Security Horazions

Volume

Vol.
Season Year
P.P: 11-000

Research Paper

Received:
2000-00-00
Revised:
2000-00-00
Accepted:
2000-00-00
Published:
2000-00-00

ISSN: 2538-1857
E-ISSN: 2645-5250

Exploring the Security and Economic Threats and Opportunities of the Paris Agreement for Iran

Erfan Alizadeh [1] | Sayyed Yahya Alavi Razavi [2] |

Abstract

The Paris Agreement, as the most significant international convention in the field of climate change, obliges countries to formulate and implement greenhouse gas emission reduction plans known as Nationally Determined Contributions (NDCs). Within this framework, developing countries whose growth pathways are heavily dependent on fossil fuels, such as Iran, face a range of challenges and risks. Accordingly, examining the opportunities and threats arising from the Paris Agreement for Iran's economic and national security has become a key policy question. This study seeks to address whether the Paris Agreement should be regarded merely as a restrictive instrument targeting countries like Iran or as a potential platform for restructuring economic and technological systems. To this end, the research adopts a qualitative thematic analysis approach. The Paris Agreement documents and three key conferences of the United Nations Framework Convention on Climate Change (COP21, COP26, and COP29) are analyzed.

Textual data were coded and examined using MAXQDA software. The findings indicate that, from an economic perspective, pressure on crude oil and petroleum product exports, declining foreign exchange revenues, and rising adaptation costs for energy-intensive industries constitute the main threats. In addition, international sanctions have significantly constrained Iran's access to international mechanisms, including carbon markets and climate finance instruments. From a security perspective, the results point to increased energy insecurity and a reduction in Iran's regional bargaining power.

At the same time, opportunities such as the development of renewable energy, the attraction of climate finance, technology transfer—conditional upon the removal of institutional and banking barriers—and the use of regional diplomacy are identified. Overall, the findings suggest that under current conditions, threats outweigh opportunities, highlighting the need for policy measures focused on strengthening domestic resilience and pursuing targeted diplomacy to gain access to resources and technology.

Keywords: Paris Agreement, climate change, thematic analysis, climate security, economic threats

1. Master's in Economics, Kharazmi University of Tehran, Tehran, Iran erfanalizadeh3880@gmail.com
2.Corresponding author: Assistant professor at Imam Hussein Comprehensive University
sy.alavi@ihu.ac.ir

Introduction

Climate change has become one of the most critical global challenges of the twenty-first century, characterized by its transnational, intergenerational, and multi-sectoral impacts. In response, the international community has developed cooperative frameworks under the United Nations Framework Convention on Climate Change (UNFCCC), most notably the Paris Agreement. This agreement obliges all member states to formulate and implement Nationally Determined Contributions (NDCs) aimed at mitigating greenhouse gas emissions and enhancing climate resilience(Zandi, et al, 2019).

For developing, fossil fuel–dependent economies such as Iran, the Paris Agreement presents a fundamental dilemma between the necessity of global climate cooperation and the imperative of preserving economic growth and energy security. As a major producer of oil and natural gas, Iran faces significant structural and political constraints in fulfilling its climate commitments. Economic sanctions, limited access to low-carbon technologies, restricted foreign investment, and inefficiencies within the domestic energy sector have complicated the implementation of the Paris Agreement. Moreover, Iran's limited access to incentive mechanisms such as carbon markets and international climate finance has reduced the potential benefits of participation in the global climate regime.

This study seeks to address the central question of what opportunities and threats the Paris Agreement poses for Iran's economic and national security. It examines whether the agreement functions primarily as a restrictive mechanism for developing countries or whether it can serve as a platform for economic restructuring and technological transformation. Adopting a qualitative and exploratory research design, the article employs thematic analysis to examine the core texts of the Paris Agreement and the outcomes of recent Conferences of the Parties (COPs), with the aim of identifying key economic and security implications for Iran.

The theoretical framework integrates national and energy security theory with the concept of complex interdependence, emphasizing the multidimensional nature of climate governance.

From an energy security perspective, economies reliant on fossil fuel exports face risks such as declining revenues and increased vulnerability to external pressures under stricter climate commitments. At the same time, insights from environmental economics suggest that non-compliance with climate obligations may lead to economic costs, including exclusion from international investment and financial mechanisms.

Empirically, Iran is among the world's major greenhouse gas emitters, accounting for approximately 1.8 percent of global CO_2 emissions in 2020. This highlights both Iran's responsibility within global mitigation efforts and the strategic significance of climate policy for its long-term economic and security interests. Ultimately, this study aims to provide a critical and multi-layered understanding of Iran's position within the evolving global climate regime and its implications for national security and economic sustainability.

Methodology

This study adopts a qualitative and exploratory research design aimed at developing an in-depth understanding of the economic and security-related opportunities and threats arising from the Paris Agreement for Iran. A qualitative approach was selected to facilitate the exploration of latent meanings and relationships embedded within policy texts, rather than testing predefined hypotheses. This approach enables a nuanced interpretation of climate governance mechanisms and their implications for fossil fuel–dependent economies.

Data were analyzed using thematic analysis, which allows for the systematic identification, organization, and interpretation of recurring patterns within qualitative data. The primary data sources included official United Nations climate change documents, the text of the Paris Agreement, outcomes and declarations from major Conferences of the Parties (COP21, COP26, and COP29), as well as relevant policy reports and analytical studies addressing Iran's position within the global climate regime. The unit of analysis consisted of key sentences and paragraphs containing concepts related to security, economy, energy, and climate policy, as these textual units convey complete and meaningful analytical content.

The thematic analysis followed the six-step framework proposed by Braun and Clarke (2006). These steps included

familiarization with the data through repeated reading, generation of initial codes related to opportunities, threats, and security–economic implications, identification of preliminary themes by clustering similar codes, review and refinement of thematic coherence, definition and naming of core themes, and final interpretation of findings in relation to the research questions. Examples of major themes included energy security, constraints on fossil fuel exports, financial pressures, and access to carbon markets.

All stages of coding and analysis were conducted using MAXQDA 2020 software to ensure systematic data management and traceability. To enhance the trustworthiness and validity of the findings, strategies such as peer review of selected codes and themes, within-text comparison across multiple documents, and detailed documentation of the analytical process were employed. Ultimately, this methodological approach facilitated the development of a coherent conceptual framework explaining the economic and security implications of the Paris Agreement for Iran.

Result and discussion

Based on the qualitative thematic analysis of Paris Agreement documents and selected COP outcomes, a total of 54 initial codes were identified, which were subsequently consolidated into 44 sub-themes and 10 main themes. These themes were hierarchically organized into a conceptual tree model structured around two overarching categories: threats and opportunities, both framed under the broader concept of climate commitments.

The findings indicate that Iran faces significant direct economic pressures as a result of global climate policies. Key operational threats include increased pressure on energy-based exports due to the implementation of carbon standards and border adjustment mechanisms such as CBAM, which reduce the competitiveness of carbon-intensive products including steel, cement, and petrochemicals. In addition, declining demand in traditional energy markets and rising compliance costs contribute to reduced foreign exchange revenues and instability in Iran’s trade balance. Energy-intensive industries also face growing adaptation costs associated with low-carbon technologies, while international sanctions and

political constraints restrict access to clean technologies and disrupt supply chains.

Beyond these direct effects, the analysis reveals several indirect and strategic implications. Reduced export revenues weaken Iran's regional bargaining power and limit its financial and political leverage in energy diplomacy. Economic pressures on the energy sector further increase vulnerability in energy security and may exacerbate social instability through price volatility and service disruptions. Moreover, the interaction between sanctions and weak institutional capacity has excluded Iran from international climate mechanisms such as carbon markets and climate finance instruments, transforming potential opportunities into structural disadvantages.

At the same time, the results highlight conditional but meaningful opportunities. Iran possesses substantial renewable energy potential, particularly in solar and wind power, which could partially offset declining fossil fuel revenues if supported by institutional reforms and international cooperation. Access to financial mechanisms under Article 6 of the Paris Agreement and climate funds could offer additional benefits, although realization of these opportunities depends on sanctions relief, credible emissions reporting, and improved climate diplomacy. Indirect opportunities also emerge through regional technological cooperation, diversification of exports, and the development of downstream and low-carbon industries.

Interpretive analysis shows that the balance between threats and opportunities is shaped by three interconnected levels: Iran's fossil fuel–dependent economic structure, its constrained international position under sanctions, and domestic governance weaknesses, including fragmented policymaking and limited transparency. Without coordinated reforms across these levels, climate commitments are more likely to intensify economic and security vulnerabilities. However, with active climate diplomacy, institutional reform, and strategic investment, the Paris Agreement could serve as a catalyst for economic modernization and enhanced energy security rather than a purely restrictive regime.

Conclusion

This study examined the economic and security-related opportunities and threats arising from Iran's commitments under the Paris Agreement using a qualitative thematic analysis. By coding and synthesizing key climate policy documents, the research provides a structured understanding of how international climate obligations interact with Iran's economic structure, security considerations, and international position.

The findings indicate that climate commitments pose significant structural challenges for Iran's oil-dependent economy. Emissions reduction requirements and carbon-related trade restrictions exert direct pressure on energy-based industries that constitute the backbone of national revenue. These challenges are intensified by international sanctions, which have effectively excluded Iran from key mechanisms such as carbon markets and climate finance instruments, thereby transforming potential opportunities into reinforced economic constraints. From a security perspective, the imbalance in climate governance and limited access to renewable infrastructure increase vulnerabilities in national energy security and reduce Iran's regional bargaining power.

At the same time, the study demonstrates that climate-related opportunities—such as renewable energy development, technology transfer, and regional cooperation—are real but conditional. Their realization depends on institutional coordination, transparent emissions reporting, active regional climate diplomacy, and alternative financial pathways.

Accordingly, any revision of Iran's Nationally Determined Contribution should be aligned with domestic economic realities, integrated into foreign policy and regional cooperation frameworks, and supported by coherent governance structures. Without such an integrated approach, climate commitments risk amplifying existing vulnerabilities rather than contributing to sustainable development and national security.

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