



SPC2: Special Conference on Climate Crises

Student Officer: Selay Ertürk

Issue: Creating a climate-literate citizenry

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Committee: Special Conference on Climate Crises (SPC2)

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I. Introduction

For the last 200 years, due to certain human activities, the long-term shifts in climate start to have extreme outcomes. Every non-environmentally friendly act that humans take, from burning fossil fuels to using perfume, affects the ozone layer, thus the climate. These contaminating actions inevitably lead to a catastrophe, specifically the climate crisis. Therefore it must be questioned: What will happen to the climate if humans do not take ownership of it?

Last decade, during the warmest temperatures recorded in the past 140 years, many natural disasters occurred, particularly in the Americas. To exemplify, Superstorm Sandy, the Central American Dry Corridor, Hurricane Harvey, Hurricane Maria, the California fires, etc. can be given. The American region is one of the most affected places in the world by climate disasters which have caused billions of dollars and, possibly, a significant increase in climate change.

Although the main reasons for these disasters were not directly human errors, climate change explicitly made the situations worse. As time passes, the Earth becomes a less tolerable place to live due to the climate crisis, and there is only one to blame, humans. It starts to impact people's day-to-day lives, health, agriculture, work, and even their safety. Some small islands will sink under the oceans due to the 7-23 inch rise of sea levels by the end of the century if necessary measures are not taken. Briefly, the future of the planet is in peril, unless people continue to act in a way that's harmful to the environment.

So the question of "how" arises. How can people be more aware of the climate crisis? Citizens should be more resilient towards the further stages of climate change. Scientists continue to work on understanding the trajectory of the crisis and the course of climate change is pretty much visible. Therefore, people have to alter their point of view accordingly. This goal can be achieved through education, called climate literacy. Climate literacy is the understanding of how humans affect the climate and how they are affected by it. A climate literate person should be able to make responsible decisions about the environment and be aware of the consequences of their actions. Even basic knowledge about the climate system would improve the quality of their lives. They would be able to assess the relevance of arguments regarding climate change and raise their concerns more credibly.



II. Involved Countries and Organizations

United States of America

The United States is one of the largest developed countries and has become a guiding figure for developing nations. This is why when former when US President, Donald Trump, claimed that climate change is not real, despite the fact that it is an international threat, on more than 120 different occasions via Twitter, public speeches, or interviews, it was a huge setback in both practical and political terms in the effort of combating climate change. President Trump decided on withdrawing from the Paris Agreement on November 4, 2019. As a country with the largest and most dynamic economy, giving up its leading role in finding climate change solutions was a momentous setback to the steps that have been taken over the last 50 years ¹.

On the other hand, the US did commit some of the largest cuts to its greenhouse gas emissions in the world. For instance, between 2005 and 2015, the US managed to cut its greenhouse gas emission rates by 11.5 percent through adapting greener policies such as converting to less carbon-intensive fuels like natural gas. However, it does not mitigate the fact that US energy consumption recently hit a record high. At 15 percent, the United States remains the second highest contributor of carbon-dioxide emissions in the world ².

The United States still proactively seeks to adopt a sustainably developed education on climate change. For example, the U.S. Global Change Research Program (USGCRP) was established by the Presidential Initiative in 1989 which aims to create a new budget climate education and training, while also forming the interagency Action for Climate Empowerment (ACE) Working Group which serves to organize engagement with the Education Department (ED).

United Nations Educational, Scientific and Cultural Organization (UNESCO)

UNESCO has always been closely associated with helping people to become more educated in global matters. Similarly, with their Climate Change Education for Sustainable Development Program they seek to increase the rates of climate literacy among younger generations. In this program, participants are expected to achieve a proper understanding of climate literacy through a conceptual framework, a glossary of natural disaster terms, a training manual that contains integrated lessons, activities, tasks, and resources, including case studies and worksheets. On this matter, UNESCO had organized a policy, called the

¹ "The U.S. Is the Biggest Carbon Polluter in History. It Just Walked Away from the Paris Climate Deal." The New York Times, 1 June 2017, www.nytimes.com/interactive/2017/06/01/climate/us-biggest-carbon-polluter-in-history-will-it-walk-away-from-the-paris-climate-deal.html.

² Umair Irfan. "Climate Change: Animation Shows US Leading the World in Carbon Emissions." Vox, Vox, 24 Apr. 2019, www.vox.com/energy-and-environment/2019/4/24/18512804/climate-change-united-states-china-emissions.



UNESCO Strategy for Technical and Vocational Education and Training as well. It spanned the time interval of 2016 to 2021 and has the core principle of facilitating the smooth transition to more climate-resilient, sustainable societies.

The One UN Climate Change Learning Partnership

The One UN Climate Change Learning is a partnership between 36 multilateral organizations and is supported by 30 countries. It aims to raise awareness regarding climate change and its effects. Some of the many services that they provide are podcasts, pop-up speeches by experts, courses for both students and teachers. This partnership approaches the matter from a global perspective. It tries to encourage knowledge-sharing about the climate, boost education on climate change, provide specific resources -searchable library, training date calendar, climate emergency improvement articles, videos, etc. for people, and overall promotes global climate literacy.

Italy

On November 5, 2019, Italy became the first country to include sustainable development and climate change in its national school curriculum headed by the former Minister of Education, Lorenzo Fioramonti. With teacher training starting in January 2020, teachers from all levels committed 33 hours per year on the topic of climate literacy and on how to work against it through sustainability. For the high credibility of this new curriculum and consultation, environmental professionals were recruited from Oxford and Columbia Universities. As Fioramonti stated to the press on Earth Day, "I want to make the Italian education system to be the first education system that puts the environment and society at the core of everything we learn in school"³. This novel adaptation of education brings Italy to the forefront of climate change education, thus increasing climate literacy rates.

Mexico

Since the establishment of the recent administration (2018), Mexico has been working collaboratively with NGOs such as EarthxMexico, Telar Social, and Fundación EDUCA to design and subsequently implement alterations to the education of students. They aim to become more aware of climate change and sustainable development goals. Towards the end of 2020, Mexico's Ministry of Education and Ministry of Environment collaborated to create a new environmental education law, which would make climate literacy obligatory in schools. About this new curriculum alteration, Senator Clemente Castañeda Hoefflich claimed that "(...) the fight against climate change must be strengthened through basic education in classrooms"⁴.

³ "Italy Becomes First Country to Require Climate Change Studies in Schools." Earth Day, 6 Nov. 2019, www.earthday.org/italy-first-country-climate-change-studies-in-schools/. Accessed 24 Sept. 2021.

⁴ "This Week on Earth: The World Pushes for Climate Literacy." Earth Day, 17 July 2020, www.earthday.org/this-week-on-earth-the-world-pushes-for-climate-literacy/. Accessed 24 Sept. 2021.



The government created an impactful initiative across the whole country to contribute to building a more climate-literate citizenry, although the concrete outcomes of this initiative remain not clear.

China

Given the fact that China was one of the top contributors to the world's greenhouse gases in 2019 with 27% percent⁵, it is more crucial for Chinese citizens to recognize the underlying reasons for climate change and absorb the climate literature. Although the evidence of climate literacy rates in China has not been consistent, there is still no doubt that, as in many other countries, the rates are conservative. According to small-scale research conducted in 2019, school is the most vital source of information regarding the climate. However, it is vital to note that teaching only about environmental knowledge won't solve anything. Climate literacy also contains an over-emphasis on effective behaviors, meaning that the education that the students will receive should prepare them for taking immediate and relevant action. On the other hand, China embedded environmental education into its curriculum in 1973. However, many areas weren't able to adapt to that change due to the large size of the country and uneven resource distribution across urban/rural areas, so the whole mission had failed.

III. Focused Overview of the Issue

1. Introduction of Environmental Literacy

The notion of environmental literacy was introduced around 1968, in an article within the Massachusetts Audubon publication by Charles Roth. The article talked about the illiteracy of people who were consistently polluting the environment. However, there was no exact definition of environment literacy just yet. Therefore, Mr. Roth reconsidered its meaning and found out that environmental literacy should be referred to as the goal for education as a whole. To build their prosperous lives and to act as advocates for the planet, citizens must be able to protect the climate, food, water, etc.

One of the breakthroughs regarding climate literacy occurred between 2005 to 2014. Delivered by UNESCO, The UN Decade of Education for Sustainable Development (ESD) was established for the countries to have a chance to concentrate on their financial resources, time, and efforts on the future of the climate. The Decade of ESD focused on educating citizens about climate, climate change, and fundamental skills that aid them for a sustainable future.

⁵ "Report: China Emissions Exceed All Developed Nations Combined." BBC News, 7 May 2021, www.bbc.com/news/world-asia-57018837. Accessed 24 Sept. 2021.



As UNESCO stated, “ESD empowers learners to make informed decisions and responsible actions for environmental integrity, economic viability, and just society, for present and future generations, while respecting cultural diversity. It is about lifelong learning, and is an integral part of quality education.” (World Bank Environmental and Climate Literacy Final Report)

2. Barriers in Front of Climate Literacy

Taking adequate measures to ensure that climate literacy rates are going up can be challenging due to various reasons:

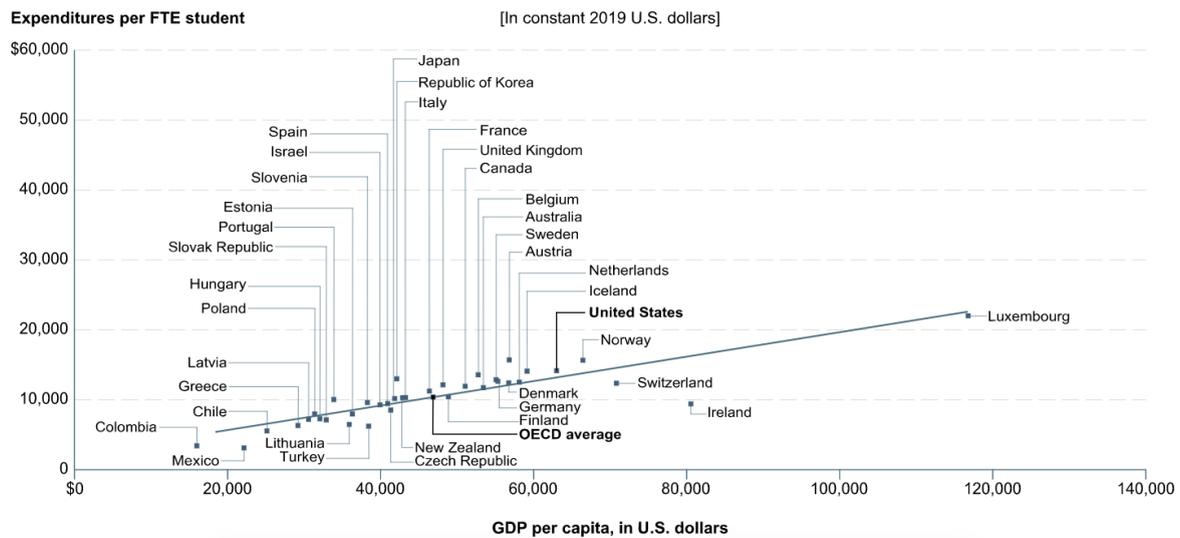
a. Economy

Building a climate literate citizenry could be difficult in countries where education is already weak. Some countries with poor economies struggle with the younger generation’s school education, let alone climate literacy. For instance, in Tanzania, many families cannot afford mandatory school uniforms, even though schools are free. Another example is Nicaragua, where the teachers are paid their salary on time or not at all. Other less economically developed countries, such as Argentina or Thailand, also, have to cope with financial insufficiency in the fields of education. On the other hand, even in more developed countries, like Australia, many indigenous families or families from low-socioeconomic backgrounds still have to face disparities in education.

The economics of a country influences the quality and accessibility of education. If climate literacy rates are to be increased, this aspect of the issue should be tackled immediately.

b. Government

As known, the most impactful source of a country -whether it is technology-related or economic- is their government, so the involvement or non-involvement of the governments could be a major barrier in the country’s education system. Typically, an education system of a country is mandated by its government. The governments build up a curriculum for students. Ideally, the governments are the ones who provide extra content in the classrooms if needed. That’s why governments should be the ones to make necessary and notable alterations in the curriculums concerning climate change.



"Figure 1: Expenditures per full-time-equivalent (FTE) student for elementary and secondary education in selected Organization for Economic Cooperation and Development (OECD) countries, by gross domestic product (GDP) per capita: 2017 ⁶"

Unfortunately, there is a trend of some governments not actively supporting their country's education system by underpaying teachers, not improving the conditions of some schools, not providing enough learning/teaching materials, or not equally distributing these materials (see Figure 1). For this reason, climate literacy cannot be taught appropriately and completely in school environments. Therefore, climate change education tends to be weaker than desired. Inevitably, low climate education standards and none at all costs humans the climate itself. For example, the students don't know how to properly separate their trash because they simply were not taught how to which contributes to pollution. It cannot be expected much from countries who are not aware of the stem of the environmental issues and are not actively seeking out ways to improve their conditions.

c. Culture

Almost every nation is working on closing the participation gap between female and male students in education. While it might be fairly easy to change regulations in some societies and let female students feel more dominant in school education, it is still a battle. Due to the close-mindedness of certain conservative groups, female students are less likely to complete their school education, if they are even allowed to start. Grounded and long-term measures should be taken urgently to overcome these obstinate mindsets. However, it is not something that can be done overnight. The impractical gender norms are mostly embedded into people's culture or even religion. Climate literacy could only be added to the equation when the equal opportunity in education is provided to students.

⁶ "COE - Education Expenditures by Country." Nces.ed.gov, nces.ed.gov/programs/coe/indicator/cmd.



Any society would be affected by climate change severely sometime during their existence unless they become more aware and tempted to take action. Environment education must not remain on the fringes of education systems if it is there at all.

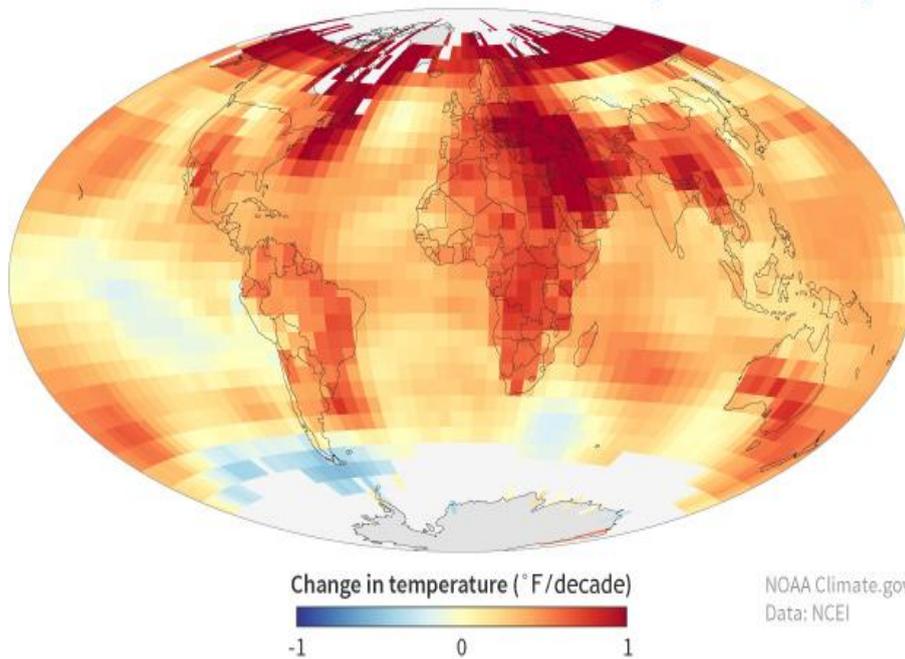
It is quite important that students are informed about how some of their traditions could end up being environmentally detrimental such as lighting huge bonfires or using separate cars for various celebrations. They must be taught how to make the most environmentally-friendly decision in their daily lives and be alarmed by their consequences. It is vital for the future of the world to not be blindly bonded to certain cultures and accept everything as it is. Instead, citizens would strive to have a highly climate-literate personality in order to live in a sustainable climate.

3. The Significance of High Climate Literacy Rates

With the integration of climate-based lesson programs and a more sustainable perspective, people would ensure that next generations will continue to be more climate literate than each other.

On that note, it must be mentioned that climate literacy should not just stay on paper. As Patricia Espinosa, the Executive Secretary of UN Climate Change at the United Nations Framework Convention on Climate Change (UNFCCC) stated before, “We need to better educate our children and youth on the science and the risks, but also the excitement of building a better world; generating more good jobs in sustainable businesses and the benefits of being greener consumers and more active citizens”⁷. People must be taught about the situation of the climate disaster in a more experiential way. Let’s look at an instance: Reading a couple of pages about how the oceans are filled with plastic bottles won’t be as shocking as actually visiting a beach with plastic bottles scattered all around. Climate literacy captures the complexity of the climate change crisis and prevents students from drawing concrete lines to the problem and the solutions, so having different and applicable approaches towards climate education would give better results in climate literacy rates, such as books to field trips to rivers, city drainage systems, visiting environmentalists, and listening to lectures. Even museums, for example, have climate change exhibitions for a more dynamic learning experience. The actions that are chosen right now will determine the unwritten future of the climate.

⁷ “Campaign urges governments at next year’s UN Climate Conference to back compulsory climate education and literacy” The World Pushes for Climate Literacy.” Earth Day, 21 September 2020, <https://www.earthday.org/press-release/campaign-urges-governments-at-next-years-un-climate-conference-to-back-compulsory-climate-education-and-literacy/>. Accessed 24 Sept. 2021.



“Figure 2: Recent Temperature Trends (1990-2019)⁸”

The agenda item at hand carries the purpose of forming a climate literate citizenry, which is extremely crucial to tackle considering the fact that when the Paris Agreement was inked in 2015, the deadline for global warming was 2050, at the moment, the focus of the disaster is 2030⁹. Between now and a miserable world irretrievably destroyed by humans, any measure that could help mitigate climate change must be implemented. At the top of the list is creating climate literate societies, thus a climate literate world.

Climate education will prepare the citizens to create more green job opportunities, hold policy makers accountable, stimulate a sustainable economy and environment. More locations will open for citizens to engage with climate change at different levels, from successful green projects to greenhouse gas emission solving attempts. Education will nurture climate-skilled citizenry and awareness that brings action together.

4. The Impacts of Greenhouse Gas Emissions

There is no denying that climate change is real and happening on a severe scale. Therefore, every single person must feel the urge of forming their climate literate identity. Meaning that it is significant for every citizen to know how this global crisis started, what still triggers it, and where it is headed to.

⁸ Lindsey, Rebecca, and LuAnn Dahlman. “Climate Change: Global Temperature | NOAA Climate.gov.” Climate.gov, NOAA, 15 Mar. 2021, www.climate.gov/news-features/understanding-climate/climate-change-global-temperature.

⁹ Clifford, Catherine. “Paris Climate Accord Leaders: What We Do between Now and 2030 Will Impact Life on Earth for Hundreds of Years.” CNBC, 3 May 2021, www.cnbc.com/2021/05/03/paris-climate-accord-leaders-behavior-will-impact-life-for-centuries.html. Accessed 25 Sept. 2021.



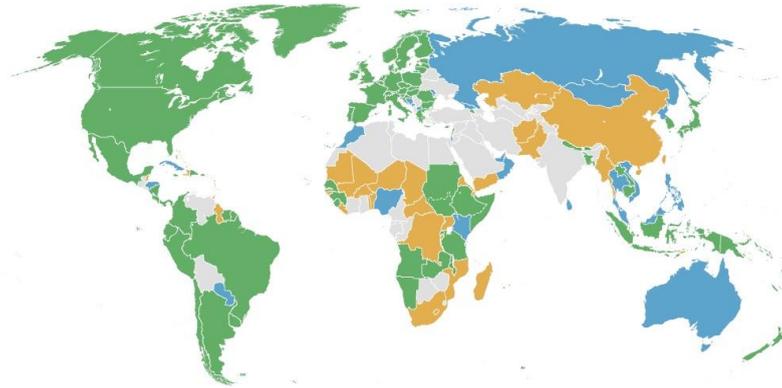
Given the fact that the temperature of the world has increased by 1.2 Celsius degrees since the late 1800s, the outcomes of climate change have aggravated. The consequences now include rising sea levels, flooding, water scarcity, intense droughts, severe fires, melting polar ice, etc. For this reason, climate literacy starts to play a more crucial role in the daily lives of the citizens, so it should be one of their uppermost priorities. According to the statement of Kofi Annan, the former Secretary-General of the UN, “The world is reaching the tipping point beyond which climate change may become irreversible. If this happens, we risk denying present and future generations the right to a healthy and sustainable planet – the whole of humanity stands to lose”¹⁰.

Without drastically altering the actions that are taken, the outcomes of climate change will be costly and unreturnable. Throughout the last century greenhouse gases in the atmosphere have risen to records that have never been observed in over 3 million years because of deforestation, industrialization, and agriculture spreading on a larger scale than needed. To fully grasp the rise of temperature due to greenhouse gases, here are some bullet points:

- The quantity of greenhouse gas emissions is directly correlated with the average temperature of the Earth.
- Since the Industrial Revolution, the quantity of greenhouse gas emissions, thus the temperature of the Earth has been rising.
- Carbon dioxide, mostly produced by burning fossil fuels, is the most abundant greenhouse gas.

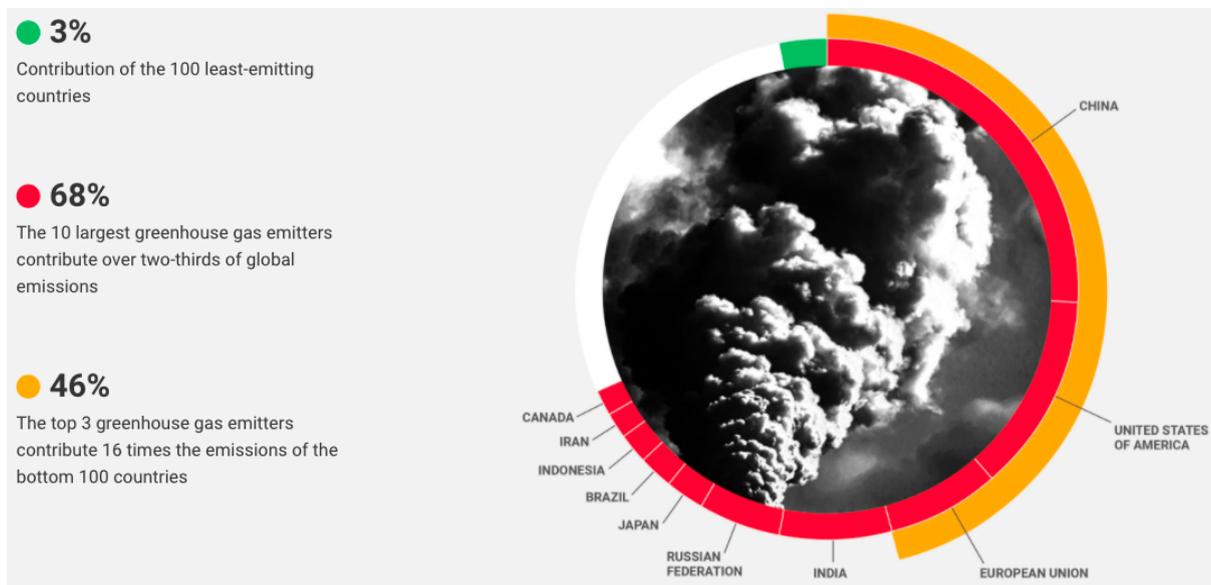
Luckily, some efforts have been proposed against these catastrophic records of greenhouse gasses by the United Nations. Recently, the UNFCCC came up with a geospatial report about countries that want to reduce their emission rates to zero, where yellow shows the Net-zero Commitment; blues are the new or updated Nationally Determined Contributions (NDCs); greens show the Net-zero commitment plus new/updated NDCs.

¹⁰ Davis, Nicola. “Kofi Annan: ‘We Must Challenge Climate-Change Sceptics Who Deny the Facts.’” The Guardian, The Guardian, 3 May 2015, www.theguardian.com/environment/2015/may/03/kofi-annan-interview-climate-change-paris-summit-sceptics. Accessed 13 Aug. 2021.



“Figure 3: UN Geospatial of Net-Zero Commitments¹¹”

On a separate note, it would be beneficial to point out the countries that contribute to the greenhouse gas emissions by the chart provided below. These countries should pay more attention to their climate literacy rates since their irresponsible actions add to overall inflation in temperature more. Countries that span large areas such as the United States, China, Russia tend to release more harmful gas into the atmosphere. Therefore, it is notable for them to work harder towards a climate literate citizenry. It is vital to bear in mind that high climate literacy rates are equivalent to being more aware of climate change, thus contributing less to greenhouse gas emissions.



“Picture 1: Emission Rates by Countries¹²”

¹¹ Nations, United. “Net Zero Coalition.” United Nations, www.un.org/en/climatechange/net-zero-coalition.

¹² Nations, United. “Net Zero Coalition.” United Nations, www.un.org/en/climatechange/net-zero-coalition.



IV. Key Vocabulary

Global warming: As the greenhouse gases start to amass in the atmosphere, they hold up more heat near the Earth's surface, which eventually causes the temperature of the Earth's surface to go high. This colossal amount of heat energy raising the average temperature of the globe is called global warming.

Climate change: There is a notable difference in the measures of the climate, such as precipitation, wind patterns, the temperature that lasts for a long period, for instance, decades.

Climate literacy: The understanding of our environment, climate change, and its effects on the world.

Greenhouse gases: Greenhouse gases, for example, methane, carbon dioxide, water vapor, are gases that trap between the atmosphere and the Earth's surface due to natural or human-made causes

Greenhouse effect: When the sun rays reach the Earth passing through the atmosphere, some of them are just absorbed by the Earth and some of them become reflected. The greenhouse effect is the heat energy that has been caught up by the greenhouse gases in the process of reflection.

Ozone layer: It is the layer that begins just 15 kilometers away from the Earth. It protects us from the harmful ultraviolet radiation coming from the Sun.

Fossil fuel: They are types of fuel that originate from dead plants and animals which were stuck in between rocks for centuries. Fossil fuels, such as coal, oil, and natural gas, are detrimental to the environment since they release greenhouse gases when they are burned.

Renewable energy: Renewable energy is the energy needed that comes from natural resources, for example, solar power, wind power, etc. They should be preferred more than fossil fuel fuels since they do not pollute the air or water. Unfortunately, that's not the case in today's world.

Carbon footprint: Carbon footprint is the number of greenhouse gases that have been emitted by a person, a family, a company both from direct and indirect use.

V. Important Events & Chronology

Date (Day/Month/Year)	Event
1977	UNESCO and the UN Environment Program (UNEP) gathered in Georgia to conduct the first intergovernmental



	conference on environmental education, where its definition was provided.
1986	The concept of ecological literacy was introduced.
1994	The United Nations Framework Convention on Climate Change was adopted on 21 March 1994.
1997	The concept of eco-literacy was introduced.
1997	The Kyoto Protocol was adopted on 1 December 1997.
2005	The UN Decade of Education for Sustainable Development (ESD) was established (from 2005 to 2014).
2006	The American National Oceanic and Atmospheric Administration (NOAA) came up with “The Essential Principles of Climate Literacy” for citizens who want to explore Earth’s climate, impacts of climate change, and approaches to resiliency and combating climate change.
2007	One of the first efforts to determine the phrase climate literacy at a three-day workshop “Climate & Weather Literacy” at UCAR in Boulder.
2009	During the Climate Change Summit, the UNCC: Learn was launched.
2014	The online platform of UNCC: Learn was launched, which is currently considered as a “one-stop-shop” for UN content on climate change and the green economy.
2015	The UN Sustainable Development Goals (SDGs) were established in September 2015 by the UN General Assembly, which included plenty of climate literacy themes.
2015	The Paris Agreement was created on 12 December 2015.

VI. Past Resolutions and Treaties

- [A/RES/75/217](#)

This is an adopted resolution by the General Assembly, on the matter of protecting the global climate for present and future generations of humankind. This resolution is focused on reaffirming the initiatives that are taken regarding raising awareness of the citizens on the matter of climate change.



- [FCCC/SBSTA/2019/INF.2 \(Section II, subsection D\)](#)

This Subsidiary Body for Scientific and Technological Advice highlights the importance of supporting the implementation of the Convention, the Kyoto Protocol, and the Paris Agreement.

- [UN Framework Convention on Climate Change](#) ¹³

The United Nations Framework Convention on Climate Change was an international treaty adopted in 1994 and is ratified by 192 countries. It acts as a parent treaty for the Paris Agreement and the 1997 Kyoto Protocol. The ultimate goal of the treaty is to stabilize greenhouse gas emissions in the atmosphere and prevent human interference in climate change as much as possible in order to have a sustainable environment. Under the UNFCCC, one of the expectations was industrialized countries reducing their emission rates. However, not only these countries failed to decrease their emissions but had highly increased them. Furthermore, during the initial years of the UNFCCC, it was more encouraged to lessen the contributions of climate change of developing nations, it was forgotten that they needed to adapt their already weakened economies to a more sustainable one. That's why UNFCCC was not sufficient to reach its goal.

- [Kyoto Protocol](#) ¹⁴

The Kyoto Protocol was adopted in December 1997 and entered into force in 2005. Although it is accepted by 192 parties, it solely binds developed countries. The Kyoto Protocol puts a heavier burden on developed countries since their greenhouse gas emissions in the atmosphere tend to be more. Before the Paris Agreement, the Kyoto Protocol tried to set a meticulous transparency policy for countries' emission rates. However, it is safe to state that the Kyoto Protocol wasn't successful due to the creation of the Paris Agreement 18 years later on. The goals set for the Kyoto Protocol were not properly met and were unrealistic. Climate literacy was not even in question, which can be guessed easily, due to the increase in climate change and its effects.

- [Paris Agreement](#) ¹⁵

The Paris Agreement is an international treaty adopted by 196 countries at the 21st Conference of the Parties (COP21) in Paris, 2015. The treaty entered into force in November 2016. The main goal of the Paris Agreement is to decrease the global warming level below 2 possible degrees if possible 1.5. It was the first time when a legally binding agreement gathered all nations for a common cause:

¹³ UNFCCC. UNITED NATIONS FRAMEWORK CONVENTION on CLIMATE CHANGE UNITED NATIONS. 1992.

¹⁴ United Nations. KYOTO PROTOCOL to the UNITED NATIONS FRAMEWORK CONVENTION on CLIMATE CHANGE UNITED NATIONS. 1998.

¹⁵ United Nations. Paris Agreement. United Nations, 2015.



combating climate change and its effects. It reemphasizes the significance of developed countries to take the lead role and guide more vulnerable developing countries throughout this path. The Paris Agreement not only draws notable attention to the lack of financial, technical, and capacity-building support of countries but also provides them if needed. Therefore, the Paris Agreement was relatively successful.

VII. Failed Solution Attempts

Climate change is a global issue, which means that it needs to be tackled internationally. Unhesitatingly, climate education is the best and most standardized way of coping with this global crisis. Although there are many successful attempts at increasing climate literacy, the failed attempts outweigh the successful ones. One failed attempt, for example, was incorporating climate literacy into only one subject. Climate literature is an interdisciplinary concept, thus it wouldn't be fitting for schools to put climate literacy lessons into biology or geography. STEAM could be a great field to start with.

Another one of the many reasons why these past attempts have failed is not taking into account the situation of developing countries. Despite the fact that having a more sustainable economy and a high climate literacy rate being extremely beneficial to the environment, it could be hard to adapt from a normal system to a more sustainable one. No country should be left behind when it comes to creating a climate-literate citizenry. The Kyoto Protocol can be shown as an instance of this kind of failed attempt that couldn't decrease the rates and effects of global warming. The protocol generally included points that are targeted to already developed countries. It didn't stress enough how countries with no such budget could contribute less to climate change. The protocol didn't offer any solutions or backup plans to those who originally wanted to replace their current economical and industrial systems with more environment-friendly models.

Lastly, The UN Decade of Education for Sustainable Development (DESD, 2005-2014) fell short in creating a climate literate citizenry. The initiative promised to "integrate the principles, values, and practices of sustainable development into all aspects of education and learning"¹⁶. However, the criteria stated failed to reorient climate literacy rates. It didn't succeed greatly in addressing the ethical, political, and scale (personal or collective) dimensions of climate change and sustainable development. The initiative's overall failure resulted in a lack of critical thought and change of education principles, attitudes, and practices, which adds to the climate catastrophe a level more.

¹⁶ Kwauk, Christina. Roadblocks to Quality Education in a Time of Climate Change. 2020.



VIII. Possible Solutions

According to the NOAA (2009), a climate literate person is someone who understands the basic principles of Earth's climate, is aware of credible information regarding climate change, is responsible enough to make their own decisions that influence the climate or climate change as a whole, and knows how to communicate with the climate in the best way possible. Moreover, climate literacy is the summation of media, science, and environmental literacy as a whole.

The phrase "climate literacy" is not a phrase commonly used enough in daily lives, which is a drawback to start with. The governments should consider collaborating with the NGOs in order to understand the scope of their citizens and try to spread climate literacy. They can use various media canals, such as newspapers, social media, broadcasts, the Internet, etc. Campaigns could be an effective method to cope with raising awareness too.

A possible solution that could be stressed the most is formal and informal education. Both newer and current generations should be informed about what it means to be a climate literate person. In addition to primary, secondary, and college educations, institutions need to expand the place of climate change in both formal and informal education curriculums. Students need to be encouraged to learn beyond sole memorization. Project and inquiry-based learning need to be utilized and assessed. For instance, after more than 70 years, Stanford University opened a new faculty on Climate Change. This new sustainable initiative acts as a single entity that accelerates the progress of fostering the climate, which many consider as humanity's most urgent challenge. It engages the faculty members and students in "creating a future in which humans and nature thrive in concert and perpetuity"¹⁷. Establishing similar initiatives must be considered while mitigating the low climate literacy rates.

Furthermore, it is crucial to bear in mind that climate change is an interdisciplinary concept so it requires the intervention of more than one subject. That's why including a few climate change lessons into biology lessons won't work as efficiently as hoped for. The climate and climate change should be explored in-depth with STEAM areas. It is vital to acknowledge the non-identical interests of students and engage them in lessons accordingly. Modern learning techniques should be taken into account while teaching, such as calculating the total greenhouse gas emission of a family, the ecological footprint of a factor, or how to shop more sustainably.

One of the barriers, as mentioned, was the governments themselves. Governments' educational expenditures started to increase over the years. However, governments still need to allocate a significant

¹⁷ "Sustainability Initiative." [Sustainabilityinitiative.stanford.edu](https://sustainabilityinitiative.stanford.edu/), sustainabilityinitiative.stanford.edu/. Accessed 24 Sept. 2021.



amount of their educational monies to raise their climate literacy rates by funding field-based projects or experts, to benefit students. Teachers should be educated appropriately so that they are qualified to teach students. Setting aside financial support, governments should use their other resources, such as up-to-date environment and climate resources, and monitoring high functioning schools in terms of climate education.

There is no doubt that full resilience in these uncertain times is yet to be achieved. Nonetheless, coming up with and implementing both short-term and long-term solutions are crucial in order to make a visible impact on increasing climate literacy rates, thus decreasing the scale of the climate crisis.

IX. Useful Links

- Past decade being the hottest that has ever been recorded by the NOAA:
<https://www.nationalgeographic.com/science/article/the-decade-we-finally-woke-up-to-climate-change>
- IPCC Sixth Assessment Report regarding the understanding of climate and climate change:
<https://www.ipcc.ch/report/ar6/wg1/#SPM>
- The Essential Principles of Climate Literacy:
<https://www.climate.gov/teaching/essential-principles-climate-literacy/essential-principles-climate-literacy>
- Greenhouse Gases, Carbon Dioxide Levels:
<https://www.nationalgeographic.com/environment/article/greenhouse-gases>
- Environmental Literacy by Earth Day:
<https://www.earthday.org/campaign/climate-environmental-literacy/>
- The UN Decade of ESD, further reading:
<https://en.unesco.org/themes/education-sustainable-development/what-is-esd/un-decade-of-esd>
- Climate Change Performance Index Result 2020:
https://newclimate.org/wp-content/uploads/2019/12/CCPI-2020-Results_Web_Version.pdf

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