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Intersectional Approaches to Climate Action: A Comparative Study of Women's Equality and Indigenous Voices in Iceland and New Zealand

Sixtine Foucaut
Chapman University, foucaut@chapman.edu

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INTERSECTIONAL APPROACHES TO CLIMATE ACTION:
A COMPARATIVE STUDY OF WOMEN'S EQUALITY AND INDIGENOUS VOICES IN
ICELAND AND NEW ZEALAND

A Thesis by
Sixtine Foucaut

Chapman University
Orange, CA
Wilkinson College

Submitted in partial fulfillment of the requirements for the degree of
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Committee in charge:
Lynn Horton, PhD, Chair
Andrea Molle, PhD
Mackenzie Crigger, PhD



CHAPMAN UNIVERSITY
WILKINSON COLLEGE OF ARTS, HUMANITIES, AND SOCIAL SCIENCES
International Studies

The thesis of Sixtine Foucaut is approved.

Lynn Horton

Lynn Horton, PhD, Chair

Andrea Molle

Andrea Molle, PhD

Mackenzie Crigger

Mackenzie Crigger, PhD

April 2022

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ABSTRACT

INTERSECTIONAL APPROACHES TO CLIMATE ACTION: A COMPARATIVE STUDY OF WOMEN’S EQUALITY AND INDIGENOUS VOICES IN ICELAND AND NEW ZEALAND

by Sixtine Foucaut

Climate change is one of the greatest challenges our world faces today and will be facing for generations to come, as nature and its ecosystems increasingly experience extreme weather patterns and irreversible environmental damage. Marginalized populations such as women and indigenous peoples have been disproportionately impacted by climate change and offer unique and valuable perspectives and lived experiences of climate change. This paper adopts an intersectional approach. Its comparative case study of Iceland and New Zealand explores how women and indigenous peoples have informally and formally contributed to climate action policies. This research analyzes the relationship between the Global Gender Gap Index and the Environmental Performance Index. It also incorporates a comprehensive literature review to better understand how women and indigenous peoples shape wider socio-cultural understandings, values, and attitudes toward the environment and how they contribute to climate action policies. By exploring how Icelandic and New Zealand groups shape cultural understandings of climate change in both non-technocratic and formal institutionalized channels, this thesis offers insights on how to support these groups while also advancing mitigative and adaptive strategies to climate crisis.

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Research Background and Rationale:

Climate change is one of the greatest challenges our world faces today and will be facing for generations to come, as extreme weather patterns and irreversible environmental damage increasingly harm nature and its ecosystems. Nearly every country is experiencing these anthropogenically-caused, or human-induced, environmental threats, as a result of the burning of fossil fuels increasing greenhouse gas emissions, the deforestation of the vital carbon-capturing rainforests like the Amazon, and plastic pollution contaminating fragile marine ecosystems among countless other exogenous variables (Sachs, 2015). Since the Industrial Revolution, atmospheric concentrations of heat-trapping greenhouse gasses such as carbon dioxide have increased at an alarming rate (Martinez, 404). It is essential to establish the distinction here between greenhouse gasses occurring in the natural environment and those occurring in excess due to human activity like the burning of fossil fuels from industrial plants and vehicles. This excessive release induces the greenhouse effect wherein Earth's atmosphere traps these gasses and increases the average global temperature, thus heating the planet and contributing to the extreme climate events all over the world (Martinez, 403). Although all nations will be impacted by climate change to some degree, nations located in more geographically vulnerable regions like island nations are at greater risk of climate catastrophes such as rising sea levels (Sachs, 2015).

While climate change research and policy debates often center natural science data, this thesis argues that sociocultural factors, in particular historical and structural inequalities, are a key element in analyzing and addressing this complex issue. In particular, broader Global North and Global South inequalities indicate that not all nations nor groups of people will be equally impacted by climate change, as certain regions have more or less financial means and

infrastructure to prevent and combat the crisis (Sachs, 2015). Furthermore, within nations, demographic characteristics such as gender, race, and class play a pivotal role in determining who will bear the brunt of climate change. Women, indigenous peoples, and the poor have been both disproportionately impacted by climate change and have organized to call for a variety of adaptation strategies to face the climate crisis and current environmental hazards (Osman-Elasha). This paper will adopt an intersectional approach and will explore the gender and indigenous factors as core axes of difference – further mediated by class, race, and nationality – in both groups’ disproportional struggle with regards to climate change and their potential to address the crisis through increased women’s equality and the amplifying of indigenous voices.

Women worldwide are considered increasingly more vulnerable to climate change than men due to the fact that approximately 70-80% of those 1.3 billion people living in poverty are women (Osman-Elasha). Land ownership is linked to greater resilience in a changing climate, and although the world’s food production is overseen from 50-80% by women, they still own less than 10% of the land (Osman-Elasha). Moreover, the differences in expected gender roles, responsibilities, and opportunities, along with women’s historic lack of access to land, natural resources, education, technology, credit, and decision-making structures are all determinants of women’s individual and collective capacities to adapt to environmental challenges from climate change (Aguilar, 2013). Although women around the world have proven to propose and enact valuable climate policies, they are not consistently included in the discussion nor decision-making of global climate change policies, and hierarchical governance and sociocultural systems have seemingly solidified unequal gender roles and access to natural resources (Kallis et al., 2020). Similarly, indigenous peoples around the world are

disproportionately impacted by climate change due to their dependence on and stewardship to the natural environment. As noted by the United Nations Department of Economic and Social Affairs, the crisis aggravates the injustices that indigenous peoples already face, such as “political and economic marginalization, loss of land and resources, human rights violations, discrimination and unemployment” (*United Nations Department of Economic and Social Affairs*). Although many societies have been disrupted by capitalism, colonization, and industrialization, indigenous scholars around the world are making important contributions to address anthropogenic environmental impacts through climate resiliency plans (Whyte, 2017).

Research Design and Research Questions:

Given the above context, this research will aim to respond to the following two questions: How do women and indigenous peoples shape wider cultural understandings of climate change and human to nature relationships? How do women and indigenous peoples influence national policy responses to climate change through both non-technocratic and institutionalized channels?

Iceland and New Zealand are ideal case studies of the role women and indigenous peoples in shaping climate policies for several reasons. Both countries are high income democracies with strong commitments to climate action plans, and in both nations, women and indigenous peoples have made important gains in status, legal rights and recognition, and have a voice in policy making. Iceland and New Zealand rank in the top twenty countries on the 2020 Environmental Performance Index, perhaps influenced by the shared visual indicators of climate change seen in the melting of both nations’ invaluable glaciers and more extreme weather events (Wendling et. al, 2020). They consistently rank high on the Global Gender Gap Index, both in the top ten countries, offering an ideal opportunity to explore how conditions of gender equality and gender input shape climate change responses, while the selection of New Zealand also allows for

a comparative exploration of the contributions of the indigenous Māori people to the development of climate change measures. It should also be noted that in 2021, Iceland ranked first on the Global Peace Index (for the thirteenth consecutive year), and New Zealand ranked second, mainly measured through their degree of militarization, societal security and safety, and the extent of ongoing international and domestic conflict, therefore providing insight for potential best practices for democratic solutions to global issues (Institute for Economics and Peace, 2021). This research will emphasize the importance of intersectional solutions through prioritizing women's and indigenous people's involvement as well as learning from these key groups when addressing the climate crisis.

Methodology:

This research will be based on quantitative and qualitative secondary data, research and case studies, and primary data collections. The purpose of the quantitative portion of the methodology is to explore whether there may be a potential correlation between the 2020 Global Gender Gap Index (generally understood as the importance of women in countries) and two environmental indexes: the 2021 Climate Change Performance Index and the 2021 Environmental Performance Index. While there are a number of important factors which impact a country's climate action ambition (e.g., gross domestic product, geographical location, gender, and level of education), this paper will examine the relationship between these quantitative indexes of gender equality and climate performance, as shown in the graph below. The Global Gender Gap Index benchmarks the evolution of gender-based gaps among four key dimensions, also known as subindexes, which will be reviewed below (Global Gender Gap Index, 2021). In the attempts to seek out a causal correlation, this paper will analyze the relationships between each one of these four dimensions and environmental performance to identify the more specific

indicators of the gender index that are likely to influence climate action (Global Gender Gap Index, 2021). A comparative quantitative analysis is not possible with respect to indigenous equality due to the lack of equivalent data on indigenous rights which would offer insight to compare and contrast with the analysis between gender equality and environmental performance.

After exploring a possible correlation between women's equality and global climate action, the purpose of the qualitative portion of the methodology is to build on existing research and identify the ways in which certain countries, specifically Iceland and New Zealand, are leading the way in climate action initiatives respectively through both feminist policies and the amplifying of indigenous voices. This section will include archival data collected from various sources from my travels to Iceland this spring such as personal communications with non-governmental organizations and historical physical documents to which I was granted access at the National Archives of Iceland and the National and University Library of Iceland. As a recent intern at the Secretariat of the United Nations Framework Convention on Climate Change (UNFCCC), my research also utilizes certain primary sources collected from the virtual panels, discussions, and events such as the COP26 conference's "Gender Day" in order to reinforce the qualitative portion of my research (UNFCCC, 2021). By offering an application of these groups' knowledge to the United Nations Sustainable Development Goals, UNFCCC Nationally Determined Contributions (NDCs), and the Paris Agreement, this paper will underscore best practices with a feminist and intersectional lens which includes indigenous knowledge.

Limitations:

Limitations of this research may include the fact that the intersection of gender, race or ethnicity, and climate vulnerability is still a relatively new topic of dialogue to many nations,

perhaps limiting access to the amount of existing impartial research or data. Depending on the results of my research, I may find that gender will not always be incorporated in the indigenous discussion, as empirical data might address women and indigenous peoples as two separate identities rather than a singular intersectional group. There may also be limited data on the particular indigenous women group due to the fact that the indigenous voice, especially with regards to the climate crisis, tends to be a unified one, wherein gender identity does not prevail over indigenous identity. While recognizing that indigenous women bring a qualitatively different identity to the climate debate, I may find that there is a lack of existing information on this marginalized group, as these members are subject to *both* racial and gender norms and stereotypes from mainstream Western society. Accordingly, I pose the following subquestion: Do these selected countries examine and recognize the complexities within the intersection of race or ethnicity and gender, or are these intersectional identities rather presented as separate, singular, homogenous lived experiences and perspectives?

The three indexes which will be used to explore a correlational relationship between gender equality and climate action each analyze data from different lists of countries, so not all signatories of the Paris Agreement may be included. Furthermore, the NDCs have been continuously updated recently up until the November COP26 2021 global conference in Glasgow, Scotland, thus potentially limiting the scope of information to be found from this source since it is quite recent. In addition, the NDC document submissions do not have a standardized structure or format, as each signatory to the Paris Agreement generally has the freedom to format its own document.

Detailed Environmental, Historical, and Political Contexts of Iceland and New Zealand:

Before discussing the case studies and content analysis, I will first provide context to address this question through examining Iceland and New Zealand's geographic location, political setting, and relevant history as it pertains to the countries' positioning towards gender equality and conservation of their natural environment. Both nations are home to an abundance of precious natural resources, namely glaciers, icebergs, and volcanoes, so this research will explore whether this is one of the reasons for their standing in the top twenty countries for environmental action performance; could Iceland and New Zealand's commitments to climate action be a result of their cultural value for nature and a desire to protect their topography, in addition to witnessing anthropogenic climate change?

Located in the North Atlantic Ocean, Iceland is Europe's westernmost country, broadly associated with the group of Nordic countries. This island nation lies just below the Arctic circle, with its capital, Reykjavik, being the northernmost capital in the world. It is important to note that although Iceland accepts thousands of immigrants every year, as a small island nation, it has comparably had very little significant immigration since the settlement of Norsemen dating back to the ninth century, and is therefore generally considered to be an ethnically-homogeneous country, with nearly 93% of inhabitants being of Icelandic descent, a North-Germanic ethnic group (World Population Review, 2021). The nation is one of the most geologically active regions in the world, featuring active tectonic plate movement, glacial movement, and more than two hundred volcanoes, experiencing a major volcanic event about every five years (*Visit Iceland*). Owing to its natural resources, the country and its economy both thrive and depend upon its fisheries, seafood exports, tourism, and clean or renewable energy generation. Glaciers cover approximately 11% of Iceland's land mass, with about two hundred seventy named

glaciers in total (National Geographic, 2021). Roughly one quarter of Iceland is under formal protection either through national parks or other protected area categories, some of which have been recognized as UNESCO World Heritage sites such as Thingvellir National Park and its meeting of two tectonic plates, showing the significance of Iceland's untouched nature to the international community (Government of Iceland, 2020). As anthropogenic climate change continues to lead to warmer temperatures, the glaciers in Iceland are under attack and melting at an alarming rate. According to the Icelandic Meteorological Office, since 1989, the Vatnajökull ice cap has lost nearly two hundred cubic kilometers of ice, with a reduction in its area of more than four hundred square kilometers, indicating the dire need for their protection, as melting is likely an irreversible process (University of Dundee, 2021).

Transitioning from one island country to the next, New Zealand is located in the southwestern Pacific Ocean, with two main landmasses and over seven hundred smaller islands, located on the opposite side of the Earth's hemisphere in comparison to Iceland. With a highly globalized economy, New Zealand depends on its agricultural exports and international trade in its free market system. As of 2021, New Zealand's population was over 5.12 million, nearly thirteen times that of Iceland (World Population Review, 2021). Approximately 17% of the population consists of Māori people, Tangata Whenua, or the indigenous people of New Zealand ("New Zealand People," 2021). Māori people make vital contributions to New Zealand society, culture, food, art, and science, as will be explored specifically through their climate change research and reports presented through an indigenous lens, a prime example of how a country attempts to include the voices of groups who have been historically under-amplified, especially as they are disproportionately concerned regarding the climate crisis. Māori people have more recently received recognition in the scientific community for their contributions and worldview,

sometimes referred to as Mātauranga Māori, or the “knowledge, comprehension or understanding of everything visible or invisible that exists within the universe” (“Mātauranga Māori and Science,” Science Learning Hub - Pokapū Akoranga Pūtaiao). While there is a contrast in demographics and population size from Iceland, New Zealand is similarly home to thousands of glaciers and icebergs, experiencing an alarming record glacier thinning rate of 1.5 meters per year from 2015 to 2019 (Hugonnet, Romain, et al., 2021). Approximately one third of New Zealand’s land area is under legal protection for conservation purposes, from glaciers to forests, sandy beaches, volcanoes, and steep snow-covered mountains (“New Zealand.com,” 2021). Comparably, New Zealand is roughly double the size of Iceland, yet both countries have uncannily similar topography, natural resources, and landscapes.

Both countries’ retreating glaciers and icecaps act as the ideal visual indicators of the irreversible effects of climate change caused by increasing global temperatures. The rapid melting of both nations’ thousand-plus-year-old glaciers signifies that sea levels would rise since the ice would be submerged underwater instead of being above sea level or in the air. This increase in ocean water and higher sea levels implies that the ocean would begin to cover coastal cities inch by inch – and in fact already is – therefore decreasing land area by submerging it (National Geographic, 2021). Sea level rise signifies the destruction of habitats and the flooding of coastal cities. In addition, melting glaciers imply the major loss of ice’s valuable ability of reflecting the sun’s rays, and almost acting as regulators of Earth’s atmospheric temperatures, since darker surfaces are exposed when glaciers melt, thus absorbing heat and potentially increasing temperatures even more (National Geographic, 2021). Ironically, despite Iceland’s small population of just under 370,000, the country is actually growing in landmass by up to five centimeters annually due to its splitting tectonic plates (*Visit Iceland*). In any case, the existing

data on the implications of climate change may aid the design of climate adaptation policies for management of natural resources on a local- and regional-scale, as well as for the global-scale mitigation of extreme weather events and sea-level rise in both countries (Hugonnet, Romain, et al., 2021). Both nations exhibit landscapes abounding with precious glaciers, volcanoes, waterfalls, fjords, caves, and geothermal activity, arguably setting the foundation for their need for strong national environmental policies to protect the land and their resources. Nevertheless, it is important to note that Nordic countries often gain recognition for paving the way in handling global issues effectively (e.g. the COVID-19 pandemic, environmental and natural resource protection, paid parental leave, etc.), however New Zealand offers a worthy case to study as it is also acting as a trailblazer, but perhaps leading the way towards climate action in different ways than the Nordic nations, and therefore merits attention for this research.

Given this geographical and environmental context, we can better situate both countries' historical and political conditions. Firstly, New Zealand has ranked in the top ten countries on the 2020 Global Gender Gap Index as well as in the top twenty countries on the 2020 Environmental Performance Index (Global Gender Gap Index, 2021). It became the first country to grant women the right to vote in 1893, and still prides itself on this cultural principle of gender equality as enshrined in national law, showing commitment to advance women's rights (Inter-Parliamentary Union, 2021). Prime Minister Jacinda Ardern has shown dedication to maintaining a sexually and racially and ethnically diverse cabinet, comprised of a parliament being nearly 50% female, 15% percent identifying as LGBTQ+, and 25% indigenous Māori cabinet members (Inter-Parliamentary Union, 2021). Appropriately, it should be noted that a necessary component to creating gender-responsive climate action is through intersectionality, which may be exemplified through this nation's public appreciation for indigenous knowledge, especially

towards environmentalism and sustainability. A multidisciplinary Māori research team working across various research institutions has used a Māori risk assessment approach in order to advise climate change decision-making through an indigenous perspective. As is stated in the comprehensive report, climate-related adverse health impacts will continue to be disproportionately felt by marginalized groups such as Māori people who already suffer health inequities (Awatere et al., 2021).

Comparatively, Iceland has ranked as the top country on the Global Gender Gap Index for over a decade and has ranked in the top twenty countries on the 2020 Environmental Performance Index (Global Gender Gap Index, 2021). An example of Iceland's commitment to gender equality in climate change is seen through their report for the Organisation for Economic Co-operation and Development (OECD), wherein the document explicitly recognizes that globally, although women's ecological footprint is smaller than men's, the task of overcoming the burdens of climate change consequences often largely rests on women (Ministry for Foreign Affairs & Icelandic International Development Agency, 2013). Moreover, the nation continually places emphasis on the involvement of both women and men in policy and decision-making regarding environmental, resource, and climate change issues. It is a country which encourages gender equality and women's empowerment to incorporate women's perspectives to be taken into serious consideration, especially for geothermal energy use, of which Iceland is a world leader in its usage (Ministry for Foreign Affairs & Icelandic International Development Agency, 2013). In order to strengthen this comparison, my research will also analyze Iceland and New Zealand's NDCs, or documents submitted every five years to the United Nations Climate Change Secretariat specifying climate action targets prepared, communicated, and maintained by each signatory country of the Paris Agreement (Huyer, 2016). These commitments essentially embody

efforts and objectives each country aims to achieve to reduce domestic greenhouse gas emissions, mitigating, and adapting to the impacts of climate change (Huyer, 2016).

The gender and ethnicity factors in each of these countries serve as indispensable lenses by which to understand and ultimately protect the prized natural environments discussed above. The following section will briefly identify some policies of each country's NDCs as they address gender and indigenous equality and equity.

Iceland Climate Action and Gender Policies:

Given both nations' geographic and environmental context, this section will now review their climate action and gender policies. Iceland reasonably ranks at number seventeen (out of 180 ranked countries) on the 2020 Environmental Performance Index and correspondingly has a variety of regulations to protect the natural environment, as enshrined by the UNFCCC Paris Agreement (Wendling et. al, 2020). With roughly one third of all people in Iceland living in the capital city of Reykjavik, the nation aims to achieve carbon neutrality by 2040, cut greenhouse gas emissions by 40% by 2030, and has outlined nearly fifty actions as policy instruments (NDC Iceland, UNFCCC, 2020). The country is distinct in the sense that nearly all of its heating and electricity generation is derived from renewable resources such as geothermal energy and hydropower. According to Iceland's most recent submission of their NDC, the country recognizes that aside from land use, the majority of their emissions originates from "industrial processes, road transport, agriculture, fisheries and waste management," so there is potential for carbon uptake through revegetation and afforestation (NDC Iceland, UNFCCC, 2020). Furthermore, Iceland is among a handful of signatory countries to include commitments to gender equality in its NDC, as it pledges to "prevent gender discrimination and to create and maintain equal rights and opportunities for all genders in all aspects of the community," thus

acknowledging that the incorporation of gender equality in climate action is fundamental (NDC Iceland, UNFCCC, 2020). Although this concise statement may not appear to have much legally-binding weight, the mere recognition that the topic of gender equality belongs in a climate change document is significant because it reveals Iceland's conceptualization that the former does indeed pertain to the latter. Furthermore, Iceland became the first country in the world to elect a female president in 1980 and is one of a handful of countries to legally enforce equal pay and similar legislation on gender equality, indicators as to why it is ranked the most gender-equal country for the twelfth consecutive year. For instance, under the country's Act on Equal Status and Equal Rights Irrespective of Gender, also known as the Gender Equality Act, every four years, the Prime Minister (currently Katrín Jakobsdóttir) must submit to parliament a motion for a governmental resolution on a gender equality action plan after reviewing proposals and consultations from the ministries and the Directorate of Equality, and the action plans align with the United Nations Sustainable Development Goals (*Government of Iceland*).

New Zealand Climate Action and Indigenous Policies:

While New Zealand's proportion of global greenhouse gas emissions is rather small, emissions from the country rose by an alarming nearly 60% from 1990 to 2018, making it the second-largest increase of all industrialized countries (NDC New Zealand, UNFCCC, 2020). Nevertheless, New Zealand ranks at number nineteen on the Environmental Performance Index, as it has more recently aimed to reduce its net emissions to 50% below its gross 2005 levels by 2030, and committed to net-zero emissions by 2050, among similar promising targets (NDC New Zealand, UNFCCC, 2020). Furthermore, under the NDC's sub-element regarding gender and indigenous peoples, New Zealand provides extensive details on the implementation plans pertaining to the partnership between the Crown and indigenous New Zealanders, Māori, through

Te Tiriti o Waitangi (NDC New Zealand, UNFCCC, 2020). As detailed, the country adopts various methods to engage with Māori people regarding climate change risks, opportunities, and responses, and moreover that their government has created the Māori-Crown Engagement Framework and Partnership Guidelines to warrant “that Māori have full involvement in all phases of policy design, implementation, and evaluation to support agencies to develop true partnerships with Māori” (NDC New Zealand, UNFCCC, 2020). Although reaching gender and racial or ethnic equality have their own sets of unique challenges, similar to Iceland’s strong commitment to gender equality, New Zealand is determined to emphasize the importance of amplifying indigenous voices with respect to climate action policies and implementation. For instance, the country’s current Minister of Foreign Affairs, Hon. Nanaia Mahuta is the nation’s first female Māori person to hold the position, and the first woman to wear the traditional Māori chin tattoo, moko kauae, while serving as a lawmaker, thus displaying signs of inclusion in some of the highest positions of government (Inter-Parliamentary Union, 2021).

Unquestionably, on a global level, those living in poverty, especially women and girls, who are the least responsible for harmful greenhouse gas emissions, are disproportionately impacted by climate change. The Lima Work Programme on Gender is an example of action which aims to ensure the equal participation of women and promotion of gender-responsive climate policy in the UNFCCC process as included in the agendas of various conferences including the recent COP26 (“Overrepresentation of Men in UN Climate Process Persists,” 2021). Despite the programme’s progress, it should be noted that men accounted for a staggering 74% of total speaking time in plenary sessions at COP25 in 2019, and at COP26 in 2021, 67% of UN climate change committee members were men (“Overrepresentation of Men in UN Climate Process Persists,” 2021). For this reason among others, there is an urgent call for more women’s

representation, inclusion, and participation in order to attend these global conferences for the opportunities to produce inclusive climate change policies with a feminist or gender-responsive lens. Without immediate action to limit warming, the damage could become irreversible for the world's poor to secure their livelihoods with respect to the Sustainable Development Goals ("Climate change." Synthesis Report, 2001). Since women represent the majority of the world's poor and are proportionally more dependent on natural resources threatened by climate damage, it is crucial to incorporate social inclusion through sustainable development and the equitable representation and participation of women and indigenous peoples as well as uplift other marginalized groups (Sachs, 2015).

Gender, Ethnicity, and the Environment: Additional Global Context

Across generations, women and indigenous peoples have played a key role by first responding to managing natural resources and have helped their communities form cultural understandings of our human relationship and responsibilities to the environment. Due to their historic exclusion from environmental policymaking, there is a need to understand the importance of prioritizing gender inclusive policies, such as NDCs, which can result in more ambitious or effective climate solutions, and perhaps emphasize the importance of the potential synergies with other Sustainable Development Goals since more voices are heard.

The lack of women's presence in climate change adaptation and mitigation, as well as their potential to find and contribute to effective solutions presents a dire need for climate action through both the Paris Agreement's Nationally Determined Contributions and the United Nations Sustainable Development Goals (Huyer, et al., 2016). Huyer's charts and specific examples of countries' NDCs are useful in highlighting those nations taking actionable steps to address the

relationship between gender and climate through UN conventions. As stated by the UN, women, just like indigenous groups, are oftentimes the first to respond to managing the natural environment especially in developing countries, and have generational knowledge on tasks such as collecting clean water, foraging for food in various ecosystems, and overseeing land and livestock, however rarely own the land themselves (Quiñones, 2021). Arora-Jonsson similarly emphasizes the importance of women worldwide interacting with their local natural resources, and highlights the relationship between women's virtuousness and moral connection towards the environment and vulnerability with respect to climate change (Arora-Jonsson, 2011). Since this article compares and contrasts cases from the Global North and Global South, it is useful in highlighting the urgency of women's inclusion in all countries – even acknowledging varying GDP, geographical location, existing climate policy, etc. (Arora-Jonsson, 2011).

An additional recent article may both complement or help contrast the fact that while the Paris Agreement represents a new era of climate policies, it still often restricts women's roles to specific concerns about vulnerability, instead of the overall relationship between gender and the climate crisis (Mitchell, Taylor, 2017). It is important to recognize the difficulty of actually operationalizing gender and climate change solutions as the climate crisis continues to worsen, especially because the Paris Agreement brings concern for gender and equity (Gonda, 2019). Gonda's critique of the treaty emphasizes that the other aforementioned articles shift the attention from concerns about the biophysical effects of climate change to rather the authoritative processes which produce oppression and vulnerabilities around the world. Appropriately, it is essential to reference Kimberlé Crenshaw's pivotal work in civil rights, gender issues, and critical race theory, coining the term 'intersectionality' in 1989, which addresses the multiple social identities, forces, and ideological systems through which power and disadvantage are

constructed, especially impacting women of color (Crenshaw, Kimberlé W., 2017). By highlighting how systems of oppression often overlap for people with multiple identity categories (e.g. gender, race, sexuality, etc.), an intersectional lens is essential in a feminist approach to acknowledge the fact that differences such as gender and ethnicity also play a role in issues like climate change adaptation, as recognized by the Sustainable Development Goals (Gonda, 2019).

While the sources mentioned provide a framework for what existed in past environmental policies, there is a need for research to synthesize the facts and outline what a “model” nation’s gender and climate policies may entail to achieve the targets enshrined in the Paris Agreement and UN Sustainable Development Goals. In addition to making progress through gender-responsive policies, indigenous perspectives on climate change can be key mechanisms in developing non-technocratic approaches to the issue. It should be noted, however, that due to the fact that indigenous voices often hold non-technocratic and non-dominant understandings of nature, the solutions proposed by the Māori people of New Zealand may naturally be perceived as incongruent to more popular Western climate policies. By the same token, the Māori people of New Zealand are a prime example of another group disproportionately impacted by climate change who are dedicated to creating solutions (Manning et al., 2015). The Māori report previously mentioned synthesizes the latest climate change research through an indigenous lens by identifying impacts, implications, and strategies for mitigation and adaptation for various native groups in New Zealand (Awatere et al., 2021). Although it is written through an indigenous lens, it follows the Intergovernmental Panel on Climate Change’s (IPCC) recent report indicating the expectation of 1.5 degrees Celsius warming over the next twenty years, so the report offers Māori-focused guidance on sustainability areas often overlooked in mainstream

Western reports (Awatere et al., 2021). These examples of policies stemming from generational indigenous knowledge shows how through the collaborative efforts of historically under-amplified groups, there is real potential in creating timely solutions to climate change.

While my research includes the examples of Iceland and New Zealand which have high gender equality and support the idea that they might be more climate-ambitious, Magnúsdóttir points out that poststructural feminism claims masculine norms are deeply ingrained in climate institutions, so many policies are adapted to masculinized institutions, even in countries deemed more “equal” (Magnúsdóttir, 2015). Since many articles oppositely claim that gender-inclusive climate plans are more effective, there is a need for more research on whether simply a higher number of women in organizations is enough to enact real change, or whether comprehensive plans to increase women’s participation and leadership should be the focus. On this note, Rousseau examines a late 2000s case study in Bolivia wherein the feminist movement and indigenous movement influenced the rewriting of the 1967 constitution through a Constituent Assembly and a left-indigenous transformation of Bolivia (Rousseau, 2011). By advocating for the *Pacto de Unidad*, a league of grassroots organizations to support land reform, indigenous and agrarian rights, this unique example of representation of indigenous women’s gender-specific claims in politics through social movements enacted real change. Moreover, Rousseau highlights that the success of both movements is supported by the ability of indigenous women to situate themselves as central actors and stakeholders in such a political process. This case study is useful in exemplifying how intersectional activism can be key to political and social progress and can be applicable to the climate crisis as well. As previously mentioned, although Iceland is mainly ethnically homogenous (World Population Review, 2021), Alessio and Jóhannsdóttir suggest that both gender and race are important avenues of analysis for Iceland’s international tourism, as

women contribute greatly to the nation's marketing, yet there is still room for improvement when it comes to the representation of gender in tourism (Alessio, Dominic, and Anna Lisa Jóhannsdóttir, 2011). They further argue that even in the world's most gender equal country, the utilization of sexually alluring images of women to attract male tourist consumption requires attention as they argue that the depiction of women in Iceland's national marketing has been an alarming method to attract international male tourists. Consequently, despite the feminist legislative policies and women's protected rights Iceland implements, addressing discrepancies in everyday culture is yet another complex and oftentimes subjective issue (Alessio, Dominic, and Anna Lisa Jóhannsdóttir, 2011).

Women and indigenous peoples have historically offered an alternative model by which to view the human relationship with the environment – one which questions utilitarian and short-term economic gains and rather urges society to recognize nature's intrinsic, moral, spiritual, and aesthetic value, as well as our dependency on natural resources to survive. This may be broadly understood through gendered language as it pertains to nature, as Bechta notes that “language is a pervasive educator” (Bechta, 1999). For instance, the terms ‘mother nature,’ ‘barren soil,’ and ‘fertile land,’ are popular and powerful conceptual metaphors in provoking an emotional obligation to care for and tend to the environment. Although in certain cases, gendered language may unintentionally promote nature's subjugation, it is a nuanced tool that women and indigenous peoples (e.g. Māori and Aboriginal groups) have utilized to transfer knowledge and understanding of the environment through meaningful diction in both story-telling and policymaking (Bechta, 1999).

Quantitative Research:

This portion will now explore the potential correlations between gender equality and environmental performance. The assessment of countries' performance in the Climate Change Performance Index (CCPI) contrasts from that of the Environmental Performance Index (EPI) in that the latter consists of two main policy objectives, split into eleven categories with a total of thirty-two indicators total, while the CCPI consists of four performance categories with a total of fourteen indicators, as demonstrated in their graphics below.

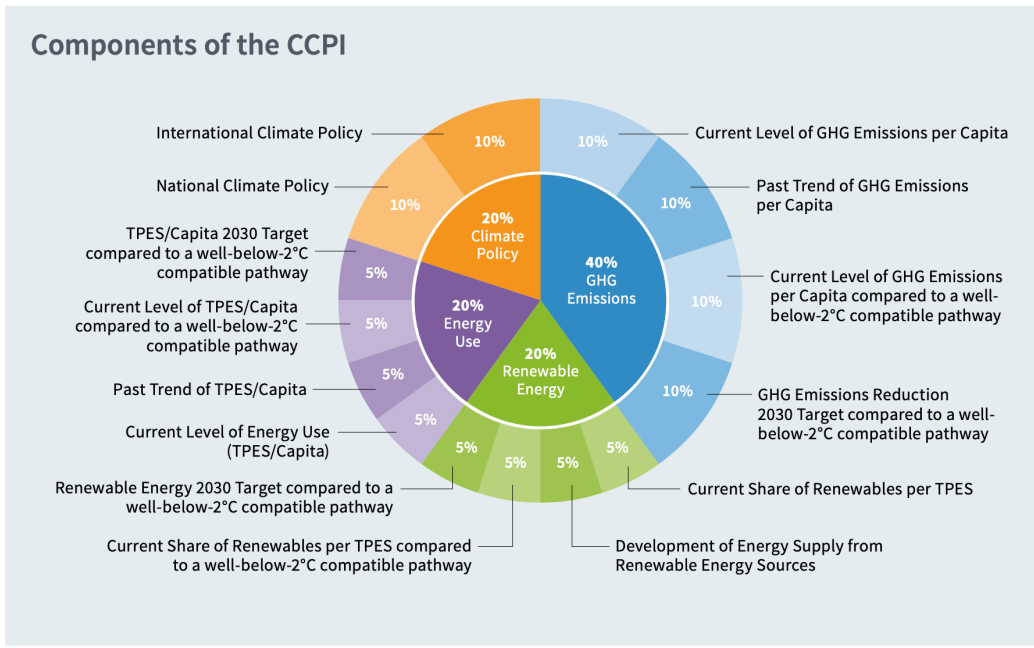
In order to better understand the relationship between women and climate action, there are three important quantitative databases this research will utilize to establish the relationship between women's equality and countries' climate action ambition. The first is the Global Gender Gap Index, released annually by the World Economic Forum to quantify the extent of gender-based gaps in the following four categories: Economic Participation and Opportunity, Educational Attainment, Health and Survival, and Political Empowerment (Global Gender Gap Index, 2021). The most recent edition of this index provided 2021 data for 153 countries, ranked on a scale from 0 to 1, with 1 representing the highest gender equality and 0 representing the least amount of gender equality, in the hopes of setting a foundation for proposing measures to reduce gender gaps based on each nation's progress. The second tool is the Environmental Performance Index, which provides a quantitative foundation for comparing and understanding the environmental performance of 180 countries through numerical ranking from recent 2020 data (Wendling et. al, 2020). This data-driven summary uses 32 performance indicators to rank countries based on environmental health as well as ecosystem vitality in the efforts to provide an understanding of how close countries are to achieving standardized environmental policy targets in accordance with the UN Sustainable Development Goals (SDGs) (Wendling et. al, 2020). The

final index this paper will use is the Climate Change Performance Index, an independent monitoring tool used to similarly enhance transparency in international climate politics and enable comparison of various countries' climate action. This tool assesses a nation's performance based on data gathered from the International Energy Agency (IEA), the Food and Agriculture Organization (FAO), PRIMAP, the national greenhouse gas inventories submitted to the UNFCCC, and the CCPI Climate Policy category (Climate Change Performance Index, 2020). This index uses fourteen indicators grouped into four categories: Greenhouse Gas Emissions, Energy Use, Renewable Energy, and Climate Policy. These three powerful reports will be useful instruments in measuring and comparing both climate action and gender equality on a global and national scale. While the three indexes mentioned above will set the foundation for understanding the importance and potential correlation of women's equality and climate action ambition and performance, this research also requires a qualitative approach to seek out sustainable solutions for the climate crisis. Although a few relevant treaties exist to consult, evaluate, and promote the equal rights of indigenous and tribal peoples, such as standards from the International Labour Organization, comparable internationally-recognized quantitative indexes or numerical data on the rights of indigenous peoples are not available (*International Labour Organization*). Accordingly, my research will utilize a case study comparison of two countries which appear to make a deliberate attempt to include the qualitative perspectives of certain historically marginalized groups in the fight for climate action, those being specifically women and indigenous peoples.

FIGURE 1-1. The 2020 EPI framework organizes 32 indicators into 11 issue categories and two policy objectives, with weights shown at each level as a percentage of the total score.



Environmental Performance Index, 2020

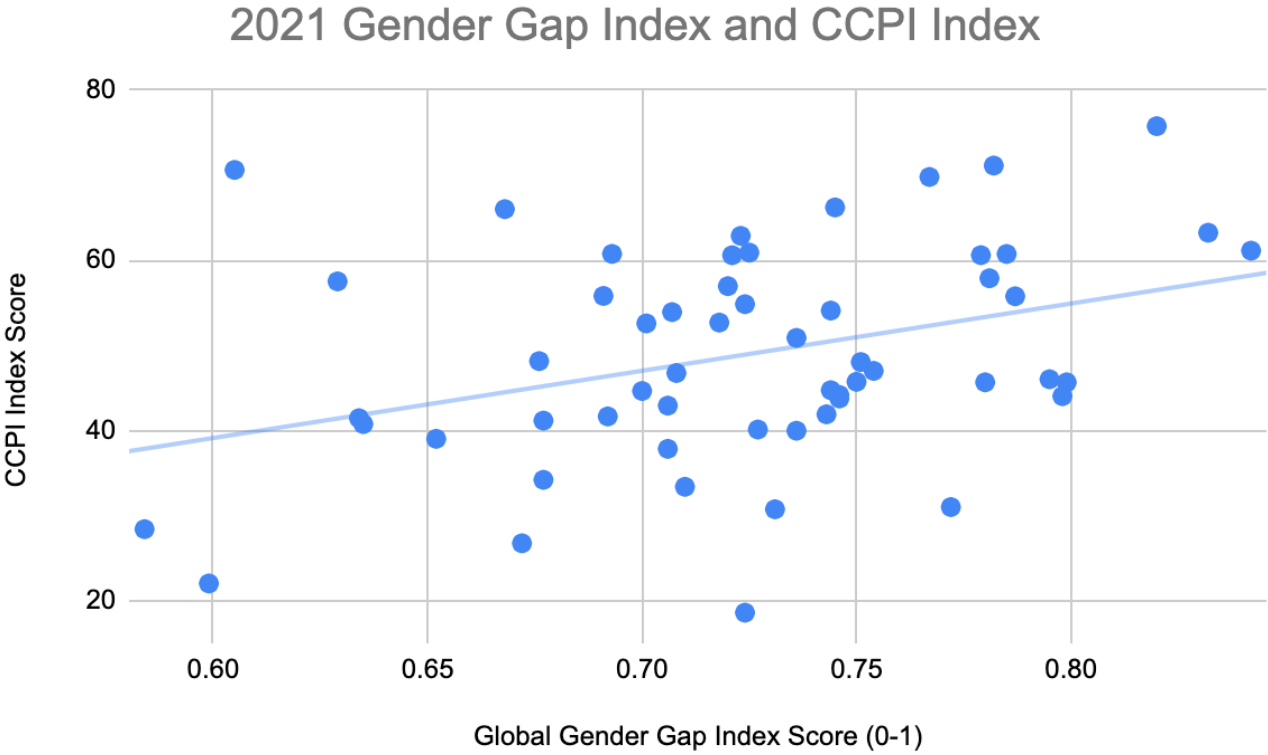


GHG = Greenhouse Gases | TPES = Total Primary Energy Supply

© Germanwatch 2019

Climate Change Performance Index, 2020

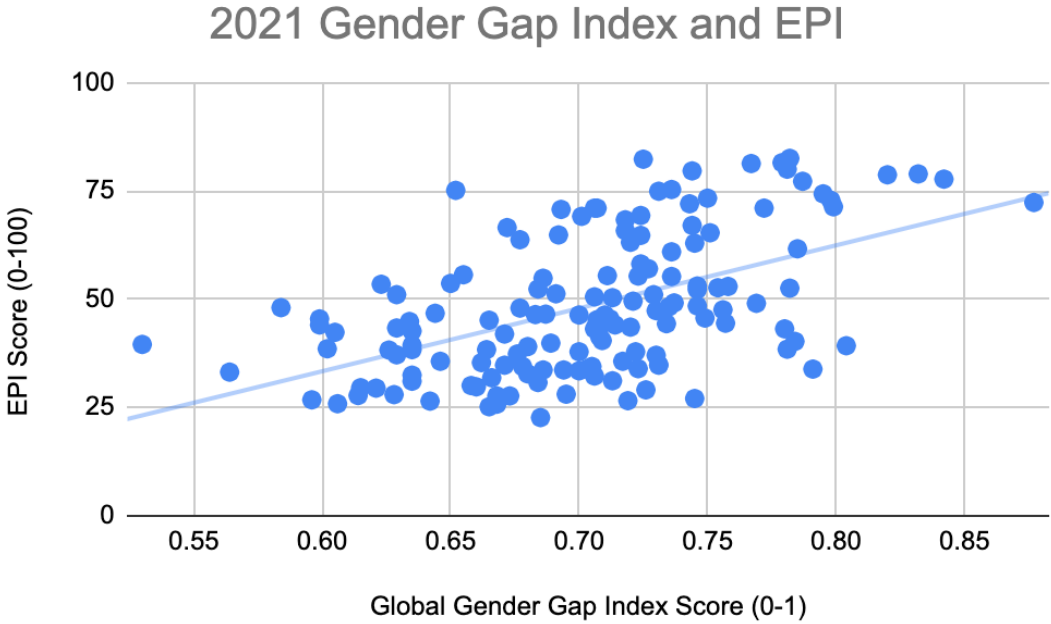
Firstly, I compiled the 2021 data of each country's scores from the Global Gender Gap Index and the CCPI and created a scatter plot to show the overarching correlation between nations' gender equality (x-axis) and climate performance (y-axis). There are a total of fifty-six countries included in this first chart. As displayed in the chart below, there is a positive correlation between these two variables, expressed through the upward-sloping trendline. This may suggest that a higher Global Gender Gap Index score will result in a higher CCPI score, clearly exemplifying a correlation, however more research may be needed to establish a true causal relationship, thus calling for the review of qualitative documents later in this paper to understand how these indicators might be associated.



Similarly, the next scatter plot utilizes the same raw data from the 2021 Global Gender Gap Index scores, however this time, is displayed against the 2021 data from the Environmental

Performance Index, which ranks 180 countries on environmental health and ecosystem vitality, thus contrasting from the CCPI given its more reliable data from more input values.

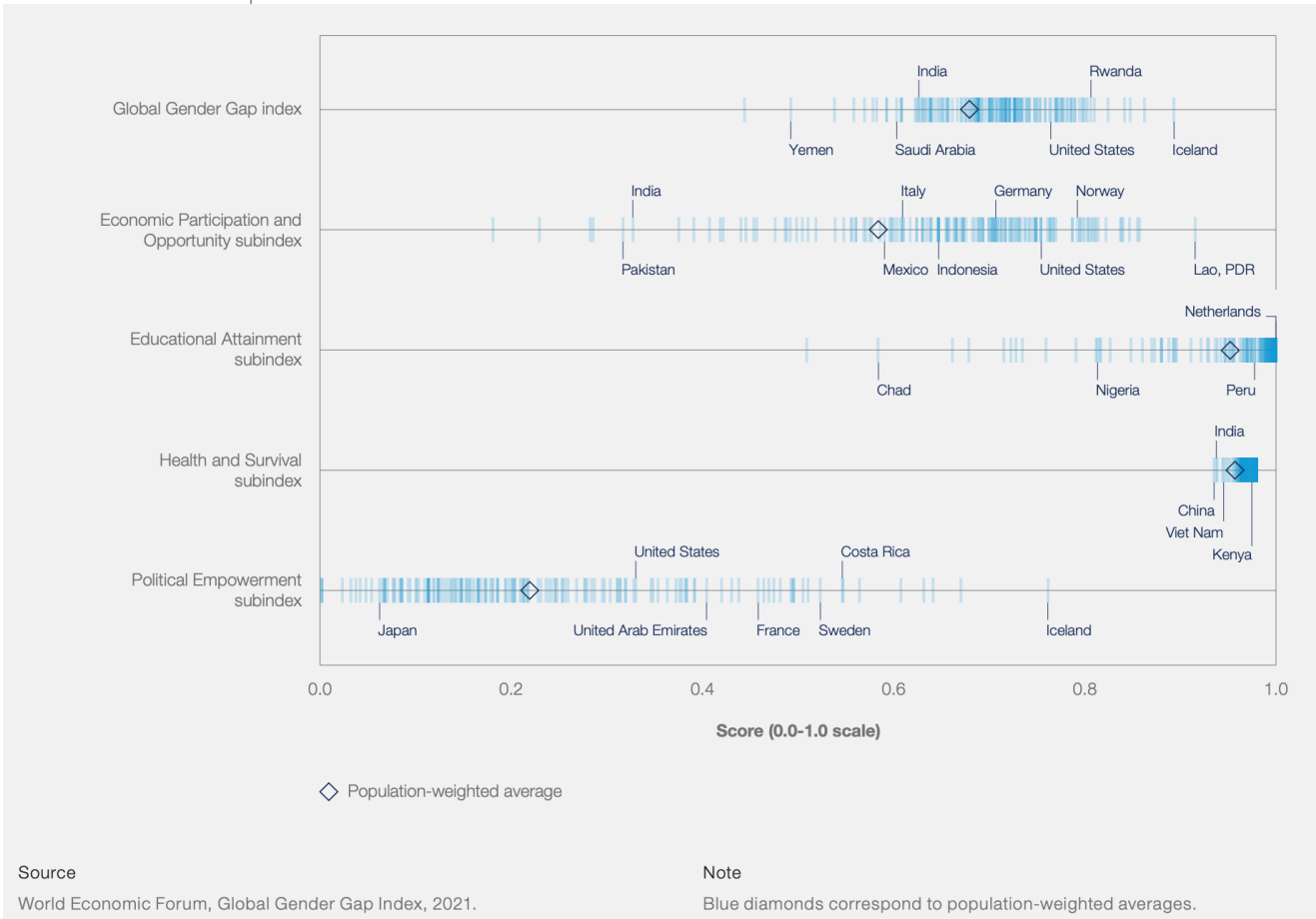
Appropriately, Iceland is located at the rightmost data point, indicating its standing at the top of the Global Gender Gap Index, and the following two data points to its left are Norway and Finland, both also located in the Nordic Region. The fourth rightmost country is New Zealand, making it the first country in the East Asia and Pacific Region to lead the way in both gender equality and environmental performance as seen in the chart below. As briefly mentioned earlier, while Nordic countries often gain recognition for applying effective strategies to international conflicts, New Zealand additionally offers a worthy case to study as it paves the way towards climate action through different approaches than the Nordic nations, and therefore merits attention for this research.



As previously mentioned, the Global Gender Gap Index consists of four subindexes: Health and Survival, Political Empowerment, Educational Attainment, and Economic Participation and Opportunity, and the charts below display their correlation with the EPI.

The graphic below highlights the various nation leaders of each sub-index from the Global Gender Gap report and is useful in helping to identify the more specific indicators of the gender index that are likely to influence climate action (Global Gender Gap Index, 2021).

FIGURE 1.3 | Range of scores, Global Gender Gap Index and subindexes, 2021

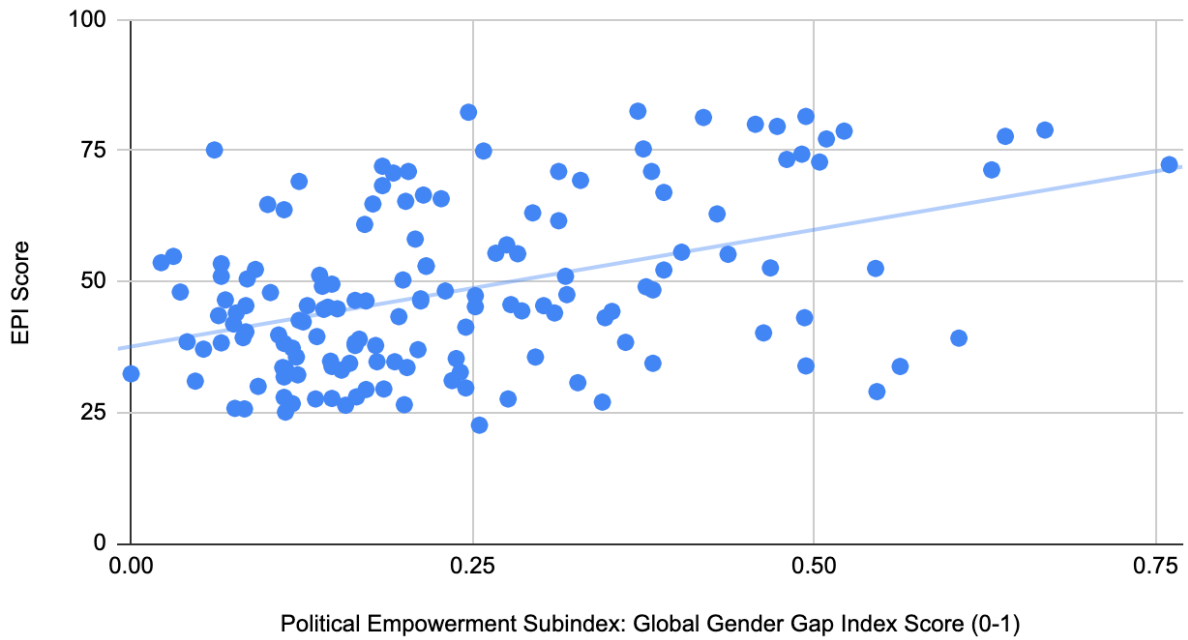


Subindex #1 Political Empowerment:

The Political Empowerment category is the subindex wherein gaps in gender remain the widest, and it is guided by the following three indicators: percentage of women in parliament,

percentage of women in ministerial positions, and years with female head of state (in the last fifty years), i.e. share of tenure years. The scatterplot below shows a positive correlation between political empowerment of women and the EPI, displaying the great variation in scores, ranging from 0% to 76% with a stronger concentration towards the lower half of the distribution. On a global scale, only 22.3% of the political empowerment gap has been closed so far. Even though Iceland leads the world in this sub-index, it still has yet to close 24% of this gap, even at an exceptional 56.5 percentage points higher than the median global performance, thus emphasizing the need for action to achieve gender parity in politics in the majority of nations (World Economic Forum, 2021). On the chart below, New Zealand ranks fourth from the right, exemplifying a country wherein “women have been in leadership roles for several years or have increased their presence at the highest institutional levels in the past few years” at fourteen years. As a result, both Iceland and New Zealand lead efforts in closing the gender gap, with the former ranking first at 89.2% of the gender gap closed, and the latter ranking fourth at 84.0% of the gender gap closed (World Economic Forum, 2021).

2021 Political Empowerment Subindex and EPI Score



Subindex #2 Health and Survival:

The Health and Survival Subindex is measured through two indicators: the percentage of sex ratio, acknowledging the phenomenon of femicide (i.e. “missing women”) in countries with preferences for sons over daughters; and the gap between women’s and men’s healthy life expectancy at birth in years, affected by years lost to malnutrition, disease, and violence. The countries’ results from this subindex are extremely compact, ranging with a concentrated set of values between just 93% and 98% as dozens of countries have the same score, between 0.930 and 0.980. As previously displayed in Figure 1.3, this subindex is the area wherein gender gaps are the smallest on average, with 96% of the gender gap closed, and countries’ performances are

very close to one another, so there is not enough significant range in data for this subindex to exemplify a correlation of any kind.

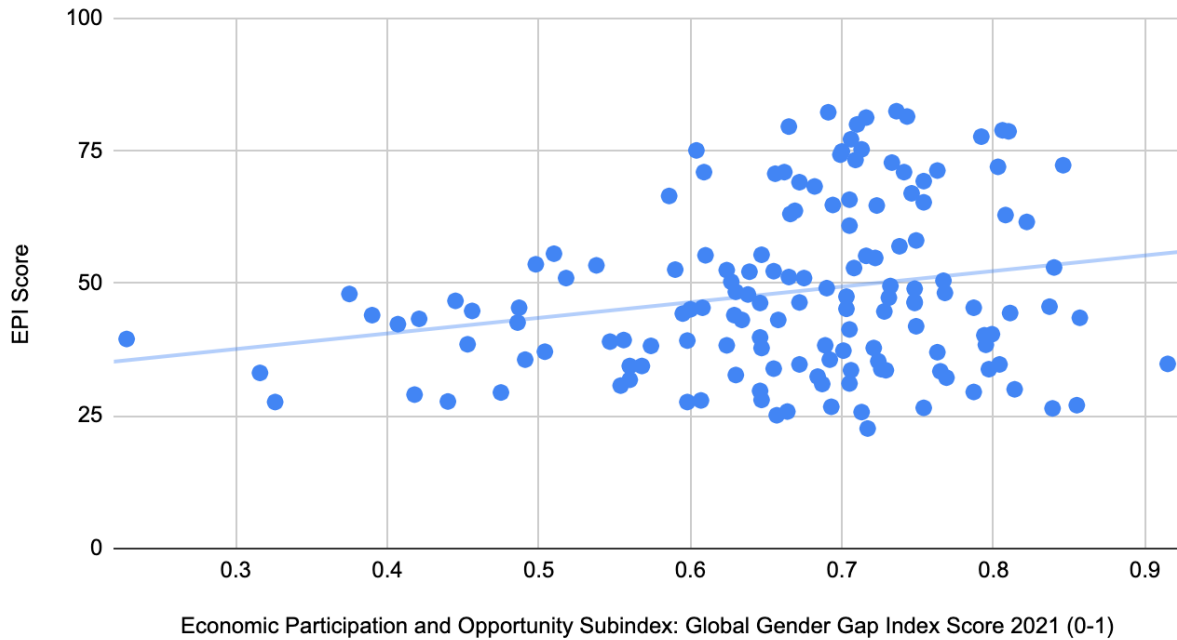
Subindex #3 Educational Attainment:

This sub-index captures the gap between women's and men's access to education through the ratios of women to men in primary-, secondary- and tertiary-level education in addition to the ratio of the female to male literacy rate. This subindex presents scores that are relatively concentrated, with country performances ranging between 51% and 100%, however 121 countries out of 156 have received a score of 0.95 or above, indicating that 95% of the gender gap is closed in this subindex. Just like the Health and Survival sub-index, Figure 1.3 shows an intense concentration of countries scoring above 95%, so no correlation can be established here due to a lack in range of data.

Subindex #4 Economic Participation and Opportunity:

This sub-index is measured using the following three concepts: the participation gap (the difference between women and men in labor force participation rates); the remuneration gap (the ratio of estimated female-to-male earned income, and wage equality); and the advancement gap (the ratio of women to men among legislators, managers, and senior officials, as well as professional and technical workers). The scatterplot below shows the positive correlation between Economic Opportunity and Participation and the EPI, with fairly dispersed scores ranging from 18% to 92%. Iceland ranks fourth and New Zealand, twenty-seventh out of one hundred fifty six. This correlation shows that the economic participation, remuneration, and advancement of women in society may contribute to a better environmental performance ranking.

2021 Economic Participation and Opportunity Subindex and EPI Score



Qualitative Research:

Upon examining this potential correlation between global gender equality and environmental action, it is necessary to explore qualitative documents to understand how causation might be implicated within both contexts. This section will primarily expand on the “Political Empowerment” subindex explored above to further refine the quantitative data that might suggest women in key leadership positions prioritize climate action, since the remaining three subindexes may be more elite-focused or closely tied to class, and offer smaller ranges in quantitative data. As will be discussed, political empowerment appears to be the most efficient mechanism in granting women a voice in the climate change debate, as more inclusive intersectional policies may be realized through their mobilization. The case studies of Iceland and New Zealand present examples of ways to address climate change through a feminist and

intersectional lens as women and indigenous people are drivers of environmental performance and ambition in these countries.

In addition to multiple parliamentary and governmental laws ensuring gender equality in Iceland, it is worth noting that there are various women's social movements and efforts that have undeniably made national history. Various women's movements founded Reykjavik's women's college in 1874, widely seen as a significant step forward (Hofverberg, 2022). In 1894, the first women's NGO to partake in political affairs was founded, the Icelandic Women's Rights Association, which has and still does conduct lobbying of parliament and distribution of petitions ("Gender Equality in Iceland," Chapman). This kind of collective activism is responsible for the pivotal gender-responsive policies which helped found Reykjavik's stable middle class in the twentieth century, as women's suffrage in Iceland began in 1915, with women gaining the right to hold local office beginning in 1908 (Hofverberg, 2022). Similar to many other parts of the world in the 1960s and 1970s, grassroots activism became a central means by which to amplify social and civil justice movements, especially when the United Nations declared 1975 as the International Women's Year (Þorvaldsdóttir, 419). A significant moment in Icelandic women's history was in October of 1975 wherein nearly 90% of women in the country took the day off of work (both paid and unpaid) to recognize the importance of women's contributions to the economy (Marinósdóttir and Erlingsdóttir, 2017). That same year, various laws were passed to increase maternal leave and approve of policies relating to abortion and women's reproductive health, perhaps as a result of the moment of recognition from the women's strike, "Women's Day Off" (Þorvaldsdóttir, 419). It is believed that such an event may have helped pave the way for Iceland to elect its first female president five years later, as well as the establishment of the Women's Alliance to make its presence as a party at parliamentary elections in 1983, with

women now accounting for 48% of Iceland's parliament (Hofverberg, 2022). In today's everyday society, according to a member from the Icelandic Women's Rights Association mentioned above, it would generally be thought of as strange or deviant for an Icelandic politician to not be feminist; in other words, gender equality is expected as a societal norm in the country's domestic institutions (Einarsdóttir, 2022). On another note, although it is a founding member of NATO starting in 1949, Iceland is the only country in the organization without a military, perhaps pointing to the pacifism of the nation as a result of a wide range of policies for equality and human rights (Institute for Economics & Peace, 2020).

Upon conducting qualitative research, I find that the intersecting topic of women and climate action in Iceland is not always explicitly addressed in domestic policies due to the fact that women are naturally considered and accepted as half of the country's voice with regards to most issues, such as climate change, and is seen in government representation with nearly half the parliament consisting of female members. In addition, according to a study on the overview of the UN's SDGs in the curriculum of various courses at the University of Iceland, only a mere 6% of courses at five schools at the university addressed SDG 5, gender equality. Although certain schools incorporated SDG 5 more than others, such as the School of Social Sciences at nearly 17% of its courses, more research is needed to understand the reason for an apparent lack of gender-responsive curriculum, perhaps due to the fact it may be already implied and expected as a societal norm as briefly mentioned earlier (Pálsdóttir, Auður, and Lára Jóhannsdóttir).

Reasonably, political empowerment emerges as a key area in which women gain a voice and utilize their platforms to enact change and represent all women in society. With respect and support from feminist organizations and networks, women are emerging as political leaders who effectively shape policy and discourse, particularly pertaining to the environment. As a result,

this research underscores the intersection of women in power who have mobilized to focus on sustainability, as well as the progress made in regards to climate action when female leaders are trusted and treated fairly. For instance, the fact that Prime Minister Katrín Jakobsdóttir is a member of Iceland's Left-Green Movement, exemplifies the power given to a woman supporting feminist and environmentalist causes (Nugent, 2019). Iceland's Left-Green Movement is known as an environmentalist, feminist and eco-socialist political party, and Jakobsdóttir has been their chairperson since 2013 (Nugent, 2019). She operates in a country where women are valued in many different facets of society, especially in politics, and as a result, they have proven to use their voices to pass environmental laws.

The First Lady of Iceland is Canadian-born Eliza Reid, and serves a supplemental example of an influential woman with political clout, having recently published her book, *Secrets of the Sprakkar* in February of 2022, highlighting the country's cultural principles of fairness, interviewing some of the nation's role models, and addressing areas where improvement is still needed. Reid arguably challenges the traditional roles and expectations as first lady even in a nation as fair as Iceland, by requesting speaking engagements and broadly defying the media's tendency to treat the spouses and/or wives of politicians as sidekicks, stating, "If there is anywhere from which to challenge these outdated gender-based assumptions, Iceland is it" (Reid, 2022). According to a press release at the National Archives of Iceland received in 1996 from the Office of the President of Iceland, the presidential role is known to be a non-political office, intended to "personify the unit of the nation and the President's functions are mainly of symbolic and ceremonial value" (Press Release on the Presidential Campaign and Election of Vigdís Finnbogadóttir). As Reid mentions, the president is the head of the state while the prime minister is the head of the government and is in charge of daily political and parliamentary

decision-making, so she and her husband President Gudni Johannesson lack a traditional political platform or the ability to address Icelandic political, economic, and legal strategies. Nevertheless, throughout Reid's time as First Lady since 2016, she has continually prioritized both climate action and gender equality as central topics of discussion in the media, speaking openly about the paradox of holding her highly visible, yet largely undefined and nonspecific role as First Lady, taking note of gendered stereotypical treatment from the international community.

As briefly mentioned earlier, a necessary component to enacting gender-responsive climate action is through intersectionality, and New Zealand provides examples of this through public appreciation for indigenous knowledge, especially towards environmentalism and sustainability. In 2014, the Intergovernmental Panel on Climate Change (IPCC) stated that indigenous knowledge systems are “a major resource for adapting to climate change, but these have not been used consistently in existing adaptation efforts.” Indigenous knowledge systems often include techniques and skills such as hunting and gathering, planting and harvesting, and specialized understandings of local ecosystems and are used to transmit and preserve that knowledge undeniably tied to the land (Anderson, 2021). In order to better understand New Zealand's holistic approach towards climate change, we must examine the contributions of indigenous people to the field itself.

To contextualize the conditions in which many indigenous groups thrive today, it is paramount to acknowledge the historical marginalization endured by indigenous groups, especially in colonized societies. In the nineteenth century, New Zealand was colonized by European settlers who very quickly established an intolerance for Māori people with the intention to “westernize” their culture. With regards to many cases of colonization including that of the Māori people, European settlers had an immense environmental impact in clearing land for

farming, logging, draining wetlands, and introducing invasive plant species (New Zealand Ministry for Culture and Heritage Te Manatu Taonga). These impacts, along with the displacement of indigenous peoples, led to soil erosion and changes in climate, water tables, and local ecosystems. Beginning in the 1840s, Māori people were coerced to sell their ancestral land or have it confiscated following the Crown purchase and the Native Land Court, contributing to steep population decline, poverty, and disease (New Zealand Ministry for Culture and Heritage Te Manatu Taonga). Up until the 1960s, indigenous groups felt the deep-seeded racism, from segregation and discriminatory laws against equal education, health care, and pensions, among others. Owing to Māori social movements and activism for land rights, language, and culture, the Waitangi Tribunal was established in 1975 to investigate alleged breaches to the Treaty of Waitangi, ultimately resulting in settlements undertaken by the Crown in the 1980s (New Zealand Ministry for Culture and Heritage Te Manatu Taonga, 2021). Decades later, there appears to be a newfound sensitivity towards Māori people following this institutional change, reparations, and shifts in cultural attitudes towards acceptance of the group as reflected by mainstream society and more inclusive political processes. Today, over 85% of Māori people now live in urban areas, and research is being conducted on how they adapt their environment to fit cultural needs, thus exemplifying their resilience as a colonized people in adjusting urban spaces to continue supporting indigenous socio-cultural needs. In their 2013 study measuring preconditions for a successful multicultural society, while Sibley and Ward indicate the aforementioned acceptance of marginalized racial and ethnic groups like the Māori, they also found that New Zealanders resisted a “resource-specific multicultural ideology that involves race-based interventions to reduce social inequality,” also broadly known as affirmative action (Sibley and Ward, 2013). Despite this socio-political tension and need to explore solutions to

these obstacles, their study noted that overall, race-based rejection in New Zealand was uncommon, there was overall warmth within intergroup feelings, moderately low perceived threats, and that all surveyed groups expressed high levels of patriotism, thus portraying advancement towards a more progressive and accepted multicultural society (Sibley and Ward, 2013).

Māori groups today are finding ways to restore and sustain the holistic relationship and ties they have historically had with the land and sea, as especially spiritual people who value nature for its intrinsic worth. With regards to climate change mitigation, indigenous knowledge systems are especially useful in that they may provide methods for managing the changing land and natural resources, as they historically have, in addition to offering the potential to boost biodiversity and reduce deforestation, the risk of wildfires, and greenhouse gas emissions (Anderson, 2021). Although Māori values and practices toward nature are not necessarily mainstream or dominant in New Zealand, they do serve as a visible countermodel to the global capitalist, utilitarian, extractive, short-term use of nature, as do many indigenous and tribal groups in all parts of the world. For instance, a practical noteworthy example of this from a few years ago is the indigenous stand-off at Standing Rock in opposition of the Dakota Access Pipeline in the United States, wherein indigenous women in particular showed up as frontline water protectors. As a 2018 photo essay proposes, this is a historic instance wherein we must “situate them [indigenous women] as warriors of wellness in the face of violence” (Lane, 2018). The bravery and solidarity demonstrated in this space of refusal in the efforts to protect their native ancestral lands perhaps represents the significance of the right to visibility, expressed through reclaiming collective unity, especially as an intersectional group (Lane, 2018). This historic moment exemplifies just how indigenous perspectives, sometimes overlooked, can

achieve high symbolic salience in environmental struggles that effectively gain both national and international attention.

Taking into account these historical factors, we can now holistically highlight indigenous groups' direct input and pivotal contributions to social issues and climate action policies today. The following 2021 report serves as a concrete example of this indigenous group's direct input into environmental policy formation. As previously mentioned, a multidisciplinary Māori research team used an indigenous risk assessment approach to compile a comprehensive report advising climate change decision-making through a uniquely Māori perspective, as well as identifying climate-related adverse health impacts which disproportionately affect marginalized groups who may already suffer from health inequities (Awatere et al., 2021). The figure below from the report expresses the interactive relationship between socioeconomic processes and climate change risks affecting Māori people. As depicted, researchers assessed the risks that Māori people and businesses face by applying the three environmental risk impact elements of climate vulnerability, exposure, and hazard. This kind of graphic is useful to better understand how certain policies may benefit specific groups over others, as Māori groups sometimes face different climate risks and are affected differently by changes to land-use than non-indigenous groups, and therefore require inclusive and intersectional climate adaptation and mitigation strategies (Awatere et al., 2021).

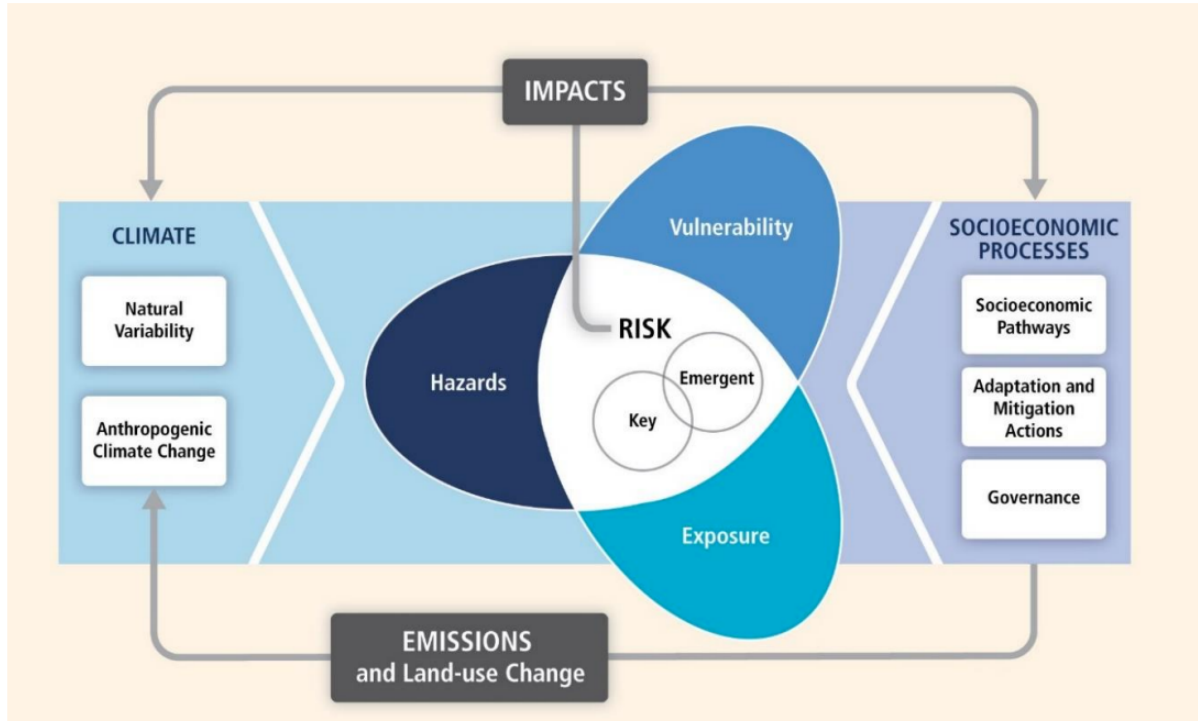


Figure 4. Schematic of the interaction between the physical climate system, exposure, and vulnerability producing risk (Oppenheimer et al., 2014, p. 1046).

Due to the fact that the report is still fairly recent, more time and research will be needed to assess whether the Crown and New Zealand's parliament are taking action to implement the Māori policies enshrined in this document which implicates at least 17% of the population (Māori), yet are solutions which have potential to benefit the entirety of the country's population. While the release of this report may be considered outside of formal Western political channels, it contributes a worthy impact because it can be understood within the framework of global conferences, as it follows the recent release of the Intergovernmental Panel on Climate Change report indicating that global temperatures are expected to reach or exceed 1.5 degrees Celsius of warming within the next twenty years (Awatere et al., 2021). Perhaps the latter is a reflection of the fact that in order for such a marginalized group to be heard by the government, this Māori report, among others, has adopted the scientific language typical of and understood by the rest of

the Western world in order for it to gain international traction/recognition, and this should be considered a transformational adoption for the group. As is stated in the report, new climate action adaptation policies present opportunities to improve health and reduce inequities especially felt by indigenous people, however there is also potential for certain policies to, unintentionally or intentionally, develop new obstacles and barriers to human health impacted by the environment, thus reinforcing existing inequities to persist (Awatere et al., 2021).

According to senior lecturer Dr. Lyn Carter from the University of Otago, New Zealand, by locating Māori ecological knowledge within traditional environmental knowledge frameworks, we can recognize that indigenous knowledge contributes to our understanding of the world and the ways in which we adapt to climate change, therefore suggesting we must look to Māori tribal groups as important actors in developing adaptation strategies, policies, and practices (Carter, 2018). She further states that climate change poses a significant challenge to indigenous and impoverished communities, and especially for people whose means for living are intricately linked to the natural environment and that particularly, “Pacific people who are part of the environmental ecosystem through beliefs, values, and knowledge and practices will experience substantial challenges to life ways” (Carter, 2018). With this in mind, we can understand that societies which already provide historically marginalized groups with the necessary equal rights, resources, and social mobility are better situated to tackle various issues such as climate change, and are able to do so while incorporating diverse contributions (Carter, 2018). In this case, New Zealand’s recognition of Māori people in various sectors of society facilitates this group in creating intersectional climate action solutions when they are most needed, granting society as a whole the ability to better adapt to the climate crisis, all while

integrating solutions relevant and pertinent to indigenous communities, as will be explored in the following pages.

One particular government policy in New Zealand was created under the Ministry of Business, Innovation and Employment, entitled Vision Mātauranga, a policy intended to amplify Māori people, resources, and knowledge in science and innovation in the efforts to boost the nation's environmental, cultural, social, and economic advancements. Some of the purposes of this policy are to acknowledge Māori as key partners in science and innovation and as “intergenerational guardians of significant natural resources and indigenous knowledge, and owners and managers of commercial assets,” in addition to investing in Māori individuals, businesses, and trusts (*Ministry of Business, Innovation and Employment*). Furthermore, the policy aims to maximize the quality of the relationship between Māori and the Crown through the Treaty of Waitangi. As is mentioned, Māori communities benefit when scientists establish strong relationships with local indigenous communities to help center the experiences and needs of under-amplified groups. To supplement these relationships, Māori businesses have also proven to form partnerships through the lens of the Treaty of Waitangi, as seen through the Building Resilient Communities Fund under the Ministry of Māori Development (*Te Puni Kōkiri: Ministry of Māori Development, 2022*). The Southern Māori Business Network serves as a prime example of initiating this sense of community to ensure the sustainability of Māori economic growth and entrepreneurship (“KUMA: Our Founding Story”). Another example of societal value for indigenous practices and beliefs with regards to climate science is Project Mātauranga, a television series celebrating and investigating Māori world views and methodologies within the scientific community. This initiative airs episodes on science topics pertaining to Māori

intergenerational knowledge such as forest ecosystems, insects, astronomy, and the decline of endangered species such as New Zealand's endemic kiwi birds (Sciencelearn.org).

Despite certain progressive governmental policies, it is also important to recognize indigenous activism and social movements which reflect the continuous collective fight for social and environmental justice. For instance, in 2021, indigenous activist Luhama Taulupe noted that Pacific people have been raising awareness about the climate crisis for decades as many of their communities have been threatened by sea level rise, however young Swedish environmental activist Greta Thunberg gained seemingly instant international traction for her activism (Cardwell, 2021). Taulupe equates this to subconscious racial bias on behalf of the West or the Global North, mentioning that without indigenous people leading climate efforts and conversation, the same inequalities would persist, stating “You can't stand for climate justice and not stand for social justice and indigenous justice – because if you're just one and not the other, you're perpetuating the same system you're trying to change” (Cardwell, 2021). This statement reflects the essence of intersectionality within the environmental justice movement and how centering indigenous voices and collective initiatives, just like women's initiatives, benefits society as a whole by being inclusive of all groups. Although New Zealand's indigenous groups appear to present collective responses to climate change, more research is needed to analyze the role of Māori women in positions of power, since this example of intersectional identity has unique and valuable contributions to social issues. As was briefly mentioned earlier, the country's Minister of Foreign Affairs, Hon. Nanaia Mahuta is New Zealand's first woman to hold the position, and the first woman to wear the traditional Māori chin tattoo, moko kauae, while serving as a lawmaker and using her voice in climate action. Mahuta will be the co-chair of one of three Ministerial Roundtables at the Indo-Pacific Forum, wherein she will participate in

UN engagements to address global issues, focusing on the climate crisis, ecosystem biodiversity, and oceans, thus serving as a strong example of an individual making strides for both women and indigenous people (Government of New Zealand). Her unique lived experiences help influence climate action through the way in which she uses her voice to shape socio-cultural understandings of the environment in one of the highest positions of government (Inter-Parliamentary Union, 2021).

Whereas indigenous efforts to combat social issues and climate change in New Zealand may appear to be overall more collective in nature, this contrasts with certain high profile individual women in Iceland who have contributed to climate action efforts in recent decades. For instance, Sigríður Tómasdóttir is widely recognized as Iceland's first environmentalist and is credited with the monumental action of saving the world-renowned Gullfoss Waterfalls through her fighting in legal battles to save the falls from being destroyed by creating a dam to harness electricity (Reid, 2022). While the falls and the land were sold to the government at one point, the area was ultimately protected from development a few decades after Tómasdóttir's death, and she is remembered in a memorial at the top of the waterfall. While this is an individual woman from the nineteenth century who gained recognition for her environmental work, Tómasdóttir faced stigma and criticism in a male-dominated world, being called too sentimental or worried about the inconsequential future of a waterfall (Reid, 2022). Over time, the country's appreciation and admiration for such a woman has grown and perhaps reflects the country's progress in cultural support for trailblazing individual women making meaningful change particularly towards environmental conservation.

The following quote from a press release document from the Office of the President of Iceland to which I gained access through the National Archives of Iceland further provides

context on the kinds of discussions held regarding the first female president's position of power: "President Vigdis is not a 'feminist' in the narrow sense in which the word is sometimes used nowadays; her victory did not depend on the 'women's vote,' but on a widespread appreciation of her achievements as a person and her passionate advocacy of Iceland's unique cultural identity" (Press Release on the Presidential Campaign and Election of Vigdís Finnbogadóttir). This reflects of an overall sense of likability of Finnbogadóttir as an individual, and perhaps the fact that she was first publicly nominated as a potential candidate through a letter to the editor of Dagbladið newspaper by a Reykjavik housewife in 1980 is indicative of just how a small island nation is capable of democratically electing a woman and by listening to the concerns of the general public. By the same token, when asked about her constituent support in an interview, Finnbogadóttir once said, "Men have been in the majority. Members of many women's organizations have been unwilling to unite in support of a woman candidate because they feel, and rightly so to my mind, that is in itself unimportant whether the president of Iceland is a man or a woman" (Press Release on the Presidential Campaign and Election of Vigdís Finnbogadóttir). While this quote held true for Finnbogadóttir's elections and constituent support, according to the Icelandic Women's Rights Association, I was informed that their NGO and many other women's organizations in Iceland depend on collaborative work and accountability amongst one another to uphold gender equal policies in Iceland's Parliament and society (Einarsdóttir, 2022). For instance, these women's rights organizations ensure that every time a new bill is passed, parliament submits an evaluation detailing its gendered impacts as enshrined through the Gender Equality Act, just as Prime Minister Katrín Jakobsdóttir must submit to parliament a motion for a governmental resolution on a gender equality action plans (*Government of Iceland*). This may indicate that there is a strong feminist network of

collaboration to behind Iceland's powerful individual women ensuring gender equality is implemented.

It is important to note that in many cases in the 1980s, climate action was hardly a topic of central conversation in government affairs yet, as an international Conference on Environment and Economics was first held in 1984 by the OECD (Press Release on the OECD Meeting of the Council at Ministerial Level). For instance, a press release from the OECD in Paris in 1986 exemplifies a lack of discussion of climate change, even if the environment begins to be briefly mentioned in the context of agriculture, forests, and energy use, but only as they relate to the economy, trade, and welfare (Press Release on the OECD Meeting of the Council at Ministerial Level).

Through many speeches and addresses to various universities, ministries, and organizations abroad, Finnbogadóttir draws similarities between Iceland and the other country at hand in order to provide a sense of unity and collaboration, especially in the efforts of climate change. There are three especially salient instances in which Finnbogadóttir uses her position of power to express concern for the environment to fellow island or small nations, the first being her address to ministers and the former President of Italy, Francesco Cossiga, in 1991. In her speech, she welcomes the foreign officials to Iceland and spends a considerable portion of her speech drawing similarities between the two countries in that as they are surrounded by the sea, they have a duty to preserve and protect the environment, air, animals, and the seas (Finnbogadóttir, 1991). Similarly, she addresses the rector, assembly, professors, and the Group of Research in Evolution from the University of Bologna in 1989 to address the endangerment of the planet through anthropogenic activity, considering future generations and presenting a theme of the importance of aesthetic and intrinsic value of nature as well as restoring culture through

restoring nature (Finnbogadóttir, 1989). She importantly states that culture means to make things grow and flourish, the opposite of destruction, and that we must restore the historical meaning of culture to our attitudes towards the earth we live on, and towards the values which remain within us. As a result, through these speeches, she consistently explains that Iceland intends to reestablish a spiritual and moral relationship with the environment, not just a profit-oriented utilitarian one – which was and still is more common in politics – thus setting the example for other countries to do the same and to trust science in the hopes of preventing further environmental catastrophe. Yet another connection can be made to Finnbogadóttir’s address to Gakushuin University Tokyo in 1991 address, wherein she establishes a sense of cooperation between Japan and Iceland in their fields of geology, volcanology, geothermal studies. She further offers a symbol of partnership in the preservation of the environment between both nations in making connections between conserving both of their national cultures through attempts to preserve species of animals and plants from extinction, famously stating that “pollution is a global problem; it respects no borders” ... “we feel we can symbolize the need for all nations on the planet to join hands and take action” (Finnbogadóttir, 1991). The similarities she draws between the aforementioned island or sea-surrounded nations and expresses value for the natural resources and the need to conserve them ultimately offers a strong sense of unity to island nations which intend to protect the environment (Finnbogadóttir). She therefore reflects Iceland’s commitments to climate action as a result of a national and cultural value for the country’s natural resources and landmarks and a desire to protect their topography. For this reason, upon analyzing these documents, Vigdís Finnbogadóttir is an example of a woman who earned a position of power and used her platform to play a key role in prioritizing environmental

issues by offering a sense of unity and collaboration to small island nations around the world in addition to even leading by example for larger nations.

As Finnbogadóttir has pointed out, small countries and island nations have the potential for immense influence on how to seek out solutions to a variety of complex issues, and she serves as an example of a woman prioritizing climate awareness by helping shape wider socio-cultural understandings and shifting long-term moral obligations and attitudes toward the natural environment. Her address at the UN Conference on Environment and Development on the twelfth of June in 1992 in Rio de Janeiro, Brazil serves as further indication of her intention to use her platform to prioritize climate awareness across borders. For instance, at this conference she states that instead of simply relying on climate resolutions created at long-awaited environmental forums, mass action campaigns and grassroots involvement on a global scale is what will create genuine and long-lasting environmental improvement and awareness (Finnbogadóttir, 1992). These kinds of statements are reiterated at various conferences as she directs attention to the potential for more non-technocratic approaches by suggesting citizens and communities become stewards and advocates of their home countries' natural environment (Finnbogadóttir, 1992).

Feminist and indigenous social movements and activism are key methods of engagement for women and indigenous groups as they gain traction and have an influence on both popular culture and actual policy-making. One representation of women and girls in the climate refugee crisis has been portrayed through Little Amal, the 3.5 meter-tall puppet of a Syrian refugee girl who has traveled more than five thousand miles and made an appearance at the UN's COP 26 "Gender Day" panels ("Gender & Women at COP 26," 2021). This giant puppet serves as a representation of creatives speaking up on world issues and as a result was able to focus attention

on an issue like refugees - including female climate refugees - at even the world's largest global conferences. Indigenous and climate activists like Samoan Brianna Fruean and Angelica Ponce, as well as politicians like Nancy Pelosi among other global leaders and campaigners spoke beside Little Amal at "Gender Day" to reiterate that the climate crisis cannot be resolved unless women are empowered and given a voice ("Gender & Women at COP 26," 2021). This kind of creative activist project is an example of indirect means in which women are drawing attention to climate change since there may not be a measurable impact of the kind of activism behind projects like Little Amal, yet the input provided as a result of these women being invited to participate in these global conferences is a paramount way to engage the public on social issues. Moreover, the ways in which the public react to activist efforts and social movements may often depend on the country's prior organization and in this case, whether women and racial minorities have equitable participation, as is often seen in Iceland and New Zealand. Nevertheless, social movements and activism are essential pieces to mobilization necessary in all countries, and as has been explored, national agreements tend to be more robust and comprehensive as a result of multicultural- and gender equality, since these voices are being heard and allowed to contribute to the strengthening of national policy and global efforts to combat climate change; as a result, everyone benefits from these voices being heard and valued.

Conclusion:

In both Iceland and New Zealand, women and indigenous peoples have made significant gains in status, legal rights and recognition, and maintaining a voice in policy making. Both groups offer unique lived perspectives and experiences of climate change, likely influencing climate action through both indirect and direct means. The former is understood through actions of helping shape wider socio-cultural understandings of climate change, values, and attitudes

toward the natural environment, while the latter is exemplified through direct participation in environmental policy formation and political action. By analyzing historic moments of feminist and indigenous mobilization, it is clear that equal participation of these groups is intrinsically good and has positive benefits on the policy outcomes of climate action. This paper has analyzed women's and indigenous peoples' indirect and direct engagement and contribution to the timely issue of climate change through case studies of Iceland and New Zealand.

The climate action work and contributions of women and indigenous people underscore the actual diversity of climate change risks, and the capacities for adaptation and mitigation strategies across marginalized groups. As expressed in the Māori climate change report, it is anticipated that the changing conditions of our climate, natural environment, and ecosystems will exacerbate many of the already existing pressures and inequities that indigenous people like the Māori face (Awatere et al., 2021). As a result, there is an urgent need to understand climate change risks from Māori and indigenous perspectives as well as actually integrate their policy suggestions into law in the efforts to hold the public and government accountable for maintaining a sustainable environment. It is also imperative that society, governments, and international systems, institutions, and agreements set in place through the United Nations make the necessary adjustments to amplify women's and indigenous people's climate action efforts around the world, as they reflect pivotal arguments through a seemingly endless variety of indirect and direct means – anywhere from grassroots organizations, social movements, and activism, to leveraging political power to pass sustainable policies in government, to high profile insider individuals raising awareness on the topic.

There is no one-size-fits-all solution to the climate crisis, as is the case with many pressing global issues (Sachs, 2015). Therefore, it is important to turn to the moments in which

women and indigenous groups around the world have spearheaded an intersectional feminist agenda to successfully advocate for climate justice for all. Through a foundation of data indicating a potential correlational relationship between women's equality and climate action among other factors, this research highlights positive case studies from which we can learn best practices on how to recognize women's and indigenous groups' contributions to the formation of environmentalism and climate policy. By acknowledging that these two groups shape cultural understandings of climate change in both non-technocratic and institutionalized channels, through both direct and indirect means, we may continue to promote their efforts all throughout other countries to support them whilst also making cardinal advancements to the mitigative and adaptive strategies to the climate crisis. I appreciate readers' attention to this research, as the better representation, inclusion, and participation of marginalized groups can and will catalyze intersectional climate action towards a more just society equipped to handle what the future holds.

TABLE 1.2 | The Global Gender Gap Index 2021, results by subindex

Health and Survival

Rank	Country	Score (0-1)
1	Bahamas	0.980
1	Botswana	0.980
1	Brazil	0.980
1	Cape Verde	0.980
1	Dominican Republic	0.980
1	El Salvador	0.980
1	Eswatini	0.980
1	Guyana*	0.980
1	Hungary	0.980
1	Kyrgyz Republic	0.980
1	Lesotho	0.980
1	Lithuania	0.980
1	Malawi	0.980
1	Mauritius	0.980
1	Moldova	0.980
1	Mongolia	0.980
1	Mozambique	0.980
1	Myanmar	0.980
1	Namibia	0.980
1	Poland	0.980
1	Romania	0.980
1	Russian Federation	0.980
1	Slovak Republic	0.980
1	Slovenia	0.980
1	Trinidad and Tobago	0.980
1	Uganda	0.980
1	Uruguay	0.980
1	Venezuela	0.980
1	Zambia	0.980
1	Zimbabwe	0.980
30	Sri Lanka	0.980
31	Belize	0.980
32	Guatemala	0.979
33	Burundi	0.979
34	Bulgaria	0.979
34	Philippines	0.979
36	Côte d'Ivoire	0.979
37	South Africa	0.979
38	Togo	0.979
39	Nicaragua	0.978
40	Ghana	0.978
41	Thailand	0.978
41	Ukraine	0.978
43	Burkina Faso	0.978
44	Czech Republic	0.978
45	Croatia	0.978
46	Cambodia	0.978
47	Bolivia	0.977
48	Argentina	0.977
49	Slovenia	0.977
50	Georgia	0.977
51	Congo, Democratic Rep.	0.976
52	Latvia	0.976
53	Angola	0.976
54	Korea, Rep.	0.976
55	Kazakhstan	0.975
56	Colombia	0.975
57	Lao PDR	0.975
58	Mexico	0.975
59	Estonia	0.975
60	Kenya	0.975
61	Vanuatu	0.975
62	Paraguay	0.974
63	Rwanda	0.974
64	Bosnia and Herzegovina	0.974
65	Japan	0.973
66	Costa Rica	0.973
67	Cameroon	0.973
68	Cuba	0.973
69	Panama	0.973
70	Benin	0.973
71	Timor-Leste	0.972
72	Fiji	0.972
73	Portugal	0.972
74	Malaysia	0.972
75	Germany	0.972
76	Indonesia	0.971
77	Ethiopia	0.971
78	Chile	0.970

Political Empowerment

Rank	Country	Score (0-1)
1	Iceland	0.760
2	Finland	0.669
3	Norway	0.640
4	New Zealand	0.630
5	Nicaragua	0.606
6	Rwanda	0.563
7	Bangladesh	0.546
8	Costa Rica	0.545
9	Sweden	0.522
10	Germany	0.509
11	Ireland	0.504
12	Switzerland	0.494
13	Mozambique	0.494
14	South Africa	0.493
15	Spain	0.491
16	Belgium	0.480
17	Austria	0.473
18	Mexico	0.468
19	Namibia	0.463
20	France	0.457
21	Serbia	0.437
22	Lithuania	0.429
23	United Kingdom	0.419
24	United Arab Emirates	0.403
25	Argentina	0.390
26	Portugal	0.390
27	Cuba	0.382
28	Ethiopia	0.382
29	Canada	0.381
30	Albania	0.377
31	Netherlands	0.375
32	Denmark	0.371
33	Philippines	0.362
34	Bolivia	0.352
35	El Salvador	0.347
36	Burundi	0.345
37	United States	0.329
38	Senegal	0.327
39	Trinidad and Tobago	0.319
40	Ecuador	0.318
41	Italy	0.313
42	Latvia	0.313
43	Peru	0.310
44	Guyana*	0.310
45	Bosnia and Herzegovina	0.302
46	Uganda	0.298
47	Croatia	0.294
48	Moldova	0.286
49	Chile	0.283
50	Barbados	0.278
51	India	0.276
52	Bulgaria	0.275
53	North Macedonia	0.267
54	Australia	0.258
55	Liberia	0.255
56	Suriname	0.252
57	Panama	0.252
58	Luxembourg	0.247
59	Angola	0.245
60	Georgia	0.245
61	Nepal	0.241
62	Timor-Leste	0.238
63	Tanzania	0.235
64	Jamaica	0.230
65	Israel	0.227
66	Belarus	0.216
67	Colombia	0.216
68	Korea, Rep.	0.214
69	Tunisia	0.212
70	Montenegro	0.212
71	Zimbabwe	0.210
72	Singapore	0.208
73	Czech Republic	0.203
74	Cameroon	0.202
75	Estonia	0.201
76	Madagascar	0.200
77	Venezuela	0.199
78	Egypt	0.196
79	Kenya	0.193
80	Malta	0.192
81	Togo	0.185
82	Slovak Republic	0.184
83	Slovenia	0.184
84	Zambia	0.180
85	Honduras	0.179
86	Cyprus	0.177
87	Mali	0.172
88	Dominican Republic	0.172
89	Poland	0.171
90	Sri Lanka	0.167
91	Lesotho	0.165
92	Indonesia	0.164
93	Malawi	0.164
94	Paraguay	0.164
95	Fiji	0.160
96	Ghana	0.157
97	Niger*	0.155
98	Pakistan	0.154
99	Cape Verde	0.152
100	Algeria	0.151
101	Mauritania	0.147
102	Eswatini	0.147
103	Ukraine	0.147
104	Lao PDR	0.146
105	Mauritius	0.144
106	Kazakhstan	0.141
107	Uruguay	0.140
108	Brazil	0.138
109	Iraq	0.136
110	Ghana	0.135
111	Afghanistan*	0.132
112	Lebanon	0.129
113	Morocco	0.128
114	Turkey	0.123
115	Greece	0.123
116	Mongolia	0.122
117	Maldives	0.121
118	China	0.118
119	Chad	0.118
120	Myanmar	0.113
121	Viet Nam	0.113
122	Guatemala	0.112
123	Tajikistan	0.112
124	Hungary	0.112
125	Gambia, The	0.112
126	Cambodia	0.111
127	Kyrgyz Republic	0.108
128	Malaysia	0.102
129	Romania	0.100
130	Congo, Democratic Rep.	0.099
131	Benin	0.093
132	Armenia	0.091
133	Russian Federation	0.085
134	Thailand	0.084
135	Botswana	0.084
136	Sierra Leone	0.083
137	Bhutan	0.082
138	Saudi Arabia	0.077
139	Côte d'Ivoire	0.076
140	Belize	0.075
141	Azerbaijan	0.069
142	Syria	0.067
143	Bahrain	0.066
144	Jordan	0.066
145	Burkina Faso	0.066
146	Bahamas	0.064
147	Japan	0.061
148	Qatar	0.053
149	Nigeria	0.047
150	Oman	0.041
151	Iran, Islamic Rep.	0.036
152	Brunei Darussalam	0.031
153	Kuwait	0.022
154	Yemen	0.001
155	Papua New Guinea	0
155	Vanuatu	0

■ Eastern Europe and Central Asia
 ■ Middle East and North Africa
 ■ East Asia and the Pacific
 ■ Latin America and the Caribbean
 ■ North America
 ■ South Asia
 ■ Sub-Saharan Africa
 ■ Western Europe

* New countries in 2021

TABLE 1.2 | The Global Gender Gap Index 2021, results by subindex

Economic Participation and Opportunity

Educational Attainment

Rank	Country	Score (0-1)	Rank	Country	Score (0-1)	Rank	Country	Score (0-1)	Rank	Country	Score (0-1)
1	Laos PDR	0.915	79	Papua New Guinea	0.684	1	Argentina	1.000	79	Eswatini	0.992
2	Bahamas	0.857	80	Slovak Republic	0.682	1	Australia	1.000	80	Switzerland	0.992
3	Burundi	0.855	81	Ecuador	0.675	1	Austria	1.000	81	Belize	0.991
4	Iceland	0.846	82	Niger*	0.673	1	Bahamas	1.000	82	Bulgaria	0.991
5	Belarus	0.840	83	Greece	0.672	1	Belgium	1.000	83	Barbados	0.991
6	Guinea	0.839	84	Kenya	0.672	1	Botswana	1.000	84	Jordan	0.991
7	Barbados	0.837	85	Paraguay	0.672	1	Canada	1.000	85	Kyrgyz Republic	0.990
8	Latvia	0.822	86	Hungary	0.669	1	Colombia	1.000	86	Qatar	0.990
9	Benin	0.814	87	Croatia	0.666	1	Czech Republic	1.000	87	Singapore	0.990
10	Moldova	0.811	88	Austria	0.665	1	Denmark	1.000	88	Sri Lanka	0.988
11	Sweden	0.810	89	Brazil	0.665	1	Estonia	1.000	89	United Arab Emirates	0.987
12	Lithuania	0.808	90	Côte d'Ivoire	0.664	1	Finland	1.000	90	Bahrain	0.985
13	Finland	0.806	91	Czech Republic	0.662	1	France	1.000	91	Guyana*	0.984
14	Zambia	0.804	92	South Africa	0.658	1	Honduras	1.000	92	Japan	0.983
15	Slovenia	0.803	93	Myanmar	0.657	1	Israel	1.000	93	Madagascar	0.982
16	Botswana	0.799	94	Malta	0.656	1	Jamaica	1.000	94	Viet Nam	0.982
17	Eswatini	0.797	95	Mozambique	0.655	1	Latvia	1.000	95	Peru	0.981
18	Philippines	0.795	96	Armenia	0.655	1	Lesotho	1.000	96	Bolivia	0.981
19	Namibia	0.794	97	North Macedonia	0.647	1	Luxembourg	1.000	97	Saudi Arabia	0.980
20	Norway	0.792	98	Lesotho	0.647	1	Maldives	1.000	98	Oman	0.977
21	Togo	0.787	99	Indonesia	0.647	1	Malta	1.000	99	North Macedonia	0.977
22	Thailand	0.787	100	Kyrgyz Republic	0.646	1	Netherlands	1.000	100	Zimbabwe	0.977
23	Mongolia	0.769	101	Dominican Republic	0.646	1	New Zealand	1.000	101	Turkey	0.975
24	Jamaica	0.768	102	Angola	0.646	1	Nicaragua	1.000	102	Myanmar	0.975
25	Russian Federation	0.767	103	Argentina	0.639	1	Russian Federation	1.000	103	China	0.973
26	Viet Nam	0.765	104	Malaysia	0.638	1	Slovak Republic	1.000	104	Korea, Rep.	0.973
27	New Zealand	0.763	105	Guyana*	0.638	27	Ukraine	1.000	105	Egypt	0.973
28	Zimbabwe	0.763	106	El Salvador	0.634	28	Slovenia	1.000	106	Capa Verde	0.972
29	Capa Verde	0.761	107	Nepal	0.630	29	Uruguay	1.000	107	Indonesia	0.970
30	United States	0.754	108	Cuba	0.630	30	Georgia	1.000	108	Tunisia	0.970
31	Estonia	0.754	109	Peru	0.629	31	Chile	1.000	109	Guatemala	0.969
32	Madagascar	0.754	110	Costa Rica	0.624	32	Dominican Republic	1.000	110	Bosnia and Herzegovina	0.967
33	Singapore	0.749	111	Malawi	0.624	33	Norway	1.000	111	Algeria	0.966
34	Belize	0.749	112	Venezuela	0.617	34	Namibia	1.000	112	Laos PDR	0.965
35	Albania	0.748	113	Chile	0.610	35	Costa Rica	1.000	113	Lebanon	0.964
36	Azerbaijan	0.748	114	Italy	0.609	36	United States	1.000	114	India	0.962
37	Montenegro	0.748	115	Bosnia and Herzegovina	0.608	37	Brazil	1.000	115	Rwanda	0.957
38	Portugal	0.746	116	Gambia, The	0.607	38	Iceland	0.999	116	Morocco	0.956
39	Switzerland	0.743	117	Japan	0.604	39	Philippines	0.999	117	Bhutan	0.954
40	Canada	0.741	118	Mauritius	0.600	40	United Kingdom	0.999	118	Syria	0.953
41	Bulgaria	0.738	119	Ghana	0.598	41	Belarus	0.999	119	Iran, Islamic Rep.	0.953
42	Denmark	0.736	120	Nicaragua	0.598	42	Albania	0.999	120	Ghana	0.951
43	Ireland	0.733	121	Bolivia	0.595	43	Venezuela	0.998	121	Bangladesh	0.951
44	Ukraine	0.732	122	Mexico	0.590	44	Spain	0.998	122	Vanuatu	0.947
45	Panama	0.731	123	Korea, Rep.	0.586	45	Cuba	0.998	123	Timor-Leste	0.946
46	Cambodia	0.729	124	Vanuatu	0.576	46	Armenia	0.998	124	Tajikistan	0.942
47	Kazakhstan	0.728	125	Tajikistan	0.571	47	Paraguay	0.998	125	Zambia	0.938
48	Rwanda	0.726	126	Congo, Democratic Rep.	0.571	48	Ireland	0.998	126	Kenya	0.929
49	Timor-Leste	0.724	127	Fiji	0.568	49	Cyprus	0.998	127	Tanzania	0.921
50	Romania	0.723	128	Ethiopia	0.560	50	Montenegro	0.998	128	Cambodia	0.919
51	Brunei Darussalam	0.722	129	Guatemala	0.560	51	Lithuania	0.998	129	Malawi	0.915
52	Honduras	0.721	130	Bhutan	0.556	52	Serbia	0.998	130	Mozambique	0.904
53	Liberia	0.717	131	Senegal	0.554	53	Fiji	0.997	131	Uganda	0.898
54	Serbia	0.716	132	Sri Lanka	0.547	54	Romania	0.997	132	Burundi	0.896
55	United Kingdom	0.716	133	Jordan	0.538	55	Germany	0.997	133	Papua New Guinea	0.895
56	Sierra Leone	0.713	134	Bahrain	0.518	56	Mexico	0.997	134	Nepal	0.895
57	Netherlands	0.713	135	United Arab Emirates	0.510	57	Italy	0.997	135	Gambia, The	0.891
58	France	0.710	136	Qatar	0.504	58	Ecuador	0.997	136	Senegal	0.888
59	Belgium	0.709	137	Kuwait	0.498	59	Kuwait	0.997	137	Cameroun	0.885
60	Colombia	0.708	138	Maldives	0.491	60	Poland	0.996	138	Mauritania	0.879
61	Cameroun	0.706	139	Lebanon	0.487	61	Sweden	0.996	139	Burkina Faso	0.873
62	Germany	0.706	140	Turkey	0.486	62	Azerbaijan	0.996	140	Sierra Leone	0.860
63	Poland	0.705	141	Mali	0.475	63	Moldova	0.996	141	Ethiopia	0.850
64	Georgia	0.705	142	Algeria	0.456	64	Croatia	0.995	142	Liberia	0.839
65	Israel	0.705	143	Oman	0.453	65	Kazakhstan	0.995	143	Côte d'Ivoire	0.828
66	Tanzania	0.705	144	Tunisia	0.445	66	Panama	0.994	144	Pakistan	0.811
67	Suriname	0.703	145	Mauritania	0.440	67	Greece	0.994	145	Iraq	0.807
68	Trinidad and Tobago	0.703	146	Egypt	0.421	68	Trinidad and Tobago	0.994	146	Nigeria	0.806
69	China	0.701	147	Bangladesh	0.418	69	South Africa	0.994	147	Togo	0.782
70	Australia	0.700	148	Morocco	0.407	70	Malaysia	0.994	148	Angola	0.759
71	Spain	0.699	149	Saudi Arabia	0.390	71	Suriname	0.993	149	Mali	0.757
72	Cyprus	0.694	150	Iran, Islamic Rep.	0.375	72	Hungary	0.993	150	Benin	0.733
73	Chad	0.693	151	India	0.326	73	Mongolia	0.993	151	Niger*	0.726
74	Uganda	0.692	152	Pakistan	0.316	74	Thailand	0.992	152	Yemen	0.717
75	Luxembourg	0.691	153	Syria	0.285	75	Brunei Darussalam	0.992	153	Guinea	0.680
76	Uruguay	0.690	154	Yemen	0.282	76	Portugal	0.992	154	Congo, Democratic Rep.	0.658
77	Burkina Faso	0.689	155	Iraq	0.228	77	El Salvador	0.992	155	Chad	0.589
78	Nigeria	0.687	156	Afghanistan*	0.180	78	Mauritius	0.992	156	Afghanistan*	0.514

■ Eastern Europe and Central Asia
 ■ Middle East and North Africa
 ■ East Asia and the Pacific
 ■ Latin America and the Caribbean
 ■ North America
 ■ South Asia
 ■ Sub-Saharan Africa
 ■ Western Europe

* New countries in 2021

TABLE ES-1. 2020 EPI rank, score, and regional rank (REG) for 180 countries.

RANK	COUNTRY	SCORE	REG	RANK	COUNTRY	SCORE	REG	RANK	COUNTRY	SCORE	REG
1	Denmark	82.5	1	61	Uruguay	49.1	9	120	Samoa	37.3	12
2	Luxembourg	82.3	2	62	Albania	49.0	16	122	Qatar	37.1	15
3	Switzerland	81.5	3	63	Antigua and Barbuda	48.5	10	123	Zimbabwe	37.0	11
4	United Kingdom	81.3	4	64	Cuba	48.4	11	124	Central African Republic	36.9	12
5	France	80.0	5		St. Vincent and Grenadines	48.4	11	125	Dem. Rep. Congo	36.4	13
6	Austria	79.6	6	66	Jamaica	48.2	13	126	Guyana	35.9	30
7	Finland	78.9	7	67	Iran	48.0	6	127	Maldives	35.6	3
8	Sweden	78.7	8	68	Malaysia	47.9	6		Uganda	35.6	14
9	Norway	77.7	9	69	Trinidad and Tobago	47.5	14	129	Timor-Leste	35.3	14
10	Germany	77.2	10	70	Panama	47.3	15	130	Laos	34.8	15
11	Netherlands	75.3	11	71	Tunisia	46.7	7		Sudan	34.8	16
12	Japan	75.1	1	72	Azerbaijan	46.5	5	132	Kenya	34.7	15
13	Australia	74.9	12	73	Paraguay	46.4	16		Zambia	34.7	15
14	Spain	74.3	13	74	Dominican Republic	46.3	17	134	Ethiopia	34.4	17
15	Belgium	73.3	14		Montenegro	46.3	17		Fiji	34.4	16
16	Ireland	72.8	15	76	Gabon	45.8	2	136	Mozambique	33.9	18
17	Iceland	72.3	16	77	Barbados	45.6	18	137	Eswatini	33.8	19
18	Slovenia	72.0	1	78	Bosnia and Herzegovina	45.4	18		Rwanda	33.8	19
19	New Zealand	71.3	17		Lebanon	45.4	8	139	Cambodia	33.6	17
20	Canada	71.0	18		Thailand	45.4	7		Cameroon	33.6	21
	Czech Republic	71.0	2	81	Suriname	45.2	19	141	Viet Nam	33.4	18
	Italy	71.0	18	82	Mauritius	45.1	3	142	Pakistan	33.1	4
23	Malta	70.7	20		Tonga	45.1	8	143	Micronesia	33.0	19
24	United States of America	69.3	21	84	Algeria	44.8	9	144	Cabo Verde	32.8	22
25	Greece	69.1	3	85	Kazakhstan	44.7	6	145	Nepal	32.7	5
26	Slovakia	68.3	4	86	Dominica	44.6	20	146	Papua New Guinea	32.4	20
27	Portugal	67.0	22	87	Moldova	44.4	7	147	Mongolia	32.2	21
28	South Korea	66.5	2	88	Bolivia	44.3	21	148	Comoros	32.1	23
29	Israel	65.8	1		Uzbekistan	44.3	8	149	Guatemala	31.8	31
30	Estonia	65.3	5	90	Peru	44.0	22	150	Tanzania	31.1	24
31	Cyprus	64.8	6		Saudi Arabia	44.0	10	151	Nigeria	31.0	25
32	Romania	64.7	7	92	Turkmenistan	43.9	9	152	Marshall Islands	30.8	22
33	Hungary	63.7	8		Bahamas	43.5	23		Niger	30.8	26
34	Croatia	63.1	9	94	Egypt	43.3	11		Republic of Congo	30.8	26
35	Lithuania	62.9	10	95	El Salvador	43.1	24	155	Senegal	30.7	28
36	Latvia	61.6	11		Grenada	43.1	24	156	Eritrea	30.4	29
37	Poland	60.9	12		Saint Lucia	43.1	24	157	Benin	30.0	30
38	Seychelles	58.2	1		South Africa	43.1	4	158	Angola	29.7	31
39	Singapore	58.1	3	99	Turkey	42.6	19	159	Togo	29.5	32
40	Taiwan	57.2	4	100	Morocco	42.3	12	160	Mali	29.4	33
41	Bulgaria	57.0	13	101	Belize	41.9	27	161	Guinea-Bissau	29.1	34
42	United Arab Emirates	55.6	2	102	Georgia	41.3	10	162	Bangladesh	29.0	6
43	North Macedonia	55.4	14	103	Botswana	40.4	5	163	Vanuatu	28.9	23
44	Chile	55.3	1	104	Namibia	40.2	6	164	Djibouti	28.1	35
45	Serbia	55.2	15	105	Kyrgyzstan	39.8	11	165	Lesotho	28.0	36
46	Brunei Darussalam	54.8	5	106	Iraq	39.5	13	166	Gambia	27.9	37
47	Kuwait	53.6	3	107	Bhutan	39.3	1	167	Mauritania	27.7	38
48	Jordan	53.4	4	108	Nicaragua	39.2	28	168	Ghana	27.6	39
49	Belarus	53.0	1	109	Sri Lanka	39.0	2		India	27.6	7
50	Colombia	52.9	2	110	Oman	38.5	14	170	Burundi	27.0	40
51	Mexico	52.6	3	111	Philippines	38.4	9		Haiti	27.0	32
52	Costa Rica	52.5	4	112	Burkina Faso	38.3	7	172	Chad	26.7	41
53	Armenia	52.3	2		Malawi	38.3	7		Solomon Islands	26.7	24
54	Argentina	52.2	5	114	Tajikistan	38.2	12	174	Madagascar	26.5	42
55	Brazil	51.2	6	115	Equatorial Guinea	38.1	9	175	Guinea	26.4	43
56	Bahrain	51.0	5	116	Honduras	37.8	29	176	Côte d'Ivoire	25.8	44
	Ecuador	51.0	7		Indonesia	37.8	10	177	Sierra Leone	25.7	45
58	Russia	50.5	3	118	Kiribati	37.7	11	178	Afghanistan	25.5	8
59	Venezuela	50.3	8	119	São Tomé and Príncipe	37.6	10	179	Myanmar	25.1	25
60	Ukraine	49.5	4	120	China	37.3	12	180	Liberia	22.6	46





Rank	Country	Score***	Categories
1.*	–	–	
2.	–	–	
3.	–	–	
4.	– Sweden	75.77	
5.	▲ Denmark	71.14	
6.	▼ Morocco	70.63	
7.	▲ United Kingdom	69.80	
8.	▼ Lithuania	66.22	
9.	▲ India	66.02	
10.	▲ Finland	63.25	
11.	Chile	62.88	
12.	– Norway	61.14	
13.	▲ Luxembourg	60.91	
14.	▼ Malta	60.76	
15.	▼ Latvia	60.75	
16.	▼ Switzerland	60.61	
17.**	▲ Ukraine	60.60	
18.	▲ France	57.90	
19.	▲ Egypt	57.53	
20.	▼ Croatia	56.97	
21.	▲ Brazil	55.82	
22.	▼ European Union (28)	55.82	
23.	▲ Germany	55.78	
24.	▼ Romania	54.85	
25.	▼ Portugal	54.10	
26.	▼ Italy	53.92	
27.	▼ Slovak Republic	52.69	
28.	▲ Greece	52.59	
29.	▼ Netherlands	50.89	
30.	▲ China	48.16	
31.	▲ Estonia	48.05	
32.	▼ Mexico	47.01	
33.	▲ Thailand	46.76	
34.	▲ Spain	46.03	
35.	▼ Belgium	45.73	
36.	▲ South Africa	45.67	
37.	▲ New Zealand	45.67	
38.	▼ Austria	44.74	
39.	▼ Indonesia	44.65	
40.	▼ Belarus	44.18	
41.	▲ Ireland	44.04	
42.	▼ Argentina	43.77	
43.	▼ Czech Republic	42.93	
44.	▼ Slovenia	41.91	
45.	▲ Cyprus	41.66	
46.	▲ Algeria	41.45	
47.	▼ Hungary	41.17	
48.	▲ Turkey	40.76	
49.	▼ Bulgaria	40.12	
50.	▼ Poland	39.98	
51.	▼ Japan	39.03	
52.	– Russian Federation	37.85	
53.	▼ Malaysia	34.21	
54.	▼ Kazakhstan	33.39	
55.	▼ Canada	31.01	
56.	▼ Australia	30.75	
57.	▲ Islamic Republic of Iran	28.41	
58.	▼ Korea	26.75	
59.	▼ Chinese Taipei	23.33	
60.	– Saudi Arabia	22.03	
61.	▼ United States	18.60	

Index Categories

- GHG Emissions (40% weighting)
- Renewable Energy (20% weighting)
- Energy Use (20% weighting)
- Climate Policy (20% weighting)

* None of the countries achieved positions one to three. No country is doing enough to prevent dangerous climate change.
 ** The position of Ukraine in the overall ranking is highly influenced by the effects of the ongoing conflict in the Donbas region on key CCPI indicators.
 For more information please refer to the country text on page 19.
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