

Ecological Challenges in the 21st Century - Social Challenges of the Digitized World

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SDG Contribution (SDG Number/s with reason/s): **SDG 13; Climate Action;** take urgent action to combat climate change and its impact. It integrates climate change measures into national policies, strategies and planning. Improves education, awareness raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning

Abstract: *Digital technology has a notable impact on the environment we live in. While it may be hard to imagine life without the World Wide Web, cashless payments, e-commerce, cloud computing, the significant environmental impact from digitalization is often overlooked and underestimated. Digital technologies have been in the front and centre of revamping everything in our lives and perhaps scaled more rapidly than any other innovation in all of human history. Several well documented studies showed that digitalization has created significant economic growth and transformed how industries operate. What is more, digital tech has played a vital role in fighting the coronavirus pandemic. Technology leaders recognize that despite its many benefits, there is another side to digitalization. Digitalization is responsible for environmental pollution and degradation across the world.*

Keywords: Digital technology.

I. INTRODUCTION

The digital technology involves the use of electronic tools, devices and resources the make, store or generate data. Digitalization is thus the growing of digital technology. The term digitalization refers to the integration of technologies into everyday life by the digitization of everything that can be digitized. Digital technology has transformed the way people communicate with one another. This research is based from the articles of Dr Vandana Shiva one of the very well known personality on the internet as well real life. The articles published here are from various online platforms. Dr Vandana Shiva who is born on 5th November 1952. She is an Indian scholar, environmental activist, food sovereignty advocate, ecofeminist and anti-globalisation author. She is often compared with Gandh ji as also referred to as “Gandhi of grain” for her activism associated with anti-GMO movement. Dr Shiva shares her various views on how agroecology is effective solution not just to climate change but also to a host of other ecological crises humanity faces, such as water scarcity, land degradation and biodiversity loss. She has published many such articles raising her voice on these such issues. Shiva is one of the leaders and board members of the International Forum on Globalization (with Jerry Mander Ralph Nader and Helena Norberg-Hodge, and a figure of the anti-globalisation movement. She has argued in favour of many traditional practices, as in her interview in the book Vedic Ecology (by Ranchor Prime). She is a member of the scientific committee of the Fundacion IDEAS Spain’s Socialist Party’s-think tank. She is also a member of the International Organization for a Participatory Society. Now talking about her background Dr Shiva was born in Dehradun. Her father was a conservator of forests and as for her mother was a farmer with a love for nature. She was educated at St. Mary’s Convent High School in Nainital, and at the Convent of Jesus and Mary Dehradun. Shiva has studied physics at Punjab University in Chandigarh, graduating as a Bachelor of Science in 1972. After a brief stint at the Bhabha Atomic Research Centre, she moved to Canada to pursue a master’s degree in the philosophy of science at the University of Guelph in 1977 where she wrote a thesis entitled “Changes in the concept of periodicity of light. In 1978, she completed and received her PhD in philosophy at the University of Western Ontario focusing on philosophy of physics Her dissertation was titled “Hidden variables and locality in quantum theory” in which she discussed the mathematical and philosophical implications of hidden variable theories that fall outside of the purview of

Bell's theorem She later went on to pursue interdisciplinary research in science, technology, and environmental policy at the Indian Institute of Science and the Indian Institute of Management in Bangalore. Shiva's book Making Peace With the Earth discusses biodiversity and the relationship between communities and nature. "Accordingly, she aligns the destruction of natural biodiversity with the dismantling of traditional communities—those who 'understand the language of nature'".

II. LITERATURE REVIEW

1) Vandana Shiva: The Pandemic is a consequence of the war against life:

The literature shows a rallying cry against the supposed threat posed by Bill Gates and his vision for the future of humanity. The author argues that Gates and others like him promote a worldview that separates humans from nature, and treats both as raw materials to be exploited for profit. The COVID-19 pandemic is seen not as a war but as a consequence of this mentality. The author suggests that new diseases emerge because of industrial farming practices, monoculture crops, and biodiversity loss which can all be traced back to our exploitative relationship with the natural world.

In the author's view, the future Gates envisions will be a continuation of this exploitative mindset. The author sees Gates' philanthropy as a form of imperialism that erodes democracy and biodiversity. Gates' effort to use technology to "reinvent education" is seen as part of a larger project to undermine public education and turn children into data providers. In the end, the author believes that this will lead to a future where humans are further polarized and marginalized, some reduced to the status of digital slaves.

Dr. Shiva concludes with a plea to resist these forces and fight for a different future. As the author sees it, we must protect life on earth by defending our humanity and autonomy, reclaiming our commons, and regenerating the earth. The passage is a powerful, emotive call to action that seeks to galvanize a movement against the perceived effects of globalization and industrial agriculture.

2) Climate Justice Requires A New Paradigm By Vandana Shiva:

This article explores the challenges associated with addressing climate change and how international agreements have failed to make significant progress in reducing greenhouse gas emissions. It is argued that the failure of global leaders to act on this issue is due to key misunderstandings and flawed assumptions regarding the relationship between economic growth, quality of life, and environmental sustainability.

The article critiques the Kyoto Protocol, finding that carbon trading and emissions trading have not effectively reduced emissions and were more geared towards privatizing the atmosphere rather than preventing climate change. Climate activists are described as having innocently played along with the polluters by only focusing on getting the Kyoto Protocol implemented in the first phase. Meanwhile, the Copenhagen Summit is accused of having been subverted by industrial powers who dismantled the international framework of legally binding obligations to reduce greenhouse gas emissions. In fact, the world was only able to secure a non-binding political declaration during the Copenhagen conference, known as the Copenhagen Accord. It ultimately resulted in an agreement between only a few countries that selected to declare their adherence.

Moreover, the Paris Climate Agreement communicates emissions targets and promotes international cooperation. By 2015, the 195 signatories of the Convention adopted the treaty as a plan to reduce GHG and create an action plan to assist climate responses. The Paris Agreement held countries accountable for their contribution to climate change and pushing them to develop national climate goals. The literature suggests that the fundamental flaws within current negotiating processes need to be addressed before meaningful action can be taken against climate change. It concludes that the movement towards an 'Earth Democracy' is the answer. By building Earth Democracy based on principles of justice and sustainability, citizens of the earth can pressurize governments and corporations to obey the laws of the Earth.

3) Vandana Shiva: Agro-ecology and Regenerative Agriculture :Sustainable Solutions for poverty and climate Change:

This literature is a comprehensive guidebook that offers evidence-based solutions to address some of the planet's most pressing crises in global ecology, agriculture, and public health. The book features the work of Navdanya, an

organization founded by Dr. Vandana Shiva that promotes agro-ecology, seed freedom, and a vision of Earth Democracy that seeks justice for the Earth and all living beings.

The book provides an in-depth analysis of the multiple planetary dilemmas that we face due to chemical and industrial agriculture, including land degradation, water depletion, biodiversity erosion, climate change, agrarian crises, and health crises. It also offers practical and evidence-based solutions that include using biodiversity-based organic farming to regenerate soil, conserve water, increase climate change resilience, and ensure food security in rural populations.

Dr. Shiva takes an organized approach to these wide-ranging topics and provides practical knowledge that can inform the future of agriculture and sustainable food systems. The book shows how an ecological agriculture based on working with nature can regenerate the planet, the rural economy, and our health.

Overall, Agro-ecology and Regenerative Agriculture is a valuable resource for agriculture scientists, policy makers, environmentalists, and individuals who care about their own health as well as the vitality of the planet. The book presents a compelling case for transitioning to sustainable agriculture practices that prioritize biodiversity, soil health, and community wellbeing.

4) Vandana Shiva: Climate Resilience:

Climate change is a critical issue that has far-reaching impacts on human populations and biodiversity. Stakeholders at all levels, including governments, the private sector, and consumers, must take action to address this issue. While there is focus on the energy sector and halting deforestation in efforts to curb emissions, we must also focus on the agriculture sector adds to the greenhouse gas emissions as well. To achieve COP21 targets, agricultural emissions must be reduced through innovative mitigation options for carbon sequestration within agricultural systems. Traditional agro-ecological production systems offer pathways to tackle climate change through building resilience by regenerating the planet, biodiversity, local communities, health, and democracy.

The industrial food system exacerbates the climate crisis and is vulnerable to climate change. A global transition to biodiverse and local food and farming systems can be key to mitigating and adapting to climate change and ensuring food sovereignty. However, large corporations, industries, and lobby groups promote ineffective, unproven, and sometimes dangerous false solutions through 'innovative' technologies. These techno-fixes include genetically modified crops and gene editing, artificial and lab-grown foods, geo engineering, biofuels, climatesmart or precision agriculture, carbon credits, and more.

The central role of food systems in building climate resilience cannot be ignored. Navandya international defines the connection between climate and agriculture, air and soil and thus is a key player in the International Regenerative Agriculture Movement. The living processes and the finite resources of earth have not been taken into account while making the dominant technological and economic models that have been based on fossil fuels. The distribution and growing of the food that we eat, as well as the way that we treat the soil is very closely related the civilisations and ultimately the fate of the society. Impact is the industrial agriculture is a major contributor to the greenhouse gas emissions and this has been shown by Navdanya, and how the solution for building resilience, adaptation, and mitigation to climate change and social justice comes from local ecological agriculture and food systems, local circular economies, local seeds, and care for the soil.

5) What is missing from climate debate:

This article emphasizes the consequences of violating the ecological processes and cycles of the earth, including the destabilization of the Earth's climate systems and the violation of the Rights of the Earth, Indigenous People, and Future Generations. The author argues that fossil fuels have driven the way we grow our food and produce our clothing, displacing the creative work of farmers and craftspeople. The author proposes a fossil-fuel-free food system as a health imperative for the planet and the human community. The author also criticises the polluters who are trying to make profits from pollution through tricks like "net-zero" and violence against the planet through geo-engineering and ultra processed lab food. The author calls for an ecological duty to stop the harm, prevent greenwashing, and regenerate the Living Earth, her ecosystems, Seed Freedom, and Food Freedom through Earth Democracy.

climate change is not just a standalone issue, but rather a symptom of a larger ecological collapse. The Earth's cycles, such as the nitrogen, water, carbon, air flow, and cycles of biodiverse life, are all interconnected and ensure the

maintenance of ecosystems and hence, climate health. Industrial food systems, which tie into all of these planetary cycles, have been one of the main reasons for the rupturing of these cycles. Due to land use change, agrochemical pollution, monocultures, genetic ecocide, plastic contamination, fossil fuel use, and long-distance transportation, industrial agriculture and globalization have caused ecocide and biodiversity loss, soil desertification, erosion, and contamination. These destructive practices account for a significant portion of greenhouse gas emissions, making the global food system one of the main culprits behind climate change and environmental degradation. The collapse of biodiversity and destruction of soils are also contributing to the worsening of climate-related crises such as floods, droughts, and forest fires.

In summary, the false solutions proposed in response to the climate crisis are geared towards consolidating the industrial food system through technological fixes such as lab-grown fake foods and the financialization of nature. These solutions ignore the larger crisis of how current industrial practices are destroying Earth's ecosystems and erases the importance of traditional food and cultivation cultures. Reductionist narratives are being used to blame animals for the food system's impact on climate, ignoring the multidimensional and essential roles they play in diverse agro ecosystems. The true purpose of these fake foods is not to address climate change or world hunger, but rather to fully control the entire food supply chain and eliminate the need for the Earth and small farmers. These technologies represent a new wave of the patenting logic that was first applied to seeds during the Green Revolution.

Nature-based solutions are a broad concept increasingly used by corporations and world leaders to promote a range of carbon offsetting schemes for climate and biodiversity protection, that are firmly grounded in discredited market mechanisms and corporate greenwashing. It is a concept that seeks to instrumentalize nature, by using the transactional logics of market mechanisms, all while externalizing ecological destruction and perpetuating neocolonial dispossession of indigenous populations, peasants, and many other communities through carbon offset projects. This literature suggest that Nature-based solutions cannot be reduced to market mechanisms and carbon offsets. We must prioritize the regeneration of local ecosystems and the empowerment of local communities as the key to achieving climate resilience and adaptation. This requires a fundamental shift away from industrial agriculture and towards a regenerative food system that prioritizes the health and well-being of ecosystems and communities. This regenerative food system must prioritize the health of ecosystems, biodiversity, and the well-being of local communities. It must prioritize the regeneration of soil, the conservation of water, and the reduction of greenhouse gas emissions through natural and regenerative practices. It must also prioritize the empowerment of small farmers and the protection of their rights to seeds, land, and water.

In addition, climate policies must address the root causes of ecological and social destruction, including the concentration of power and resources in the hands of a few large corporations. To achieve this, we must invest in community-led initiatives that priorities the well-being of local ecosystems and communities, and we must support policies that promote decentralized and democratic decision-making. A transition to organic, regenerative farming should be the top priority, to move away from the industrial food system and embrace a different vision of a regenerative food system.

The ways to rebalance, regenerate and heal our ecosystems are already known to us. The ways to adapt are also in our hands, and in the support we give to our local food communities who aim to work alongside nature to restore its biodiversity and rejuvenate its natural cycles. Healthy agro-ecosystems come from and work with, healthy greater ecosystems, and viceversa. Healthy agro-ecosystems also ensure the maintenance of a healthy greater ecosystem by working in tandem and regenerating Earth's cycles on a micro scale. Increasing genetic diversity, as well as crop diversification, is central to the agro-ecological approach to farming to reduce vulnerability to floods, droughts, and other unpredictable weather extremes. These communities are at the forefront of climate and ecological chaos, and they are also the ones building resilience to it.

III. RESEARCH GAP

Almost all the issues climate is facing are pointed out by Vandana Shiva in her work.

She has mentioned various sources; not just the disruption of carbon cycles, but the disruption and rupture of many of the earth's cycles such as water cycles and the cycles of bio-diverse life.

She's focused on how the industrial agriculture and globalization have been one of the main reasons to earth's cycles have ruptured.

She even talked about the relation between the global pandemic and climate changes, however there is little to no indication about the connection between digitalization and the ecological challenges.

3.1 Objectives

- This research covers various environmental hazards.
- This study helped us find the link between the digitalized world and climate change in relation to the non fiction works of Vandana Shiva
- A convergence between the objectives of conserving biodiversity, reducing climate changes.

3.2 Research Methodology

- Type of research: descriptive and qualitative
- Tool to be used:- the articles, books, and essays by Vandana Shiva

IV. CONCLUSION

In conclusion, Ecology is a science of nature in which all human kind life. According to Vandana Shiva, the aspect of femininity is suitable to maintain the nature rather than the aspect of masculinity. Because of the femininity consists of care, compassion, affection, giving, peace, etc. And this concept is called ecofeminism. Ecofeminism discussed about the relation between women and nature that will bring to the overcoming the ecological crisis' solution. Ecology is a branch of science that studies the interactions of organisms with their environment. It focuses on the relationships between living organisms, their environment, and how their interactions influence the distribution and abundance of organisms. The concept of Vandana Shiva's ecofeminism in overcoming the ecological crisis by offering her concepts as femininity, care, compassion, affection, giving, peace, and justice in economical sector. An ecological problem is an issue within an ecosystem that is caused by the interactions of organisms with their environment. The ecological challenge is so important and so profound because of the way in which it calls into question both the practical viability and the moral adequacy of the pluralist conception of a state-based global order and because of the way in which responding to the ecological challenge has pushed states towards new forms of international law and global governance. Dr. Vandana Shiva is a world-renowned ecofeminist who has been fighting for women and against industrial agriculture and genetically-modified crops. She believes that climate change is a feminist issue and argues that the absence of indigenous knowledge, local communities, and female representation deteriorate our relationship with the earth. Shiva's idea was that a decentralized approach to agriculture, based upon a diverse array of locally adapted seeds, would be more likely to weather the vagaries of a changing climate than a system relying on only a few varieties. In 1991 Dr. Shiva launched Navdanya, meaning "Nine Seeds," or "New Gift" in Hindi. a project that combats the growing tendency toward monoculture promoted by large corporations by forming over 40 seed banks in India and educating farmers on the benefits of conserving their unique strains of seed crops. Unlike native seed strains, the seed strains promoted by large corporations required the application of large amounts of fertilizer and pesticides, which was dangerous in a time of climate change. Vandana Shiva has contributed in fundamental ways to changing the practice and paradigms of agriculture and food. Her books, *The Violence of Green Revolution* and *Monocultures of the Mind* have become basic challenges to the dominant paradigm of non-sustainable, reductionist Green Revolution Agriculture. Through her books *Biopiracy*, *Stolen Harvest*, *Water Wars*, she has made visible the social, economic, and ecological costs of corporate led globalization. She chairs the Commission on the Future of Food set up by the Region of Tuscany in Italy. She is a Board Member of the International Forum on Globalization and a member of the Steering Committee of the Indian People's Campaign against WTO. She also serves in Government of India Committees on Organic Farming. Vandana Shiva has been a prolific writer and has authored nearly twenty-five books, well known among them being, *Staying Alive* and *Soil Not Oil*. She has to her credit more than 300 papers published in leading scientific and technical journals. She carries into her writings the sense of sacredness about Nature and consistently highlights the relationship between Nature and culture and conscientious the world to be eco-friendly. She has been at the forefront of

the fight against the imposition of genetically modified seeds on Indian farmers by global conglomerates. Shiva's view about the ecological crisis and women have a relationship, which was studied by the environmental ethics, ecofeminism. The ecological crisis perspective of Vandana Shiva was starting from ecological background in India, exactly it was happening with Chipko's women. They struggle to live, and they defend their life by protesting the mining where damaged their life sources. Beside that, they also acted with real action to overcome the ecological crisis. Shiva has a view to create a justice for future generations that must be supported by subsistence perspective in economics. Subsistence perspective in the economic sector contrasted with economic thinking which is built on the capitalist patriarchy ideology.

Limitations

While the research process has been done only on the non-fictional work of Dr Vandana Shiva, hence it doesn't cover the fictional poetry, plays, etc on the similar topic. Further research can be done on non-fictional work of other writers or how the fictional world portrays these environmental concern faced due to the new age of digitalization.

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