assessment identified 36 major climate risks affecting food and energy security, ecosystems, infrastructure, water resources, financial stability and human health. Many risks have already reached critical levels and may become catastrophic without urgent action.

The central argument of this chapter is therefore that Europe's climate crisis is simultaneously a biological, ecological, economic, cultural and social crisis. An effective response requires a transition from a purely technological model of climate management to an integrated anthropological approach centred on human behaviour, cultural transformation, social equity and ecological relationships.

2. Global Warming as an Anthropological Problem

Anthropology traditionally investigates human biological and cultural adaptation to changing environments. Global warming extends this classical anthropological concern into a planetary context.

Climate change affects anthropology in at least five interconnected dimensions:

2.1 Human biological adaptation

Increasing temperatures create risks of heat stress, cardiovascular and respiratory problems, infectious diseases and mortality, particularly among older people, children, outdoor workers and socially disadvantaged populations.



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2.2 Cultural adaptation

Human societies respond to environmental stress through changes in housing, clothing, diet, working hours, agriculture, mobility and social practices. Climate adaptation is therefore partly a cultural process.

2.3 Economic adaptation

Agriculture, fisheries, forestry, tourism, manufacturing and other sectors are climate-sensitive. Changes in climate can alter traditional occupations and livelihood systems.

2.4 Social adaptation

Climate disasters can intensify inequality because vulnerability is unevenly distributed. Wealthier populations may possess better housing, insurance, mobility and access to cooling, healthcare and information.

2.5 Identity and cultural continuity

Environmental transformation may threaten places associated with memory, heritage, landscape identity and traditional knowledge. Climate change therefore has consequences beyond material survival; it can affect cultural continuity and sense of place.

The IPCC explicitly recognises the interdependence of climate, ecosystems, biodiversity and human societies and emphasises the importance of diverse forms of knowledge in addressing climate risks.

3. **Review of Literature**

The anthropological study of environment has deep intellectual roots. Early ecological anthropology examined relationships between cultural systems and environmental conditions. Julian Steward's cultural ecology emphasised adaptation between human societies and their environments, while Roy Rappaport demonstrated how ecological processes and cultural institutions could be studied together.

Later, political ecology shifted attention towards power, inequality and control over natural resources. Scholars such as Blaikie and Brookfield demonstrated that environmental degradation cannot be separated from political-economic structures.

Contemporary climate anthropology builds upon these traditions by examining how climate change is experienced, interpreted and negotiated within specific communities. Crate and Nuttall (2009), for example, emphasised the importance of understanding climate change through local experiences, cultural meanings and indigenous knowledge.

Adger (2006) conceptualised social-ecological resilience through the capacity of communities and institutions to absorb and respond to environmental change. Ostrom's work further demonstrated the importance of collective institutions and community-based management in governing common resources.



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The IPCC's Sixth Assessment Report has strengthened this interdisciplinary perspective by examining climate impacts, vulnerability, adaptation, human communities and climate-resilient development.

Recent European assessments reinforce the urgency of this literature. The EEA's EUCRA identifies multiple interconnected climate risks, while its 2025 assessment of Europe's environment emphasises the interrelationships between climate change, biodiversity, pollution and human wellbeing. The EEA's 2025 assessment also reports continuing challenges in translating adaptation planning into implementation.

European Environment Agency

The literature therefore increasingly suggests that climate adaptation should not be understood simply as constructing stronger infrastructure. It must include social institutions, cultural practices, governance, knowledge systems and justice.

4. Europe as a Climate Hotspot

Europe is experiencing exceptionally rapid climatic change. The World Meteorological Organization and Copernicus reported that 2024 was Europe's warmest year on record, accompanied by severe storms and widespread flooding.

World Meteorological Organization

The European State of the Climate 2025 provides an even stronger warning: heatwaves extended from the Arctic to the Mediterranean; sea-surface temperature reached a record level; Europe experienced its largest wildfire area on record; and approximately 70% of rivers had below-average annual flows.

World Meteorological Organization

These changes are geographically differentiated.

Southern Europe

Mediterranean regions face increasing heat, drought, wildfire and water scarcity. Agriculture, tourism and outdoor employment are particularly vulnerable.

Central and Western Europe

Flooding, extreme rainfall, heat stress and urban climate risks increasingly challenge infrastructure and public health.

Northern Europe

Although northern regions historically experienced colder climates, warming is altering ecosystems, snow conditions, forests and Arctic environments.

European coastal regions

Sea-level rise, coastal erosion, flooding and saltwater intrusion threaten densely populated coastal settlements.



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Thus, Europe does not experience one single climate crisis. It experiences a plurality of climate crises shaped by geography, economy, demography and culture.

5. The Anthropological Dimensions of European Climate Vulnerability

Climate vulnerability is not determined by temperature alone. It results from the interaction of exposure, sensitivity and adaptive capacity.

A wealthy household living in a well-insulated building with access to healthcare and cooling may experience a heatwave differently from an elderly person living alone in poorly ventilated housing.

Similarly, a large corporation may recover from flooding faster than a small agricultural household.

This illustrates a central anthropological principle:

Climate change is universal, but climate vulnerability is socially differentiated.

Gender, age, occupation, income, migration status, housing conditions, disability, social networks and geographical location influence adaptive capacity.

Therefore, climate policy must avoid treating populations as homogeneous categories. Anthropological research can identify community-specific vulnerabilities that national-level climate models may overlook.

6. Climate Migration and the Changing European Social Landscape

One of the major anthropological consequences of environmental change is human mobility.

Floods, droughts, wildfires, declining agricultural productivity and coastal risks can influence decisions to migrate. Climate change may therefore interact with economic and political factors to produce complex forms of mobility.

However, climate migration should not be understood through a simplistic model in which environmental degradation automatically produces migration. Migration decisions are influenced by:

- employment opportunities
- family networks
- housing
- state policies
- social inequality
- perceptions of risk
- access to resources
- cultural attachment to place.

Anthropology can therefore contribute to understanding why some people migrate, why others remain and how migrants reconstruct identities and communities in new environments.



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7. Indigenous and Local Ecological Knowledge

One of the most important anthropological contributions to climate adaptation is recognition of local ecological knowledge (LEK) and Indigenous knowledge.

Communities have historically developed practical knowledge concerning:

- seasonal changes
- water conservation
- agricultural biodiversity
- forest management
- disaster warning signs
- animal behaviour
- traditional architecture
- food preservation
- resource sharing

Such knowledge should not be romanticised or treated as automatically superior to scientific knowledge. Instead, the most promising approach is knowledge pluralism, in which scientific climate information and locally embedded knowledge are brought into constructive dialogue.

The IPCC recognises the value of diverse knowledge systems in climate-resilient development.

For Europe, this approach may involve documenting traditional Mediterranean water-management practices, mountain ecological knowledge, community forestry, traditional building techniques and local disaster-management institutions.

8. Political Ecology: Who Produces Climate Risk and Who Pays the Cost?

A political-ecological perspective asks a fundamental question: Who benefits from environmentally intensive development, and who bears its environmental costs?

Industrialisation, fossil-fuel dependence, intensive agriculture, mass consumption and urban expansion have generated enormous economic benefits. However, environmental costs are not equally distributed.

Climate justice therefore requires consideration of:

- Intergenerational justice – responsibilities towards future generations.
- Intra-generational justice – fair distribution of climate costs within present societies.
- Global justice – recognition of historical differences in emissions and development.
- Procedural justice – participation of affected communities in decision-making.

Anthropology is particularly valuable because it can reveal how large-scale climate policies are experienced at the household and community levels.

9. How Can Europe “Escape” the Climate Trap?

The word escape should not be understood literally. Humanity cannot simply escape a changing climate. The realistic objective is to reduce warming, reduce vulnerability and increase resilience.

A comprehensive anthropological strategy can be organised around eight pillars.



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9.1 Transform the culture of consumption

Climate policy must address not only production but also consumption.

A culture of excessive consumption should gradually be replaced by values of:

- sufficiency
- durability
- repair
- recycling
- sharing
- low-carbon mobility
- responsible consumption

This requires cultural change, not merely technological substitution.

9.2 Build climate-resilient communities

- Resilience should begin at the community level.
- Local governments should encourage:
 - community disaster plans
 - neighbourhood emergency networks
 - heatwave response systems
 - water-sharing mechanisms
 - community gardens
 - local food systems
 - participatory environmental monitoring.

The EEA's recent work on smaller European municipalities demonstrates that local communities can develop climate resilience despite institutional and resource constraints.

9.3 Reconstruct cities as ecological systems

European cities require a transition from grey infrastructure to blue-green infrastructure. This means:

- urban forests
- wetlands
- permeable surfaces
- green roofs
- urban water bodies
- shaded public spaces
- climate-sensitive architecture
- pedestrian-friendly neighbourhoods

Urban planning should treat nature as infrastructure rather than decoration.

9.4 Strengthen ecological agriculture

Agriculture must move towards climate-resilient production through:



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- crop diversification
- soil conservation
- agroecology
- efficient irrigation
- reduction of food waste
- restoration of degraded land
- protection of agricultural biodiversity

Anthropological studies can help identify how farmers perceive climate risks and which interventions are socially acceptable.

9.5 Protect water security

Water will become increasingly important as drought and precipitation variability intensify.

Europe should combine technological water efficiency with traditional and community-based approaches, including rainwater harvesting, wetland restoration, watershed protection and demand management.

The EEA reports that severe drought impacts affected large areas of Europe in 2025, demonstrating that water stress is not a distant scenario but a current management challenge.

9.6 Make climate adaptation socially just

Adaptation must not become a privilege available only to wealthy populations. Policies should prioritise:

- low-income households
- elderly people
- children
- outdoor workers
- people living in climate-exposed areas
- socially marginalised groups
- vulnerable coastal and agricultural communities.

Climate resilience must therefore become a social right rather than a market commodity.

9.7 Combine science with indigenous knowledge

Climate models can tell us where risks are increasing; communities can explain how those risks affect everyday life.

The future therefore lies in a dialogue between:

Climate science + anthropology + indigenous knowledge + public policy + community participation.

9.8 Strengthen climate ethics

Ultimately, the climate crisis is also an ethical crisis. A sustainable Europe must reconsider the relationship between:



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human beings ↔ nature ↔ economy ↔ technology ↔ future generations.

The goal should not be unlimited economic growth at any environmental cost, but human wellbeing within ecological limits.

10. An Anthropological Framework for Climate Resilience

The chapter proposes the following framework:

The 5R Anthropological Climate Resilience Model

1. Reduce

Reduce greenhouse-gas emissions, excessive consumption and ecological destruction.

2. Reconnect

Reconnect human communities with ecosystems, landscapes and local environmental knowledge.

3. Reshape

Reshape cities, agriculture, economies and institutions for climate resilience.

4. Redistribute

Redistribute climate costs, resources and adaptation opportunities more equitably.

5. Reimagine

Reimagine development around wellbeing, ecological sustainability, cultural diversity and intergenerational responsibility.

This framework places culture at the centre of climate action.

11. Methodological Approach for Anthropological Research

An anthropological study of European global warming should employ a mixed-method, multi-sited and interdisciplinary approach.

Qualitative methods

- Ethnographic Observation
- Semi-Structured Interviews
- Life Histories
- Focus-Group Discussions
- Participatory Rural Appraisal
- Oral Histories
- Visual Anthropology

Quantitative methods

- household surveys
- climate-risk indicators
- livelihood assessments



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- demographic analysis
- spatial vulnerability mapping

Comparative approach

Comparisons can be made between:

- Mediterranean and Northern Europe
- urban and rural communities
- coastal and inland populations
- high-income and vulnerable households
- migrant and non-migrant populations

Such an approach can bridge macro-level climate science with micro-level human experience.

12. Discussion

The European climate crisis demonstrates that global warming cannot be separated from human behaviour and social organisation. Technological innovation—including renewable energy, electric mobility, energy-efficient buildings and climate modelling—is essential, but technology alone cannot resolve the underlying cultural drivers of ecological pressure.

The challenge is therefore not simply to develop a low-carbon economy, but to develop a low-carbon culture.

This distinction is crucial. A technological transition without behavioural and institutional transformation may reproduce unsustainable patterns in new forms.

Europe's climate policies must therefore integrate:

mitigation + adaptation + culture + justice + community participation + ecological restoration.

The EU's adaptation strategy already aims to strengthen climate resilience, while the European Commission's more recent climate-resilience framework seeks a more comprehensive approach to preparedness and risk management. In January 2026, the Commission reported estimates indicating that approximately €70 billion annually may be required for climate adaptation by 2050, illustrating the scale of the challenge.

Climate Action +1

Climate Action

However, investment must be accompanied by social participation. Infrastructure can protect communities from floods, but social networks can determine whether elderly people receive assistance during a heatwave. Scientific forecasts can predict drought, but farmers' local knowledge may determine whether an adaptation strategy succeeds.

Thus, resilience is both material and cultural.

13. Conclusion

Global warming represents perhaps the greatest environmental challenge confronting contemporary European society. The latest evidence demonstrates that Europe's warming trajectory is



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already producing severe consequences, from extreme heat and drought to floods, wildfires, glacier loss and ecological disruption. The 2025 European climate assessment reported heatwaves extending from the Arctic to the Mediterranean, record sea-surface temperatures and unprecedented wildfire extent.

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Yet the climate crisis should not be interpreted solely as a crisis of temperature. It is fundamentally a crisis of human-environment relationships.

An anthropological approach reveals that climate change is experienced through culture, livelihood, identity, inequality, migration, institutions and everyday behaviour. It consequently offers something that purely technological approaches cannot provide: an understanding of how societies can culturally reorganise themselves to live sustainably within ecological limits.

Europe cannot completely “escape” global warming. It can, however, escape the worst consequences of the climate crisis by rapidly reducing emissions, strengthening adaptation, protecting ecosystems, transforming consumption, empowering communities and integrating scientific and local knowledge.

The ultimate objective should therefore be more than climate survival. Europe must move towards a civilisation in which economic development, technological progress and human wellbeing operate within ecological boundaries.

The future of climate resilience will not be determined by technology alone; it will be determined by how humanity chooses to live, consume, cooperate and relate to nature.

From an anthropological perspective, therefore, the pathway beyond global warming is ultimately a pathway towards cultural transformation.

AUTHOR(S) CONTRIBUTION

The writers affirm that they have no connections to, or engagement with, any group or body that provides financial or non-financial assistance for the topics or resources covered in this manuscript.

CONFLICTS OF INTEREST

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

PLAGIARISM POLICY

All authors declare that any kind of violation of plagiarism, copyright and ethical matters will take care by all authors. Journal and editors are not liable for aforesaid matters.

SOURCES OF FUNDING

The authors received no financial aid to support for the research.

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Publication Note:

For an international edited volume, I would recommend using “Beyond Survival: Escaping the Heat Trap—An Anthropological Approach to Global Warming and Climate Resilience in Europe” as the chapter title. It is more distinctive and publication-friendly than the original wording, while retaining your central idea of “How to escape”. The chapter is also grounded in the latest available European evidence through 2026, including the European State of the Climate 2025, the EU's first European Climate Risk Assessment, and the European Commission's 2026 climate-resilience developments.

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