

From Policy Making to Planetary Survival: Charting Speculative Pathways to Combat Climate Crisis in Kim Stanley Robinson's The Ministry for the Future

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Abstract: Kim Stanley Robinson's *The Ministry for the Future* (2020) is a deeply speculative fiction that reimagines climate policies to mitigate escalating environmental crisis and climate change. The focus of this paper is to analyse the implementation of radical policy interventions such as the carbon coin and large-scale geoengineering as strategies to help mitigate climate crisis analysed through the framework of United Nations' Sustainable Development Goals (SDGs) particularly SDG 13 (Climate Action), SDG 10 (Reduced Inequalities) and SDG 17 (partnership for the Goals). Robinson's narrative envisions a fictional UN-convened ministry tasked to combat planetary-scale issues like global warming, deforestation, carbon emission and restoration of natural. The novel conceptualizes the planet as a global village which advocates equality for all beings - both humans and non-humans. Drawing on the theories of environmental criticism, climate governance and environmental economics this paper explores how speculative fiction can act a blueprint for radical and plausible climate reforms. The novel's employment of carbon coin and geoengineering strategies to reconstruct a dying planet offers an alternative framework that challenges market – driven economic stagnation. Hence, the novel *The Ministry for the Future* not only acts as a literary parameter to analyse climate crisis but also serves as a literary tool to reimagine and reinterpret SDGs in an era of environmental degradation.

I. INTRODUCTION:

Kim Stanley Robinson's *The Ministry for the Future* belongs to the genre of speculative fiction which envisions alternative global futures in case of climate crisis. Climate fiction or cli-fi addresses global environmental issues that lead to climate catastrophes. These narratives help identify the primal cause for most global issues like floods, drought, refugee crises, economic depression and many others. Robinson's novel follows this trajectory by addressing global climate change issues and envisioning speculative yet plausible policy frameworks that could contribute towards planetary sustainability. The novel's eponymous institution, formed under the Paris Agreement, acts both as a bureaucratic experiment and a literary metaphor for collective survival. The novel presents the view that the planet can survive if humans work in harmony with the non-human world- understanding the environment's contribution in the cycle of the planet. Real world problems like global warming and melting of glaciers is handled using speculative geoengineering techniques highlighting that damage reversal is a plausible option. In the stream of global economy Robinson introduces the carbon coin as an offset of real-world carbon credit which is given to companies to invest in greener options, however, the carbon coin in the novel is more like a currency of high value given to people who are able to sequester high amounts of carbon through farming or business that sequesters carbon or countries that refrain from releasing carbon into the atmosphere. The target of such an economy is to suppress the use of fossil fuels and move in the direction of greener and cleaner energy resources. This paper aims to examine how Robinson portrays real world problems and proposes solutions through literary imagination

and speculative intervention.

The institution referred to as "the ministry" in the novel is established by the United Nations in order to conserve and preserve the environment for future generations. The Ministry serves as an advocate for intergenerational justice tying its mission to UN human rights framework. Robinson's states, "This new Subsidiary Body is furthermore charged with defending all living creatures present and future who cannot speak for themselves, by promoting their legal standing and physical protection." (Robinson 28). The ministry's sole purpose was to enforce actions that will help control and conserve the environment and all the creatures in the planet. The United Nations Sustainable Development Goals, especially SDG 13 (climate Action) emphasises the need to address climate change for both current and future generations, the key concept of SDG 13 (climate action) is to combat climate change and its impact. However, while the SDG framework recognises the importance of intergenerational justice and environmental conservation, it lacks a dedicated UN "ministry" with explicit mandate like mentioned in Robinson's novel. Hence, the SDGs for climate action and intergenerational equity often falls short of implementing its principles. While some global organizations (e.g., IUCN) have developed intergenerational partnerships and governance models, there is no single UN body with the comprehensive mandate described in the novel. Instead, intergenerational justice is addressed through a patchwork of policies, frameworks, and advocacy efforts. (Melanie Zurba et al.498)

Climate Catastrophe and the Demand for Radical Governance

The Paris agreement is a legally binding International treaty on climate change adopted by 196 parties at the 2015 United Nations Climate Change Conference (COP21) in Paris. Its key mandate is to reduce greenhouse gas emissions, enhancing adaptation and financial support for climate action, particularly in developing countries. The agreement operates on a five-year cycle, with countries submitting and updating their Nationally Determined Contributions (NDCs) outlining their climate actions. With this framework in the narrative Robinson's novel begins with a devastating heat wave in India which kills millions of its citizens, forcing the government to take extreme measures like speculative geoengineering methods to combat the heat. The death toll rises to the extent that there is scarce work force to run the nation. Hence, India under these dire circumstances is forced to cause a 'pinotuba' effect which grants relief from the heat wave but not without possible effects. This action by India is considered as going against the Paris Agreement as the country is unaware of the possible repercussions of its geoengineering strategy. However, Robinson asserts that many countries do not adhere to the Paris Agreement, developing nations like India suffer because of the folly of other carbon emitting nations. Robinson writes, "...I know we have burned a lot of charcoal in the last few decades, but it's nothing compared to the West. And yet we signed the Agreement to do our part...no one else is fulfilling the commitments...we have this heat wave." (Robinson 19). Robinson presents a climate catastrophe to foreground the urgency of global action and the question of climate justice is not served. Who is to be held accountable in global politics? When one nation does not adhere to climate justice the other nation suffers. Robinson notes, "It's funny how England never seemed to pay too much of a price for its crimes." (Robinson 32) Developing countries suffer more under the shadows of developed nations. Because of the actions of a few countries the entire world suffers the effects of climate change. Yet, these super powers are never held accountable for their heinous acts. The Paris Agreement marked a major step by explicitly recognizing climate justice, but its impact on achieving true climate justice remains limited. While the Agreement set ambitious goals and acknowledged the disproportionate burdens faced by developing countries, it falls short in ensuring fair outcomes and accountability for those most responsible for climate change. As Onifade et al. argue, procedural justice is limited, as decision-making often excludes the most affected communities. Non-state actors and litigation are increasingly used to push for accountability, but these tools have limits, especially for distributive justice fair sharing of burdens and benefits (T. Tunbi Onifade et al. 2021)

Robinson employs the concept of geoengineering techniques like stratospheric aerosol injection and solar radiation management. These techniques are proposed to counter climate change but it carries significant risks and after effects. David Wallace Wells in his book *The Uninhabitable Earth* talks about the once revolutionizing and at the same time terror mongering effects of geoengineering. Wells states, "We may yet see a climate deus ex

machina—or, rather, we may yet build one, in the form of carbon capture technology or geoengineering, or in the form of a revolution in the way we generate power, electric or political. But that solution, if it comes at all, will emerge against a bleak horizon, darkened by our emissions as if by glaucoma." (Wells 40). Wells believes that there might be a possibility of countering climate crises through geoengineering but at what cost? How will geoengineering ensure that there will not be an after effect? Moreover, the question of who will have the power to control such a technology as the fate of the world may depend on their commands. Furthermore, the scientific consensus believes that intervening with the natural order is yet to be assessed and for these reasons the scientific community does not risk enforcing these techniques except in times of emergency. Robinson reiterates the precarious nature of climate, as he states, "As many people, in other words, as soldiers had died in World War One... the heat wave had taken only two weeks." (Robinson 227). Climate change is like a subtle act of war waged by the carbon emitting countries, those countries which try to move towards cleaner and healthier ways still suffer from the acts of others. There is no ministry or governance to hold these countries accountable for their actions.

Radical Economic Governance: Carbon coin

The introduction of the carbon coin in *The Ministry for the Future* represents another speculative approach to the challenge of sequestering greenhouse gases. Mary Murphy, Head of Ministry on the recommendations of her ministry colleagues, introduces the carbon coin a fictional counterpart to the real-world carbon credit. Designed to incentivize carbon reduction, the coin lacks a fixed or a real-world value but is conceptually tied to the removal or sequestration of one metric ton of carbon dioxide. Backed by central banks in the novel, the currency symbolises the ministry's efforts to make a bold statement by departing from mainstream economical models. Robinson writes, "This to be a digital currency, disbursed on proof of carbon sequestration to provide ...global capital into virtuous actions on carbon burn reduction...would work best if the central banks backed it, or created it. ... paid into the world to reward biosphere-sustaining actions." (Robinson 172) Through this speculative economic approach the writer envisions the system to become a potential catalyst for achieving a more equitable and sustainable future. Under this framework countries are rewarded with carbon coins based on their effectiveness in reducing emissions, thus linking climate performance directly to economic benefit. Wells in his book *The Uninhabitable Earth* stresses the idea that continuing the use of fossil fuels and other environmentally unsafe activities will cause more damage to the environment and it is far more expensive than the price required to transform the economy. The carbon coin restructures value itself, rewarding ecological restoration over carbon-intensive production. Robinson provides the carbon coin as a speculative treatment to prevent the earth from becoming uninhabitable and shifting the power dynamics towards the regions most affected by climate injustice. However, in real case scenario the carbon

credit, green bonds do not really bring about much change in the environment. As A. Don et al states, "No direct real-world equivalent to the carbon coin exists. Current economic incentives include carbon credits and trading schemes, but these are often limited by market design, verification challenges, and fluctuating value"(A. Don et al. 30).

Legal Pathways to Climate Justice

The most effective legal strategies combine litigation, policy reform, and inclusive governance to hold powerful actors accountable and protect vulnerable communities. Robinson formulates the Ministry as a soft legal body which is formed to combat climate issues. However, as the plot of the novel progresses, Robinson states that the ministry earnestly attempts to deliver climate justice to those who are involved in ecocide [killing the environment for their personal interests]. The ministry draws up a set of laws and gets the central bank's approval for their carbon coin which becomes a huge watershed moment. Most countries are forced to sequester their carbon emission or suppress fossil fuel usage moving towards greener energy options. However, 'The rentier class' would never agree to the dictates of a small organization as they are the ones who hold the power. Robinson writes, "...the rentier class is not suffering, and in fact is happily engaged in eating up everything. A parasite killing its host... the rentier class needs to be executed" (Robinson, 319) Therefore, the ministry is forced to not only work their way top-down but also bottom-up. Apart from devising laws for rich countries pertaining to their consumerism the ministry also believes that certain challenges will not be resolved till the ministry intervenes through the 'backdoor'. Through their 'black wing' or 'black ops' Robinson subtly exposes how the ministry has worked with certain groups like the children of Kali or other organizations in creating a kind of terror pertaining to the use of fossil fuels. Robinson portrays a shift in public perception of violent environmental activism as the climate crisis worsens:

Many attacks now were on carbon burners, especially those rich enough to burn it conspicuously. Car races and private jets. Yachts and container ships. So now the terrorists involved were perhaps saboteurs, or even resistance warriors, fighting for the Earth itself. Gaia's Shock Troops, Children of Kali, Defenders of Mother Earth, Earth First, and so on. (Robinson 368)

Though not explicitly cited in the novel, Robinson makes subtle references to eco-terror attacks which have the semblance of a proper terrorist activity but towards the climax of the novel one understands that the ministry was surreptitiously involved in such acts in order to make the rentier class see the repercussions of their actions. Wells in his book *The Uninhabitable Earth* states, "... terrorism flaming out from the tinder of failed states, that future is here, at least in preview, already. Now we just wait for the storms."(Wells 190). Wells states that the current state of global politics and societal dynamics suggest that the future is marked by instability, therefore the rise of violence and instability in regions where governments are unable to maintain control, often exacerbated by resource scarcity and climate-

related issues. However, Robinson remarks that certain sanctions for climate related issues can be gained only if the governments or the so called 'Rentier Class' are forced to think otherwise. It becomes imperative that people use greener and cleaner alternatives as against the regular fossil fuels thus breaking the chain of fossil fuel production and consumption. As Charles Beauregard in his paper "Climate justice and rights-based litigation in a post-Paris world." notes that climate litigation has the potential to force greater government action on climate change, but must be combined with other forms of climate action to better advance justice. (Charles Beauregard et al 652). Legal pathways to climate justice are multifaceted, involving litigation, international agreements, restorative justice, and inclusive policy reforms. Success depends on strong enforcement, global cooperation, and centering the needs of the most affected communities. These approaches align with the Sustainable Development Goals by promoting equity, accountability, and a just transition to sustainability.

Climate Refugee Crisis as a Global Fault line

The novel *The Ministry for the Future* foregrounds climate disasters- particularly heat waves, droughts, floods - as primary triggers for mass displacement. For instance Robinson exposes how the heat wave in India creates harrowing effects of the climate crisis and how the place is rendered inhabitable for human beings. This fictional scenario reflects real-world climate projections, where temperature increases and extreme weather events disproportionately affect the Global South. Robinson critiques the inadequacies in government policies and International laws by portraying refugees not as victims deserving protection but as burdens or intruders. While depicting the treatment of refugees, Robinson illustrates:

The whole thing was dehumanizing, and of course this was not the first time it had happened, refugees are by definition less than human, having lost their homes, but perhaps it was some kind of last straw. Something about being in Switzerland, which had a reputation as a clean, orderly lawful place, and then being treated like animals, made us mad.(Robinson 143).

The novel highlights how the refugees are often managed through military interventions, subjected to harsh containment zones or camps often lacking facilities for all- underscoring the inhumane and unjust treatment of those forcibly displaced by environmental collapse. The refugee crisis is increasingly recognized as a major global fault line, with climate change driving mass displacement through extreme weather, sea-level rise, and resource scarcity. Current international laws and policies are inadequate to protect those forced to migrate by climate impacts, leaving millions vulnerable to inhumane treatment and legal limbo.

David Wallace Wells in his book *The Uninhabitable Earth* deliberates on the case of climate refugee crises as a conflict catalyst. Wells states that the west is of the opinion that the refugee crisis is an end result of war or civil unrest in a country. But Wells claims that most refugee crises arise from climate change issues, for instance the drought in Syria lead to

intensifying food shortages, economic hardship and mass migration from rural areas to overcrowded cities. In Wells' view climate change didn't just worsen the Syrian crisis in fact it triggered civil war. Moreover, the belief that wealthier countries would not be affected by such a crisis is merely a fallacy. Wells' highlights that America, considered to be a super power, could face a haunting forecast of 13 million Americans displaced by the year 2100 due to rising sea levels. This means that Americans will face massive internal migration especially from low lying areas. Hence, Wells' claims that the refugee crisis is a "failed-state" problem by citing the devastating effects of Hurricane Harvey[60,000 displaced] and Hurricane Irma [7 million evacuated] as to have already produced climate migrants of their own. Looking back one can understand that climate catastrophe doesn't respect national wealth. As warming intensifies climate migration will not be a cross-border issue but a domestic upheaval-even in places who assume to be immune to resource instability. Wells' ideas on climate migration are not just presumed thoughts, it is backed by factual data and the case will only intensify with time. The most disheartening thing of climate catastrophe as Wells' points out is the injustice meted out to poor countries who had no role to play in climate change. Wells states:

The first country to industrialize and produce greenhouse gas on a grand scale, the United Kingdom, is expected to suffer least from climate change. The world's slowest-developing countries, producing the least emissions, will be among those hardest hit; the climate system of the Democratic Republic of Congo, one of the world's poorest countries, is scheduled to be especially profoundly perturbed.(Wells 133)

Climate refugees lack formal recognition under the 1951 Refugee Convention, which only covers persecution-based displacement, not environmental causes. Because of the lack of international laws and recognition for immigration based on the climate crisis countries like Congo suffer from climate injustice which is one of the major setbacks for poor nations. Such countries require the help and support of the United Nations to help combat and overcome the climate crisis. In such scenarios governments' can align International migration and climate policies with SDG framework, especially SDG 13 and 10 to help protect displaced populations. Planning and monitoring displaced refugees will help them resume back to normal life. In order to highlight the dire need of global refugees, Robinson in his novel underscores the refugee crises as the problem requires urgent laws and sanctions for them. Robinson proposes the idea of Nansen passports which gave refugees the freedom to move wherever they wanted. However, many countries refused to accept the concept. Robinson notes, "Nansen passports, which gave refugees the right to go wherever they wanted to, free passage anywhere." (Robinson 396) . The protagonist and Head of Ministry Mary Murphy, resurrects the concept of Nansen passports and in due course the Ministry is able to sanction laws that help refugees and their extended families to choose a country or return to their homeland with the much required relief and provisions to make life better for themselves.

Voicing the Voiceless: Legal Personhood as Speculative Governance

In the face of escalating climate change and ecological collapse, traditional legal systems based on anthropocentric assumptions have failed in protecting the natural world. Therefore, it has led to the growing demands for legal frameworks that recognize and uphold the rights of nature, giving voice to the voiceless. The concept of legal personhood for nature emerges as a transformative legal and philosophical shift that seeks to grant ecosystems, species and natural entities rights akin to that of humans. Drawing from theories like Gaia, and other ecological theories, Robinson presents the Half-Earth concept as the only way to protect the earth. The Half-earth concept proposes the idea that half the planet be set aside to restore biodiversity thereby striking an ecological balance between human and non-human entities. Moreover, this theory postulates the idea that Earth has the ability to heal itself if left undisturbed. Banking on this point, Robinson's narrative follows the concept of advocating legal rights to the non-human world by defending and redefining natural corridors for plants, animals, rivers and lakes. The non-human entities are treated as humans with legal rights and the ministry goes to the extent of passing laws to benefit them. Robinson notes, "...now these have been connected up by habitat corridors, and the animals living on these emptier lands are protected and nourished as needed." (Robinson 501) Legal personhood is not about equating non-human entities with humans but it is more about recognizing their right to exist and flourish. Granting legal personhood is not a new concept but an indigenous view which treats ecology as a near human. The concept gained momentum after the landmark decision by New Zealand awarding personhood status to Whanganui river in 2017 and India recognizing Ganga and Yamuna rivers as legal persons.

In the novel *The Ministry for the Future*, Robinson incorporates the idea to extend justice to all being on planet earth and also presents the Half-Earth concept propounded by Edward O. Wilson, which postulates the theory that half the earth must belong to the non-human race and the rest half to human in order to strike a balance between the two entities. Wilson states that in order to stave off mass extinction of species including human beings the human race must move swiftly to preserve the biodiversity of the planet. The biosphere is essential to the survival of the human race and to preserve biodiversity humans must take actions to sanction half the surface of the earth to flora and fauna. David Wallace -Wells in his book *The Uninhabitable Earth* states that the human kind believes that they would be able to protect the ecosystem and endangered species, "... we should be able to protect the dwindling population of an endangered species, and preserve their habitat, should we choose to." (Wells 160) The fallacy that human kind would be able to rebuild an ecosystem if one chooses to is an anthropocentric view and it does not guarantee the conservation or preservation of wildlife. Wells states that conservation and sustainability are matters of intention and policy alone. Wallace-Wells states, "we might

AND ENGINEERING TRENDS

adapt to the pressures of a changing climate, letting nature run its rehabilitative course on half the planet and sequestering humanity in the remaining, habitable half of the world.”(Wells) implying the fact humans need to take actions and sanction laws for permanent safeguarding of natural corridors. As T. Hiss et al. states, the Half-Earth theory suggests that up to 50% of Earth’s land and water should be conserved as living space for other species, not to exclude people, but to create shared spaces where human impact is minimized. The goal is to preserve about 90% of the planet’s biodiversity by doing so. (Hiss et al.)

The ministry is not just an advocate for the future generations of humans, it is rather a legal advocate of future human and non-human entities blurring the lines between ethical rights and legal rights. By imagining natural systems as rights-bearing subjects, the novel dramatizes a shift in legal imagination necessary for planetary survival. Robinson writes, “ This new Subsidiary Body is furthermore charged with defending all living creatures present and future who cannot speak for themselves, by promoting their legal standing and physical protection.” (Robinson 16). Legal personhood for nature helps redefine the legal landscape of environmental governance, it challenges anthropocentric bias of modern law and introduces a post-humanist perspective of ecological interdependence. Wells’ states that “we live today somehow outside or beyond or at the very least defended against nature, not inescapably within and literally overwhelmed by it;” (Wells 28). Wallace-Wells argues that we are not outside nature but “inescapably within and literally overwhelmed by it”—a posthumanist standpoint that dissolves boundaries between humans and the environment. Jade-Ann Reeves argues in her paper that while granting personhood to nature is seen as a step away from anthropocentrism, critics note that unless it fundamentally redefines legal personhood, it may still operate within human-centered frameworks.(Jade-Ann Reeves et al. 474). If legal personhood is awarded to non-human entities then again it requires a human representation in the court of law. In such scenarios it is the ministry that can step in to represent their contribution and human interdependence on sentient beings. However, apart from the legal framework the human race too must understand and acknowledge the focal point of concern as represented in the novel that in order to save the planet from climate change and other environmental issues we must work hand in glove with nature. Humans must recognize that each is interdependent on the other for survival.

II.CONCLUSION

Climate change is an environmental concern that requires immediate action. The Sustainable Development Goals have been instrumental in bringing about change in many aspects of human life. However, the change that is brought about is still not enough as complete human awareness pertaining to usage of plastic or burning of fossil fuel is still comparatively low. Fossil fuel industries continue carbon emission owing to their unchecked power and wealth. Containing greenhouse gas emission is a strenuous and a continued effort. Laws and

sanctions against many industries are yet to materialize. However, literary narratives have been trying to warn humans through their stories about the possible collapse of the planet if life moves on unchecked. Though there has been some impact brought about by storytelling but still it is miniscule compared to the world at large. Wells explores the power and limitations of storytelling in the climate crisis within the chapter The Climate Kaleidoscope. Wells writes, “...at least I hope it does. But that is another meaning of the climate kaleidoscope. You can choose your metaphor. You can’t choose the planet, which is the only one any of us will ever call home.” (Wells 225). Writers are portrayed as navigators through a kaleidoscope of distortion—grappling with whether to present optimistic futures, dwell on worst-case scenarios, or avoid politicization. Moreover, he reflects on how the media, authors, and public discourse have grappled with representing climate change in compelling narratives. Wells observes that despite terrifying facts and vivid examples, climate change often fails to grip public imagination.

In speculative and Policy driven works like The Ministry for the Future, Robinson presents concepts that are not merely theoretical but also positioned as a crucial strategy for planet survival. Novels like The Ministry for the Future help visualize the growing demand to protect and conserve our planet and the pressing need to chart out solutions and policies to resolve global ecological problems. The problems of the human race can be resolved only if humans acknowledge the combined efforts of humans and non-humans alike in the functioning of the planet. As the novel comes to a close Mary Murphy, head of ministry, contemplates on the fact that if all work in unison and harmony then humans can overcome any problem except extinction. She contemplates, “That there is no other home for us than here. That we will cope no matter how stupid things get. That all couples are odd couples. That the only catastrophe that can’t be undone is extinction. That we can make a good place. That people can take their fate in their hands. That there is no such thing as fate. (Robinson 563). Since the advent of human evolution, individuals and societies have continually encountered challenges in diverse forms. The notion of perfection remains an abstract ideal rather than a tangible reality, as human existence is inherently marked by complexity, imperfection, and adaptation. But in spite of the imperfections humankind nonetheless makes an attempt to save what is important but only that humans must learn to acknowledge that the world does not belong only to humans but it is also home to numerous non-human entities who too have a legal right on this land.

Through his work, Robinson makes an earnest attempt to chart out solutions to the current problems of the world on the lines of the Sustainable Development Goals framework. But however, the solutions presented in the novel are highly speculative and lack real-world applications. Though ideas of geoengineering and climate refugee management seem promising, it depends on the power of the nation's states to put such solutions to practice. The novel serves as a speculative blueprint for radical hope and systematic transformation. It

underscores the necessity to reimagine governance structures, embracing interdisciplinary interventions and centering justice-both intergenerational and global- in climate discourses. Speculative fiction becomes a powerful cognitive tool-not merely mirroring the world, but also shaping the futures as humans dare to imagine and strive to achieve.

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