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Role of policymakers and climate action in the resolution of climate crisis: A literary study of Ragnarok and IPCC's working group I summary for policymakers

Allen Robert

P G Student, Department of English, Amrita Vishwa Vidyapeetham, Amritapuri, India

Aswanth Mohan

P G Student, Department of English, Amrita Vishwa Vidyapeetham, Amritapuri, India

Anusudha R. S.

Assistant Professor, Department of English, Amrita Vishwa Vidyapeetham, Amritapuri, India

Abstract--Climate change and its consequences are one of the biggest concerns facing humanity. Although many people are climate-conscious and are working toward a sustainable future, the situation is ever-worsening. This is mainly because of the rich and powerful industrialists who seem to operate above any climate responsibility. Such industries are the biggest sources of carbon emissions, and they ignore climate concerns in favour of economic profits. Ordinary citizens are powerless in stopping the damages done to the environment by such organisations, therefore policymakers must enact and enforce policies that regulate and limit climate change. This paper examines the current climate situation with the help of *Working Group I: Summary for Policymakers* published by the United Nations Intergovernmental Panel on Climate Change, and the role of policymakers in climate action through an analysis of the Netflix series *Ragnarok*.

Keywords--climate change, climate action, industrial pollution, carbon emission, greenhouse gases, policymakers, IPCC, sustainability.

Introduction

“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”, warns Kofi Annan, former Secretary-General of the United Nations. Anthropogenic climate change is one of the biggest threats facing humanity. The very survival of Earth and its inhabitants are at risk due to climate change. Since the late 20th century there has been a rise in climate awareness amongst the masses, mainly due to the innumerable scientific studies done in the field, putting climate change and global warming on the centre stage. Art imitates life and such focus naturally meant that these topics slowly crept into art and literature as well. This genre of literature dealing with climate change and related topics is known as Climate Fiction and is abbreviated as cli-fi. It is a subgenre of science fiction. Such works also play an important role in spreading climate awareness to the masses. One of its latest entries is the Netflix series *Ragnarok*.

Set in the fictional town of Edda in Norway, *Ragnarok* deals with the issues of climate change as a result of human negligence. It is a modern rendition of the events of Ragnarok from Norse mythology, where Gods and Giants faced off against each other in a final battle. Here the ancient gods are reincarnated in some of the handpicked youth of Edda. They form an allegiance to fight against the giants– the rich and powerful Jutuls family who are hiding in human form. The Jutuls are rich industrialists who employ most of the adult inhabitants of Edda in their factory. They also have great influence over the government. Thus all the power in the town is consolidated by them, further boosting their greedy industrial schemes with no regard for the environment and the inhabitants, a situation that is eerily similar to what is happening in the real world.

Movies and TV series that deal with climate change and its consequences are on the rise. They do play a role in creating a climate-conscious society. The entertainment factor of them can capture the attention of the general public much better than scientific works full of technical details which might not be appealing to everyone. Cli-fi movies are usually set in the present or in the future. Movies set in the present often deal with how people approach climate change and cope with extreme weather events. The ones set in the future are usually in an apocalyptic or a post-apocalyptic world that has been ravaged by the effects of climate change. Popular movies like *Day After Tomorrow*, *Dune*, *Mad Max*, *Space Sweepers*, *Wall-E*, *Waterworld*, *Interstellar*, *Snowpiercer* etc. are examples of this genre. *Day After Tomorrow* depicts a world that is under the threat of extreme weather events and climate change. Scientists warn the politicians that the Northern states of the US are under severe threat of an ice age-like event and that the civilians must be evacuated, but the President dismisses the urgency of this situation. Finally, a “superstorm” event occurs, freezing much of the Northern states and covering the Earth’s surface in ice sheets. This movie shows how climate denial will have devastating results and the importance of policymakers to practise urgency in climate action. *Wall-E* is another critically acclaimed cli-fi movie and it is set in a post-apocalyptic world. Anthropogenic climate change has made Earth uninhabitable for all life. Humans turned to renewable and sustainable sources of energy too late and by the time they did so, the effects of

climate change had reached a tipping point from where the world could not be saved anymore. As the movie begins the Earth is a wasteland filled with garbage, uninhabitable for humans, who have now evacuated to a space station. The movie follows the adventures of a sentient robot called WALL-E, who discovers the first evidence of vegetation on Earth in over seven hundred years. Together with some humans and another robot called EVE, WALL-E tries to make Earth habitable again. This movie shows profit-oriented industries destroying Earth and contributing to climate change through mindless pollution and the policymaker's failure to reign in and control such polluting industries which have pushed the world to a climate apocalypse. *Ragnarok* also deals with the issues of industries causing severe damage to the environment in pursuit of short-term profits, their use of deceitful propaganda to manipulate and deceive people, and how they use their influence over governments to escape sanctions that will reduce profits in favour of sustainability.

Many studies have been published on the subject of climate change and global warming, one of the most recent and exhaustive of such studies is the Sixth Assessment Report (AR6) published by the United Nations Intergovernmental Panel on Climate Change (IPCC). The report has three working groups and this article will focus on the *Summary for Policymakers (SPM)* done by the "Working Group 1- The Physical Science Basis." The official website of IPCC says that *SPM* "provides a high-level summary of the current state of the climate, how it is changing, the role of human influence, and possible climate futures" (IPCC). This article with the help of *Summary for Policymakers* examines the severity of the current climate situation and analyses how policymakers have a bigger and more influential role to play in climate action than the general public.

Summary for Policymakers (SPM) done by "Working Group 1- The Physical Science Basis" is divided into four chapters, as follows: "The Current State of the Climate", "Possible Climate Futures", "Climate Information for Risk Assessment and Regional Adaptation" and "Limiting Future Climate Change". The first chapter summarises the current state of the climate, saying that it is "unequivocal" that there is direct human influence on the rising temperature of the atmosphere, ocean, and land (4). It also says that these recent changes are "unprecedented" and that "human-induced climate change is already affecting many weather and climate extremes in every region across the globe" (8). The second heading gives a stark warning about the future of the planet if the current trend of unsustainable practices continues. It says that:

Global surface temperature will continue to increase until at least the mid-century under all emissions scenarios considered. Global warming of 1.5°C and 2°C will be exceeded during the 21st century unless deep reductions in CO₂ and other greenhouse gas emissions occur in the coming decades. (14)

This chapter also warns that "many changes due to past and future greenhouse gas emissions are irreversible for centuries to millennia, especially changes in the ocean, ice sheets and global sea level" (21). The third chapter provides an "assessment of climate-related risks" for adaptation planning. The final chapter analyses how future climate change can be limited and how such emission scenarios will affect future climate change. It says that by "limiting cumulative CO₂ emissions, reaching at least net zero CO₂" and with "strong, rapid and

sustained reductions in CH₄ emissions” along with other greenhouse gases will bring about positive changes. The report warns that human beings are on a path of self-destruction and that if the current trend of carbon emission continues the world will head towards a tipping point from which there is no return, but it also gives hope that strong and rapid action by the policymakers to curb pollution and other steps to reduce carbon emission can keep a check on this dire situation, salvaging Earth from a dystopian future.

Along with rapid industrialisation, the Industrial Revolution also started anthropogenic climate change, through the release of large amounts of CO₂ and other greenhouse gases into the atmosphere by human activities. *SPM* says that, “Each of the last four decades has been successively warmer than any decade that preceded it since 1850” (5). Global warming and climate change are causing a range of issues that threaten the survival of humans, animals and of planet earth itself. Melting of glaciers and polar ice caps, rising sea levels, increase in the frequency of natural disasters are all the effects of climate change. According to *SPM*:

Human-induced climate change is already affecting many weather and climate extremes in every region across the globe. Evidence of observed changes in extremes such as heatwaves, heavy precipitation, droughts, and tropical cyclones, and, in particular, their attribution to human influence, has strengthened since AR5 [published in 2014]. (8)

The erratic and unprecedented increase in the number of such extreme weather events serves as visible evidence of climate change. Some such recent examples are the floods in South India, Sri Lanka and in some European nations like the UK, Germany and Croatia; devastatingly long-lasting wildfires in North America, Australia, Russia, Turkey, Greece, Italy, Lebanon etc.; many hurricanes and other such storm type events occurred in many parts of the world resulting in widespread destruction to life and property; heatwaves that hit many parts of the world and the long droughts that gripped India, East Africa and the US. This unprecedented rise in natural disasters has put the scientific community on high alert, and studies published in the aftermath of these events all point to climate change as the common culprit. It has been found that rising global heat levels had a direct impact on most of these climatic events. Melting of the ice sheets, rising sea levels, an increasing number of storm and flood events, droughts and wildfires have all been linked to climate change. (IPCC 8-9). In *Ragnarok*, the town of Edda faces the brunt of global warming mainly in the form of rapidly melting glaciers.

An establishing shot is the first shot of a scene and it serves the important role of providing information on the setting of the plot. *Ragnarok* has a powerful establishing shot, where the natural beauty of Norway is shown first and then the image of industries spewing pollutants into its air and water are juxtaposed in the foreground. *Ragnarok* is a blend of fantasy, drama, Norse mythology and climate fiction that come together to show how the world is being affected by industrial pollution. The series shows how close Earth is to the Ragnarok event from Norse mythology, which ends with the destruction of the world and Earth sinking into the water. The central plot of this show hinges on climate change and how everyone is responding to it. The major problems shown in the series are the rapid melting of glaciers due to global warming, the dumping of plastics and heavy

metals into the town's water systems by the local industries which causes problems for both the environment and the inhabitants of Edda who are dependent upon these water sources, and a local government that fails to keep a check on these industries. The character of Isolde leads the climate activism in the town. She tries to bring climate awareness to the residents of Edda by posting videos on *YouTube* in which she does research on the melting of glaciers and also examines the aquatic species to figure out the role of the local industries in polluting the water sources of the town. In *Ragnarok*, a local industry that pollutes the environment in an effort to avoid government regulations that reduce their profit is seen.

The Jutul family owns the local industry in Edda. The majority of the adult population of the town, including Magne's mother Turid, is employed by them. They have a great influence on the economy of the town. This prevents the local government from interfering in their business too much, giving the Jutuls influence over the local government as well. These factors have given them much power and influence over the town. It is seen that the efforts of young climate activists like Isolde does not amount to much at first as the Jutuls are able to use their influence to escape regulatory checks. Many residents of Edda are falling victim to fatal diseases due to the consumption of toxin-filled waters. When the problem is brought to their attention, instead of stopping the emissions, the Jutuls try to solve the problem by buying the victims' silence with money or through threats that any legal action from their part would result in them losing their job. The leading environmentalist of the town Isolde is murdered by Vidar, the head of the Jutul industries, when she discovers that the Jutuls are responsible for the pollution of the water bodies of the town.

Magne then tries to carry on his late friend's legacy by continuing to protest against the Jutul industries but he too is suppressed. Ran, the wife of Vidar, is the principal of the town's school. She threatens to expel Magne if he continues with his protests. Even his mother is against this protest because she is also an employee at Jutul industries, and her job is at risk due to her son's involvement in the protest against them. In the second season of *Ragnarok*, Magne with the help of some allies manages to obtain concrete evidence of the malpractices of the Jutuls, when he finds out that the cause of toxins in the water bodies was due to the improper disposal and storage of chemical wastes over many years. When he releases this information, the Jutuls come under the investigation of the police and a government environmental panel, forcing them to shut down their factories. They decide to remove all production from Norway and move across to Asia. But later when the government realises that the economy of the town is highly dependent upon the functioning of these factories, they allow the Jutuls to reopen them, with assurances that Jutuls must assist in the clean-up operations and also that all regulations must be followed henceforth.

The power held by the Jutuls over the town and the government reflects the situation in the real world. Fossil fuel is a very important driving force for industrialisation. Therefore, in a developing nation, fossil fuel industries hold so much political influence and power, that they are able to influence policy itself. They use this power to ensure that the governments are relaxed about their climate policy. Some companies have also been caught funding climate denial

groups to spread misinformation about the role of fossil fuels in causing global warming, similar to the case of tobacco companies spreading misinformation regarding the carcinogenic effects of smoking. The case of American oil and gas corporation ExxonMobil formerly known as Exxon, and that of the French oil and gas company TotalEnergies SE, formerly known as Total SE are the most famous, recent examples. An investigation spanning eight months conducted by InsideClimate News revealed that Exxon had conducted their own research and knew about the dangers of climate change and how carbon emissions are a direct cause of it, all the way back in 1977. In their investigation, they found out that:

toward the end of the 1980s, Exxon curtailed its carbon dioxide research. In the decades that followed, Exxon worked instead at the forefront of climate denial. It put its muscle behind efforts to manufacture doubt about the reality of global warming its own scientists had once confirmed. It lobbied to block federal and international action to control greenhouse gas emissions. It helped to erect a vast edifice of misinformation that stands to this day. (Banerjee et al.).

The case of Total SE is also similar to this. A group of researchers found that the company knew about the link between fossil fuel, carbon emissions and climate change as far back as 1971. They found that although by the 1980s Total was fully informed about the “potential for catastrophic global warming from its products”, by the late 1980s they began promoting doubt regarding the “scientific basis for global warming.” (Bonneuil et al. 1). Many other industries have also been part of such controversies. And like the Jutuls, in light of investigation and interventions from courts etc., they merely promise to do better. Exxon and Total did a rebrand to ExxonMobil and TotalEnergies SE respectively, promised many green initiatives that did not amount to much and continued to operate unimpeded. These companies are seen engaging in climate denial propaganda and greenwashing.

The Jutuls also engage in greenwashing. Greenwashing is a deceitful marketing gimmick, where companies market their products as environmentally friendly, when in fact it is not. It is also greenwashing when “an organization spends more time and money on marketing itself as environmentally friendly than on actually minimising its environmental impact” (Edwards). As Magne arrives in Edda, he comes across a discarded brochure that claims that the town’s natural environment is pristine. The whole scene is ironic as the brochure is enclosed in a thin plastic cover and inside it shows a picture of Vidar and a politician shaking hands as they make such claims. The Jutuls ignore regulations in favour of profits, and the policymakers turn a blind eye to this and fail to protect the community. Despite this, they engage in propaganda that the town is actually pristine and that they are responsible for keeping it that way.

As seen in the case of *Ragnarok*, the inhabitants of Edda are mostly helpless against the tyranny of the Jutul family. With even the government in their pocket, this group of rich industrialists are able to get away with everything. They avoid almost all inspections of their factories through their influence over the local policymakers and then cut corners in terms of environmental protection to get the maximum profits. The once pristine and beautiful Edda is now a polluted mess, and the inhabitants of Edda are victims of various ailments, including life-threatening ones like cancer. But they are powerless in front of the Jutuls. The

giants in the show stand as a metaphor for all the powerful industrialists and other such organisations that have consolidated so much power that they are able to pollute and destroy the world without facing any consequences. Just as the inhabitants of Edda were helpless against the Jutuls, common people across the world are also helpless. Heroes like Isolde always emerge and do their bit to inform the world of the climate atrocities committed by these industrialists, but often these voices go unheard or are silenced by the powerful. Many such examples, where industries pollute the environment not only destroying Earth itself but also destroying the health of the people living in the vicinity of these factories are there.

The Hinkley groundwater contamination incident is one such famous example, where the Pacific Gas and Electric Company improperly disposed of carcinogenic chemical waste leading to the contamination of the town's groundwater. Teenagers in the form of ancient Norse gods came to the aid of the citizens of Edda, but this is unfortunately impossible in the real world. In the real world more than often the powerful industrialists are able to get away with their misdeeds after paying a small price that does not really affect their operation. Successful cases of an individual or a group mobilising against the industries forcing them to take action against the pollution they are causing is low when compared to the fights lost. These companies have the resources to fight and settle such battles in their favour. Thus, governments and policymakers are best suited to ensure that all industries which deal with unsustainable methods are well regulated. Studies published by organisations like the IPCC are curated to assist the policymakers in taking the required actions to deescalate the current climate situation and guide Earth to a state of climate stability.

Industries, mainly fossil fuel industries are responsible for the majority of carbon emissions. The "CDP Carbon Majors Report 2017" found that "over half of global industrial emissions since human-induced climate change was officially recognized can be traced to just 25 corporate and state [fossil fuel] producing entities" (Griffin 8). This shows that efforts from the general public alone will not save Earth from a climate catastrophe. Such industries must also put effort. But unfortunately as seen before, these profit-oriented businesses cannot be trusted on their own. This is where policymakers must step in to enact and enforce policies that meet the climate targets decided in international climate summits, thereby effectively mitigating climate change and its effects.

References

1. Banerjee, Neela, et al. "Exxon's Own Research Confirmed Fossil Fuels' Role in Global Warming Decades Ago." *Inside Climate News*, 16 September 2015, <https://insideclimatenews.org/news/16092015/exxons-own-research-confirmed-fossil-fuels-role-in-global-warming/>.
2. Edwards, Carlyann. "What Is Greenwashing?" *Business News Daily*, 25 February 2022, <https://www.businessnewsdaily.com/10946-greenwashing.html>.
3. Griffin, Paul. "CDP Carbon Majors Report 2017." *The Carbon Majors Database*, 2017. CDP, <https://cdn.cdp.net/cdp-production/cms/reports/documents/000/002/327/original/Carbon-Majors-Report-2017.pdf?1501833772>.
4. IPCC, 2021: Summary for Policymakers. In: Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [MassonDelmotte, V., P. Zhai, A. Pirani, S.L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M.I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J.B.R. Matthews, T.K. Maycock, T. Waterfield, O. Yelekçi, R. Yu, and B. Zhou (eds.)]. Cambridge University Press. In Press.
5. IPCC. "IPCC Sixth Assessment Report Working Group 1: The Physical Science Basis." IPCC, https://www.ipcc.ch/report/ar6/wg1/?2ac0f94c_page=2&3caa887c_page=1&70ef0ed6_page=4&98dbe491_page=3.
6. Price, Adam, creator. Ragnarok. SAM Productions, 2020. Netflix, www.netflix.com.
7. Rahmadeni, A. S. ., Hayat, N. ., Alba, A. D. ., Badri, I. A. ., & Fadhila, F. . (2020). The relationship of family social support with depression levels of elderly in 2019 . *International Journal of Health & Medical Sciences*, 3(1), 111-116. <https://doi.org/10.31295/ijhms.v3n1.188>
8. Suryasa, I. W., Rodríguez-Gámez, M., & Koldoris, T. (2021). Get vaccinated when it is your turn and follow the local guidelines. *International Journal of Health Sciences*, 5(3), x-xv. <https://doi.org/10.53730/ijhs.v5n3.2938>