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# A Portrayal of Ecological Perspectives on Climate Change in Indian Cinema

Thejas Gigy Thomas, Prasantha Kumar N.S.

**Abstract:** *With fires raging throughout the Amazon forest and the spectre of climate change staring in the face of humanity, the world's most pressing issue today is mitigating the threat posed to the environment by man-made disasters. It is no surprise then that at global forums, world leaders are desperately trying to work together to devise methods of preserving biodiversity and mitigating environmental degradation. This paper looks at climate change and natural disasters in the Indian context by analysing a Malayalam film, Ottaal (The Trap), an adaptation of Vanka, one of the timeless works of Russian writer Anton Chekhov. The 18th century story has been retold by setting it in a small village in present-day Kerala. Ottaal is a realistic portrayal of the suffering of individuals who face the adverse effects of climate change. The film presents a snapshot of the Earth's climate crisis with global temperatures rising at an alarming pace, and glaciers disappearing quicker than ever. The paper also explores India's role in preventing the grim future that the human race faces. A country with a third of the world's population, India is an industrialised nation that accounts for two-thirds of global greenhouse gas emissions. The resulting global warming has troubled nature's rhythm, causing floods, droughts, extensive hunger, displacement, epidemics, and death. These negative impacts are borne mostly by vulnerable groups like the poor, Adivasis, Dalits, and women. This cruel reality exposes and invites us to perceive climate change politics as a social justice issue. The distinctive geographic location of India also makes it extremely susceptible to natural disasters and climate change. Temperature and rainfall patterns have been erratic in the recent past, resulting in natural calamities. The paper also defines vulnerable regions and communities, and proposes fresh policy initiatives that could assist in reducing the impacts and after-effects of disasters.*

**Keywords:** *climate change, environment, future, global warming, natural disasters, problem.*

## I. INTRODUCTION

Over the past few years, literature-physical environment relationship studies have appeared as a field of research known as ecocriticism. Ecology is now one of the primary subjects in global forums as the world is struggling to limit the damaging environmental impacts of pollution. As the term indicates, ecocriticism includes analyzing the works of writers, scientists and poets in the context of environmental and nature problems (Garrard, 2004). Literary and cultural scientists are working through the junction of literature,

culture, and the physical environment to investigate the worldwide ecological crisis. Some well-known critics are Lawrence Buell, Cheryl Glot Felty, Harold From, Simon C. Estok, William Howrah, William Ruecket, Micheal P. Branch, Glen A. Love, and Sullen Campbell among others (Dr. Krishnasamy, pp 55-56).

## II. REVIEW OF LITERATURE

Humans are subjected to climate change by altering weather trends through modifications in water, air, environment, agriculture, livelihoods, infrastructure, food quality and quantity. Climate impacts the quality of water, food, air, illness, physical comfort, and human health. (Mall, 2011). It is probable that any climate change will impact human health. In India itself, the average annual temperature has risen over the past couple of years, and future climate change scenarios predict that disastrous events will demonstrate a rise in frequency and intensity that will have an important effect on human lives in terms of epidemic spread followed with casualty rates (Anupama, 2014). The inverse consequences of climate change are the result of adverse social and financial impacts arising from modified labor ability, impacts on person, loss of livelihoods, family and national budgets, and conflict conditions associated with environmental stress (Das, et.al, 2007). Climate change can have health impacts in a variety of respects; some of which are immediate causes of risks such as storms and floods, heat waves, while others have a more complicated pathway leading to ecosystem disruption, migration and displacement, enhanced spread of infectious diseases and disputes resulting from depleted resources (Mahato, 2014). India is the most vulnerable nation to bear the burden of climate change and globally acknowledged worldwide warming (Trenberth, 2008). The vulnerability arises from their huge population density, unusual geographical place, floodplain dominance, low elevation of sea level, elevated rates of poverty, and overwhelming reliance on nature and resources (Narain, et.al, 2009). India has a history of severe climate occurrences, leading to the loss of millions of life and destruction of infrastructure in the country. Fluctuations in rainfall pattern, rising Himalayan snowmelt, and increasing temperature have led in crop damage and agricultural failure. Such climate change destroys the livelihoods, investments, and future of today's generation. Climate change and global warming also lead to village destruction and the displacement of large numbers of people as they cause riverbank erosion and sea-level rise.

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Governments and the resources and attempts of people to mitigate disasters and rehabilitate those impacted are rendered pointless as these risks once again strike back (Giri, 2018). Global warming and climate change are threatening attempts to create communities and safeguard the future of people.

The adverse effects of climate change and global warming are already recognized by India. Naturally, summer is getting hotter, the monsoon is irregular with premature rainfall, heavy rainfall over a brief period of time causes water-logging and landslides, enhanced river flow leads to flooding, enhanced frequency, ferocity and recurrence of flooding causes crop damage, frequent occurrence of flash flooding, droughts and inevitable intrusions of salinity happen in coastal regions nowadays (Kapri, 2016).

### III. THE MOST FREQUENT CATASTROPHE OF ALL

Water is a precondition for life's survival, but it is also a resource that is rapidly depleting. Without water, our fundamental necessities such as washing and drinking would be hard to take care of. Indeed, the absence of water will lead to potential chaos. The water cycle helped to keep the amount of water on the earth's surface. Approximately 50 liters of water per day per individual is said to be required to maintain a good lifestyle. There are places where individuals do not get enough water to satisfy their fundamental requirements and regions suffering from drought due to insufficient rainfall. Floods and droughts are two opposite ideas that today need to be studied in depth.

Flooding is a prevalent phenomenon in India and the single most prevalent catastrophe experienced in the nation by several areas. Weather and precipitation vagaries in some areas of the nation cause calamitous floods and serious drought in other areas. Development operations are being carried out on the floodplains with fast demographic growth, leading in catastrophic effects over the years on the natural setting. Due to the variable distribution of rainfall, the regions that are not usually susceptible to flooding also nowadays experience serious flooding. Flooding is primarily triggered by river bank breaches and the failure to control the surging water that flows from the upper catchments after heavy rainfall. Flooding is illustrated by river bed erosion and silting and ultimately leads to depletion of river bed channels carrying ability. Earthquakes and landslides are the consequence of floodplain encroachment and unplanned urban growth (Mukherjee, 2017). They lead to modifications in the course of the river, obstruction of the inflow, flooding of the primary river and its tributaries, and obstacles to the impacts of the tide. Areas most affected by flooding are the coastal states of West Bengal, Odisha, Andhra Pradesh, and Tamil Nadu. These states are also affected by cyclones, which cause serious loss of life and property damage (Das, et.al, 2007). Such disasters generate a feeling of insecurity and fear in people's minds as their after-effects include disease spread, absence of equipment, absence of drugs, and destruction of living areas.

Drought results from the absence of precipitation over a lengthy period of time, perhaps for a season or even several years. It is a temporary departure from the mean of the circumstances of precipitation and humidity, diverging from

its scarcity and seasonal aridity. It is a dragging phenomenon and could last for months and even years unlike other natural risks. Drought disturbs nearly all climatic areas and each year more than half of the Earth is shockingly susceptible to droughts. Droughts normally happen in areas where rainfall and runoff are more vulnerable. The conditions of a drought can be divided into variables such as meteorological, hydrological and agricultural variables, depending on the probable effect (Das, et.al, 2007). The geographic magnitude of drought exceeds any other natural hazard and is not limited to a basin or political borders. Lifelong drought contributes to land, plant and animal habitat degradation, as well as social disturbance.

### IV. INDIA'S CLIMATE IN TURMOIL

Recent study demonstrates that due to its varied terrain, climate change will impact significant regions in South Asia, particularly India. Climate change will also have a massive impact on this region as nations weaken natural resources rapidly and destroy the environment through 'industrialization, urbanization, and financial development.' The environmental and socio-economic challenge in India is causing consternation as natural resources are depleting and water and air quality is deteriorating due to the increase in pollutants in the atmosphere. Climate change's negative effects will be borne by the coastal ecosystems of the country and will impact agricultural productivity and biodiversity. As witnessed in the early 2013 Uttarakhand landslides, 2015 Chennai floods, followed with the 2017 Chennai cyclone, the 2018 Kerala floods, and the recent 2019 Assam floods suburbs are also likely to become more susceptible due to such natural hazards. Weather events have risen in intensity and frequency, such as rainfall, heat waves, and dry spells. Such calamities' negative effects include severe hunger, disease vulnerability, loss of revenue and livelihoods. World Bank data show that a 2°C rise in the average temperature of the world in the subsequent centuries will only make the monsoon of India more uncertain and erratic. The change in rain trends across India is anticipated to leave a large number of states under water and other regions even for drinking without adequate water (Nagdeve, 2007).

It's more than 60% of India's crop area is fed by rain, resulting in climatic changes in rainfall pattern. It has been predicted that temperatures will rise by around 2° C-2.5° C relative to pre-industrial levels by the 2050s, water for agricultural production in the Indus, Ganges and Brahmaputra river basins will continue to decline and could impact for more than 65 million people on food adequacy (Mahato, 2014). It is also anticipated that a much hotter climate will slow down the rate of poverty reduction. While climate change will affect the lifestyle of everyone in distinct areas, the deprived will always be the most affected as they depend mainly on rain-based agricultural income and have no or minimal funds to maintain their livelihood.

A 2°C increase by 2040s will strike crop output in South Asia and decrease the crop by another 12%, needing more imports to satisfy domestic requirements. Similarly, reducing availability of food would lead to comprehensive health

problems, particularly among females and kids. Glacier melting and snow loss pose a significant threat to India's reliable water resources, particularly the Ganges, the Indus, and the Brahmaputra, which are naturally dependent on snow and glacial water (Mahato, 2014). In the end, this leaves them all the more susceptible to the adverse effects of global warming and increases the probability of flooding in low-lying regions.

Climate change has already impacted economic and environmental resources. Developing countries are likely to face the following hazards in the years ahead:

Table- I: Future Hazards

Environmental concerns	Damaged resources and regions
Glacial melt position	Water Resources
Change in quality and amount of water	Industry and energy
Escalation of sea level	Human health risk
Increase floods, droughts, storms, waves of heat	Coastal control and management
Different seasons and areas in growth	Treaties
Contrast in rainfall patterns	Disaster reaction & recovery plans

Currently, India's far-reaching responsibility is to provide shelter and security for climate change victims who grow in numbers every day due to the loss of their homes, land, and settlements. We could argue that, due to such extreme climatic conditions, the nation itself may be the biggest number of people who permanently lose their homes. Many slum dwellers living close to the metropolitan areas have been disclosed to be the real perpetrators of the erosion of the riverbank.

## V. THE EXISTENCE OF ECOCRITICISM AND ITS RELAVENCE

Ecocriticism is almost a fresh stage of literary criticism research. This can be seen as it is in the world of today. The theory of this study has some interesting goal on focusing on specific assessment topics. We believe this is what occurs when a revolution tries to assess its own existence, which ultimately includes literature and human nature. Modern critics are both concerned with assessing how literature is included in the problem; how nature is portrayed in novels reflects the hard link between man and the natural environment, and as part of the response, the text could be a instrument to assist individuals taking care of the environment. Climate change is now one of the world's biggest problems as it affects people, and it is a very horrible and ongoing condition. The harmful effects of climate change actively or passively affect almost every country in the globe. India is not vulnerable to adversity to climate change. Instead, owing to its geographic place, demographic density, analphabetism, alternating seasonal trends, low-lying landscape, poverty and bad infrastructure, the nation is at high danger of natural disasters.

## VI. WHEN CINEMA MIRRORS REALITY

Ecology is now headlining key discussions across global forums as the destruction of the ecosystem is an emerging reality. The award-winning director of Malayalam Jayaraj highlighted the danger presented to ecology by adapting for the large screen a short story by Anton Chekov, Vanka. His film *Ottaal* (The Trap) brilliantly depicts how nature is intrinsically woven into our lives. The film makes a poignant comment on the beautiful nature that we have been blessed with and how we destroy it through our selfish deeds. The film won the National Award for Best Environmental Film and Best Adapted Screenplay in 2015 to present this reality. The film was chosen as the winner of the Crystal Bear for Best Film in the Generation K plus section by the Children's Jury at the Berlin Film Festival 2016. At the 20th International Film Festival in Kerala (IFFK), *Ottaal*'s awards also include the Suvarna Chakram (Golden Crow Pheasant). The movie was feted for "its strong cinematic language, interweaving local and planetary concerns, humankind's relationship to nature and nurture, and child human rights, all grounded in a deep, honest connection to culture and place." (Sidhardhan, Times of India, 2017)

Kuttappai (Ashanth K. Sha) is an eight-year-old whose parents ended their life as they were unable to repay a huge debt and is raised in Kuttanad (in the backwaters of Kerala) by his Vallyappachayi or grandpa (Kumarakom Vasudevan, a lower-class real-life fisherman). They spend time fishing together and raising ducks. The most touching moments of this film is not great and dramatic, but flow out of the grandson-grandfather connection. There are various instances in the film where the director points out to the destruction of nature as a result of manmade development. In one scene, the kid points to a nest and provides the public a lesson on urbanisation and bird migration. Kuttappai's grandpa is unable to reply when he wishes to understand what happens to these little birds without parents. The grandpa (Vallyappachayi) tells Kuttappai that his parents are stars and are watching over him from above. Jayraj carries many messages from Kuttappai's life, as a curious and sensitive kid, asking questions about everything he sees around him, giving his share of food to street dogs, assisting his best friend Tinku by handing over tadpoles to college, and showing the lotuses his grandpa makes as a necklace for the kids. Kuttappai loves going to school but Vallyappachayi wants to send him for education to the city and can't figure out how to do that.

When Vallyappachayi falls sick, some agreements have to be made about Kuttappai and his life. Vallappachayi inquires Tinku's family to look after the boy, and Tinku's mother begins to wonder whether Kuttappai would be a good help at their respective houseboat and home stay business plans. Tinku's father (who notices the 'duck boy' as an unsuitable friend for his son) refuses to employ him on the grounds that it could be treated as child labour. The boy is handed over to Mesthiri (Shine Tom Chacko), a rich poultry boss who thinks kids like Kuttappai should work rather than pursue dreams of being educated when all doors are shut. The boy is later sent to work in a fireworks factory in the neighboring state of Tamil Nadu (Netflix).

Human life is marked by a special consciousness. In the words of Arnold Toynbee, "human life and its setting are mysteries" (Maguire, 2006).



We are aware that life is a delicate, perilously perched phenomenon on the surface of the earth. Weight-wise, it is almost insignificant as it is less than a billionth of the weight of the planet. It is, of course, not unimportant since the name we give to this miracle is life.

The effort to respond wisely to this precarious and special mystery and its terrestrial matrix in the universe is called ethics. Some manifestations of this life event are so precious that we reach for the highest encomium in our language and speak of the "sacredness" and the "sanctity" of this life. The movie also serves as a reminder of how human beings belong to nature and are at their happiest in union with creation. The grandfather and the small boy live in complete sync with nature and find joy in paddling through the river in their boat and feeding ducks. Director Jayaraj presents nature at its purest and shows us how life can be fulfilling and happy when we share a symbiotic relationship with nature. We need to move from the mindset of reductionism and the objective of maximising short-term profit, where the earth is a collection of things to be consumed (nature's capital), to a world with a dynamic and material engagement with place and a collective relationship with life.

### VII. GRIM PORTENTS FOR THE FUTURE

Climate change will have a tremendous effect on India, where 1/3 of the soil is susceptible to flooding and droughts, according to latest expert findings. In Odisha, flooding will result in a drop in rice yields of at least 12% and in Andhra Pradesh, dry land farmers may see their revenues dropping by 20%. (The World Bank). Here are a few of the comments:

#### 1. Odisha set to be under water

India's flood-affected regions have nearly doubled over the past 50 years (from 6% to 12%), despite significant public expenditure on flood-protection programs. The research says flooding in India will increase more dramatically, particularly in coastal areas such as Odisha.

Steps to remain secure:

1. Promoting planning and zoning of land use.
2. Making farmland flood resilient.
3. Strict flood detection and forecasting systems.

#### 2. Dry spell in Andhra Pradesh

The harvest of all significant crops such as rice, groundnut and jowar is anticipated to decrease drastically in the barren areas of Andhra Pradesh owing to climate change. The temperature is anticipated to increase significantly across the region. Small agricultural revenue could be reduced by around 20% -30%. Agriculture will no longer be able to support an enormous population on tiny rain fed farms as it has been practiced nowadays.

Remedial action:

1. Applying subsidies to restore a change to plants that are more environmentally appropriate.
2. Promoting climate-resilient farming methods and patterns of cropping.
3. Better management of water.

Water, health and hygiene are most affected during droughts and floods. Ensuring that these essential commodities and services are available and preventing the spread of epidemics is essential. Large areas of stagnant water are more probable to spread disease by mosquitoes and other waterborne

diseases. An improved prediction system, early warning messenger software, and the correct preparedness measures helped to decrease the amount of deaths and livelihood losses. Mock exercises should be organized frequently to raise awareness about security measures such as locking up homes, putting pets in a safe place, and carrying clothes and significant private records (Giri, 2008). Various means of communication have now proved essential in achieving a big population. In order to enhance communication and service delivery, news networks spread data about warnings and alerts, and satellite phones are handed over to officials in vulnerable districts.

### VIII. AVOIDING AN ENVIRONMENTAL APOCALYPSE CONCLUSION

The primary issues facing humanity are peace preservation, poverty eradication and the protection of our environment. The search for industrial and technological development in the world has brought disharmony and failed to attain equal wealth distribution among individuals (Garrard, 2004). But those seeking advancement and signs of hope have reason to cheer as infant mortality rates declines, human life expectancy increases, normal ratio of adults reading and writing increases by the day, the percentage of students going to university increases, and food production grows quicker than population growth. It is also anticipated that children who are born today are also expected to live a lot longer and be better educated than their parents. In several parts of the world, the current generation is likely to attain a higher standard of living. Therefore, it is time to safeguard the world from manmade disasters and create it a safe place to live in for future generations. Reviewing our activities and increasing our attempts to save the world from imminent doom is crucial.

### IX. CIVIL SOCIETY'S TIME TO RISE TO THE CHALLENGE

It's intriguing that people often ignore these challenges because they feel that one person in this globe can't make a big difference. However, the action of each individual goes a long way in bringing about the change in culture that is required. As the renowned Confucian philosopher Xunzi once said, "Without the streams there can be no river or ocean." (Li Bingbing, 2016, UNEP). The involvement and individual action of each civilian will achieve the required objective of defending the earth. Carbon dioxide is the worst enemy of the climate. When we burn petroleum, carbon, and other fossil fuels that are used to operate our homes, vehicles, and mobile devices, it is discharged. We can contribute to maintaining a check on global warming and climate change by using such non-renewable resources in a restricted way. Here are some efficient methods we can create a major social shift:

1. Buying food and other products with packaging that can be reused or recycled.
2. Ensure that sectors comply with public pollution control laws.
3. Safe disposal of toxic waste.
4. Using products that are environmentally friendly and biodegradable instead of plastic products.

5. Replacement of incandescent bulbs with compact fluorescent bulbs.
6. By opening windows and enjoying the natural air, we use renewable energy sources to power our homes and reduce the use of air conditioning systems.
7. Ensure that companies frequently track emissions and take action to decrease air pollution.
8. Establishing green spaces by planting in our homes more trees and plants in our environments.
9. Following solid waste management 3R's: reducing, reusing and recycling.
10. Organic waste composting and not littering government areas.

For sustenance, we rely on the biosphere, but if we all eat the resources of the earth at a fast pace, we would leave nothing behind for our future generations. We removed our forests to provide ourselves with better comforts. We polluted rivers and seas in the name of industrial growth and development. We have played our part in increasing the amount of carbon dioxide in the atmosphere, leading to the draining of global heating and ozone layers that protect the planet from cosmic radiation (Mukerjee, 2017). Developed countries must also assume greater accountability for decreasing ecological degradation as it has more adverse effects on third world and developing nations.

Despite the government's several measures, global warming continues to rise every day. The absence of adequate funds and access to technology could be blamed for this. In order to survive the impacts of climate change and prevent disasters, the nation requires to have stronger technical knowledge, capacity building, and networking connections across all sections of society. In India, the brunt of disasters is always carried by the poor and the marginalized (Kapri, 2016). Unlike previous attempts, it won't be enough to just rescue impacted individuals now. The need for the hour is technology that can predict disasters correctly and warn the government to take action to mitigate natural disasters. Only through the active involvement of government and citizens can this goal be achieved. A definitive change is needed and needs to be implemented quickly to improve our nation and environment.

## X. CONCLUSION

Disasters have a major effect on people's life and health. The World Health Organization (WHO) says natural disasters claim around 90,000 lives each year and impact nearly 160 million individuals around the world. WHO intends to broaden the focus of health emergency and disaster risk management "from reaction and recovery to a more proactive strategy that emphasizes prevention and mitigation, and community and nation capacity building to deliver timely and efficient reaction and recovery" (The Hindu, Press Reader, 2017). It is vital to prepare for disaster risk reduction. The Sendai Risk Reduction Framework 2015-2030, approved by the UN General Assembly and adopted by 187 nations at the Third World Conference on Disaster Risk Reduction in Sendai, Japan, places health at the center of a worldwide disaster risk reduction strategy (The Hindu, Press Reader, 2017). The protocols for a catastrophe scenario are provided by this framework. Although India is a signatory to the framework, on the ground little has altered.

Natural and man-made disasters constantly remind us of the need to have a cogent policy with respect to climate

change and environmental sustainability. From India's point of view, a stop has to be put on development with a heavy carbon footprint as it leads to dangerous levels of air pollution, extreme weather events, heat waves, water scarcity and disproportionately affects vulnerable groups like the poor. India needs to use the best data available to limit the temperature rise and take concerted action on reducing greenhouse gas emissions. The country needs to explore financing mechanisms for bringing about climate change resilience and ensuring that there is effective policy implementation, including improved coordination among different levels of government. This implies building enhanced technical systems and weather forecasting mechanisms, robust modelling of catchment water flows with simulations of various climatic situations, and abiding by global safety standards and building codes. Creating buffers, flexibility and adaptability must be prioritised by the nation and it involves reviewing the safety requirements of dams and canals, establishing fresh intermediate storage facilities, and introducing dynamic reservoir management. Lastly, the nation must strive to decrease the vulnerability of the poor who pay a disproportionately greater price in the face of calamities.

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## A Portrayal of Ecological Perspectives on Climate Change in Indian Cinema

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