INTERNATIONAL JOURNAL FOR LEGAL RESEARCH AND ANALYSIS

Open Access, Refereed JournalMulti Disciplinary
Peer Reviewed Edition :

www.ijlra.com

 ISSN: 2582-6433

DISCLAIMER

ISSN: 2582-6433

EDITORIAL TEAM

EDITORS

Megha Middha

Megha Middha, Assistant Professor of Law in Mody University of Science and Technology, Lakshmangarh, Sikar

Megha Middha, is working as an Assistant Professor of Law in Mody University of Science and Technology, Lakshmangarh, Sikar (Rajasthan). She has an experience in the teaching of almost 3 years. She has completed her graduation in BBA LL.B (H) from Amity University, Rajasthan (Gold Medalist) and did her post-graduation (LL.M in Business Laws) from NLSIU, Bengaluru. Currently, she is enrolled in a Ph.D. course in the Department of Law at Mohanlal Sukhadia University, Udaipur (Rajasthan). She wishes to excel in academics and research and contribute as much as she can to society. Through her interactions with the students, she tries to inculcate a sense of deep thinking power in her students and enlighten and guide them to the fact how they can bring a change to the society

Dr. Samrat Datta

Dr. Samrat Datta Seedling School of Law and Governance, Jaipur National University, Jaipur. Dr. Samrat Datta is currently associated with Seedling School of Law and Governance, Jaipur National University, Jaipur. Dr. Datta has completed his graduation i.e., B.A.LL.B. from Law College Dehradun, Hemvati Nandan Bahuguna Garhwal University, Srinagar, Uttarakhand. He is an alumnus of KIIT University, Bhubaneswar where he pursued his post-graduation (LL.M.) in Criminal Law and subsequently completed his Ph.D. in Police Law and Information Technology from the Pacific Academy of Higher Education and Research University, Udaipur in 2020. His area of interest and research is Criminal and Police Law. Dr. Datta has a teaching experience of 7 years in various law schools across North India and has held administrative positions like Academic Coordinator, Centre Superintendent for Examinations, Deputy Controller of Examinations, Member of the Proctorial Board

ISSN: 2582-6433

Dr. Namita Jain

Head & Associate Professor

School of Law, JECRC University, Jaipur Ph.D. (Commercial Law) LL.M., UGC -NET Post Graduation Diploma in Taxation law and Practice, Bachelor of Commerce.

Teaching Experience: 12 years, AWARDS AND RECOGNITION of Dr. Namita Jain are - ICF Global Excellence Award 2020 in the category of educationalist by I Can Foundation, India.India Women Empowerment Award in the category of "Emerging Excellence in Academics by Prime Time & Utkrisht Bharat Foundation, New Delhi.(2020). Conferred in FL Book of Top 21 Record Holders in the category of education by Fashion Lifestyle Magazine, New Delhi. (2020).Certificate of Appreciation for organizing and managing the Professional Development Training Program on IPR in Collaboration with Trade Innovations Services, Jaipur on March 14th, 2019

Mrs.S.Kalpana

Assistant professor of Law

Mrs.S.Kalpana, presently Assistant professor of Law, VelTech Rangarajan Dr. Sagunthala R & D Institute of Science and Technology, Avadi.Formerly Assistant professor of Law,Vels University in the year 2019 to 2020, Worked as Guest Faculty, Chennai Dr.Ambedkar Law College, Pudupakkam. Published one book. Published 8Articles in various reputed Law Journals. Conducted 1Moot court competition and participated in nearly 80 National and International seminars and webinars conducted on various subjects of Law. Did ML in Criminal Law and Criminal Justice Administration.10 paper presentations in various National and International seminars. Attended more than 10 FDP programs. Ph.D. in Law pursuing.

Avinash Kumar

Avinash Kumar has completed his Ph.D. in International Investment Law from the Dept. of Law & Governance, Central University of South Bihar. His research work is on "International Investment Agreement and State's right to regulate Foreign Investment." He qualified UGC-NET and has been selected for the prestigious ICSSR Doctoral Fellowship.He is an alumnus of the Faculty of Law, University of Delhi. Formerly he has been elected as Students Union President of Law Centre-1, University of Delhi.Moreover, he completed his LL.M. from the University of Delhi (2014-16), dissertation on "Cross-border Merger & Acquisition"; LL.B. from the University of Delhi (2011-14), and B.A. (Hons.) from Maharaja Agrasen College, University of Delhi. He has also obtained P.G. Diploma in IPR from the Indian Society of International Law, New Delhi.He has qualified UGC – NET examination and has been awarded ICSSR – Doctoral Fellowship. He has published six-plus articles and presented 9 plus papers in national and international seminars/conferences. He participated in several workshops on research methodology and teaching and learning.

ISSN: 2582-6433

ABOUT US

INTERNATIONAL JOURNAL FOR LEGAL RESEARCH & ANLAYSIS ISSN

2582-6433 is an Online Journal is Monthly, Peer Review, Academic Journal, Published online, that seeks to provide an interactive platform for the publication of Short Articles, Long Articles, Book Review, Case Comments, Research Papers, Essay in the field of Law & Multidisciplinary issue. Our aim is to upgrade the level of interaction and discourse about contemporary issues of law. We are eager to become a highly cited academic publication, through quality contributions from students, academics, professionals from the industry, the bar and the bench. INTERNATIONAL JOURNAL FOR LEGAL RESEARCH & ANALYSIS ISSN 2582-6433 welcomes contributions from all legal branches, as long as the work is original, unpublished and is in consonance with the submission guidelines.

www.ijlra.com
Volume 2 Issue 7 | Aug 2023
ISSN: 2582-6433

METAVERSE AND CLIMATE

AUTHORED BY - SHRAYASH SHRIWAS

Abstract

India is a diversified nation with a rich culture and a wide range of flora and fauna. But because of numerous anthropogenic activities, the nation has witnessed tremendous environmental, natural resource, and animal degradation throughout the years. The industrial revolution and technological advancements have significantly contributed to this destruction, leading to air and water pollution, soil erosion, climate change, and the extinction of several species. India is a country with a wide range of biodiversity, a wealth of natural resources, an impressive variety of wildlife, and a lively cultural heritage. However, the country's ecosystem and biodiversity have suffered as a result of the extensive destruction of its environment and natural resources over the years. Metro cities, like Delhi, Mumbai, and Kolkata, have been identified as one of the most polluted places on earth. Industrialization, vehicle emissions, and the combustion of fossil fuels are the primary causes of this pollution. In addition, poor disposal of waste and industrial discharge has severely contaminated the nation's rivers and lakes as well.India's rich cultural heritage is also at risk due to the destruction of its environment and natural resources. The country's forests, which are home to several indigenous communities, are being destroyed to make way for industrialization and urbanization. To control and protect India's wildlife and natural resources, the government has enacted several environmental laws and guidelines. The continued destruction of the environment and wildlife is a direct result of the inadequacy of these laws implementation and enforcement. Lack of public and official awareness has also contributed to the ineffectiveness of these laws. In this paper we will critically analyze the effect of Metaverse or web3 on the environment and human life.

Keywords: Environment, Technological-advancement, Law, Industrialization, natural resources,

ISSN: 2582-6433

Introduction

Looking back a decade ago, in 2013, the climate was noticeably different from what we experience today. During that time, the summer season spanned from march to June, and the rainy season typically spanned from July to the end of September, while the winter season lasted from October to mid-February.[1] (Division, 2020) It was possible to construct and plan homes for future needs without worrying about sudden climate shifts. Everything was in accordance with the natural order. However, when we compare the current weather patterns with those of 2013, we observe a significant transformation in climate. There has been a drastic rise in temperature, particularly during the summer season, which is getting hotter and more severe with each passing year. Furthermore, summer seems to be extending into other seasons, and throughout the year, it feels like summer most of the time. The primary cause of this temperature escalation is Global Warming. Greenhouse gases like carbon dioxide (CO2) and methane capture the heat from the Sun in the Earth's atmosphere, which is the cause of global warming. It is typical for our atmosphere to have certain greenhouse gases. They aid in keeping the planet's temperature livable. However, too many greenhouse gases can result in excessive warmth. The amount of CO2 in our atmosphere rises as a result of the burning of fossil fuels like coal and oil. This occurs as a result of the air's carbon and oxygen being combined during combustion to create CO2. We need to keep an eye on CO2 levels because too much of it can warm the Earth too much. Governments throughout the world has taken initiative to the regulate CO2 emissions, which are generally called as "Environmental Laws."

The industrial revolution of 18thcentury, which began in Great Britain and eventually expanded to Europe, North America and to the whole world, was a time when, in a short period of time, businesses abruptly switched from using human labour to using machinery, is considered the introduction of climate change.[2]Heavy machinery was installed in factories so that things could be produced on a huge scale. Productivity significantly increased as a result of these devices, which allowed manufacturers to make items faster and more effectively than ever. However, the utilization of large machinery in industries required a steady stream of energy to keep the equipment working. These machineries were first powered by steam, which was produced by burning coal. Later, when electricity was invented, manufacturers switched to electric power since it was more dependable and effective. Modern industrial economies have grown and

[1] PUBLICATION DIVISION, INDIA 2020: REFERENCE ANNUAL BOOK5(Publications Division Ministry of Information & Broadcasting 2020).
[2]Ahmed, F., Ali, I., Kousar, S. et al. The environmental impact of industrialization and foreign direct investment: empirical evidence from Asia-Pacific region. Environ Sci Pollut Res 29, 29778–29792 (2022).

ISSN: 2582-6433

developed tremendously as a result of the usage of fossil fuels and electricity to power manufacturing. It's important to remember that, even though mass manufacturing of commodities has significantly increased productivity and economic growth, it has also had unfavorable effects including environmental degradation and labour exploitation. Therefore, it's critical to strike a balance between the advantages of industrialization and the requirement for ethical and ecological practices.

The CO2 concentration was 280ppm before the Industrial Revolution and has fluctuated between 180 and 280ppm over the last few centuries. The CO2 concentration has reached 409.8 ppm (parts per million) in 2019, higher than at any point in at least the past 800,000 years.[3] As these industries grew, Capitalism started taking over and now we live in a capitalist society. Capitalism is an economic system in which private individuals or businesses own capital goods. At the same time, business owners (capitalists) employ workers (labor) who only receive wages; labor does not own the means of production but only uses them on behalf of the owners of capital.[4] The core idea of capitalism is maximizing profit for the capitalist (i.e., the owner) and minimizing outflow of capital to the workers.

The Industrial Revolution marked a significant shift in society, as it introduced new manufacturing processes and technology that transformed the way goods were produced and consumed. Fast forward to the present day, and we're experiencing a similar shift with the emergence of the web and technology. The web and technology have given rise to a digital revolution, with advancements in fields such as AI, machine learning, and automation transforming how we work and live. The convergence of the industrial revolution and the digital revolution has led to the rise of smart factories and Industry 4.0, where connected machines and devices are integrated to optimize manufacturing processes and supply chain management. How we communicate and access information has also changed as a result of the internet and technology. As social media and internet platforms have grown in popularity, we can now communicate and exchange information quickly with people around the globe. The industrial and digital revolutions, two profound social transformations, have combined to produce even greater innovations and advances in production, communication, and technology.The Industrial Revolution changed how goods were made and consumed, and today we are experiencing a similar shift with the emergence of the web and technology. The digital revolution has led to

[3]Lindsey, R. Climate Change: Atmospheric Carbon Dioxide. 2019. Available online: https://www.climate.gov/news-features/understanding-climate/climate-change-atmospheric-carbon-dioxide
[4]The Investopedia team, What Is Capitalism: Varieties, History, Pros & Cons, Socialism, Investopedia, (Apr. 23, 2023, 3:28 PM), https://www.investopedia.com/terms/c/capitalism.asp

ISSN: 2582-6433

advances in fields like AI and automation, transforming how we work and live. Smart factories and Industry 4.0 optimize manufacturing and supply chain management using connected devices. The internet and technology have also changed how we communicate and access information. Social media and internet platforms allow for quick global communication and a new generation of content creation tools. The combination of the industrial and digital revolutions has led to even greater innovations in production, communication, and technology. (Ashwani Sharma, 2020)

HISTORY

Concern over the effects of human activities on the natural world led to the establishment of environmental law on a worldwide scale. Laws prohibiting actions thought to be harmful to the environment have a long history, dating back to ancient civilizations. Nonetheless, the foundations for contemporary environmental law were laid in the twentieth century. The Convention for the Protection of Wild Animals, Birds, and Fish in Africa was signed in 1900 and was the first significant international environmental pact.[5] Overhunting and illicit poaching of African animals were two of the main concerns that prompted the agreement.[6] Europe's Agreement for the Preservation of Birds Important to Agriculture was signed in 1902 to stop illegal bird hunting. The United Nations was essential in the formulation of international environmental law. The United Nations (UN) was established in 1945, and in 1972, the UN Conference on the Human Environment was convened in Stockholm. This conference was the first significant international gathering to focus on environmental concerns. The meeting resulted in the establishment of the Stockholm Declaration, which recognized the importance of environmental protection and advocated for international collaboration to address environmental problems. The Stockholm Declaration was adopted as a result of the conference. Several international environmental treaties and agreements were drafted in the wake of the Stockholm Conference. These include CITES (the Convention on International Trade in Endangered Species of Wild Fauna and Flora), CBD (the Convention on Biological Diversity), and the UN Framework Convention on Climate Change (UNFCCC). Among the environmental concerns that these pacts sought to address were those of wildlife preservation, biodiversity, and climate change. Following the Stockholm Conference, several international environmental treaties and agreements were created, including the Convention on International Trade in Endangered

[5]Philippe Sands, Principles of International Environmental Law (Cambridge: Cambridge University Press, 2003) at 524
[6]Preamble of the London Convention of 1900

ISSN: 2582-6433

Species of Wild Fauna and Flora (CITES), the Convention on Biological Diversity (CBD), and the UN Framework Convention on Climate Change (UNFCCC). Wildlife conservation, biodiversity, and climate change were addressed by these agreements.

PROVISIONS RELATED TO ENVIRONMENT IN THE INDIAN LEGAL SYSTEM

The Constitution of India gives its citizens the right to live in a clean and unpolluted environmentas a fundamental right under Article-19 and makes it a fundamental duty to protect and preserve it underArticle-51A(g) which came from the Directive Principle of State Policy (DPSP). Since the Stockholm declaration of 1972 many legislations were passed by the government of India to control and prevent pollution and to protect the environment, such as –

- TheWildlife (Protection) ACT, 1972
- The Water (Prevention and Control of Pollution) Act, 1974
- The Air (prevention and control of pollution) act, 1981
- The Environment (Protection) Act, 1986
- The energy conservation act, 2001
- Biological diversity act 2002
- Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 (FRA)
- The National Green Tribunal Act, 2010
- Compensatory Afforestation Fund Act, 2016

These laws all function to ensure that individuals adhere to the regulations in their respective jurisdictions. To some extent, these regulations aid in pollution management. We can see that these policies have made some advancements in reducing pollution.

We live in a digital era where everything is going digital or on the verge of going digital, this digitalization is shown to us but its effect on the environment is not shown or even talked about

The METAVERSE

The Metaverse is a ground-breaking concept which has gained popularity in recent years. It's like a clone of the real world, made with the integration of various technologies like social media, online gaming, augmented reality (AR), virtual reality (VR) to provide people with a never seen before immersive and interactive experience. Through the help of AR and VR technology people throughout the world can come together at one place and participate in all

ISSN: 2582-6433

sorts of activities like socializing with friends, attending concerts, shopping and even attend marriages, play, learn, etc., as if they were there, breaking the location barrier.Cryptocurrency is the currency of the metaverse,all the transactions in the metaverse are done through cryptocurrencies which are built on blockchain technology. Blockchain is a decentralized network which ensures anonymous, transparent, and secure transactions of currency and digital assets from one user to another. The Metaverse relies heavily on cloud-based storage. The cloud serves as a digital storage vault, housing all the necessary data and assets required for the functioning of the Metaverse. This allows the users to access their virtual identities, possessions, and experiences from any device with an internet connection. A fast and low-latency internet connection is essential for the smooth operation of the Metaverse.

Neal Stephenson, a science fiction novelist, originally used the word "metaverse" in his 1992 book “Snow Crash”[7]. Since then, the idea has developed and grown to include an entirely immersive virtual setting that incorporates virtual reality, augmented reality, and other technologies. By delivering a fully immersive and linked experience that seamlessly combines the real and virtual worlds, it has the potential to completely transform how we live, work, and play. The effects of the metaverse on human life and the environment, however, are also a source of worry. As individuals spend more time online, one of the major worries is the possibility of addiction and social isolation. Concerns have also been raised concerning the environmental impact of the energy and materials needed to build and maintain the metaverse's infrastructure.

METAVERSE IMPACT ON ENVIRONMENT

Metaverse is still in its developing stage, its initial prototypes are out, but it’s just the beginning of the new virtual era which is yet to come. Just like a coin, everything has two sides, the introduction of metaverse also has two sides i.e., positive and negative.

There is little study of the environmental effects of the metaverse because the idea is still new and in it’s developing stage. However, some professionals have raised concerns about the amount of power needed to sustain the metaverse, in addition to the creation and eventual disposal of the hardware required to enter it.

[7]STEVEN LEVY, *Neal Stephenson Named the Metaverse. Now, He’s Building It*, WIRED, (Apr. 23, 2023, 07:43 PM), https://www.wired.com/story/plaintext-neal-stephenson-named-the-metaverse-now-hes-building-it/

ISSN: 2582-6433

3.1.1Positive effect of Metaverse

3.1.1.1Virtual products and experiences

According to UNEP it takes 3,781 liters of water to make one pair of jeans which equates to the emission of around 33.4 kilograms of carbon equivalent.[8] The rise of virtual experiences has given brands great opportunities to develop sustainable products. Brands can minimize their textile waste and chemical waste by using virtual experiences to showcase their products, reducing the need for physical samples and wasteful materials. It also allows brands to get valuable feedback from consumers without the need to make physical prototypes, which require tremendous amounts of resources and impact the environment, while providing customers with an immersive and engaging experience by utilizing virtual technology. One example of this is NFTs (non-fungible tokens), which are alternatives to traditional physical arts. These digital products can be sold and traded without the need for shipping, packaging, or physical production, significantly reducing their carbon emissions.

Many well-known brands are already taking advantage of these opportunities. For example, Gucci, the high-end fashion house, has opened a virtual boutique on the massively popular platform The Sandbox, where users can buy exclusive Gucci merchandise[9]. Brands like Nike[10] and Adidas[11] had also become part of those companies with a metaverse presence to develop virtual experiences for the customers.

Simulation for Real world Scenarios

When compared to more conventional training methods, simulation training in the metaverse has many advantages. Learners can practice in a safe, controlled environment without the risks of real-world training thanks to simulations in the metaverse that can replicate real-world scenarios. In addition to that, the metaverse can also offer a more engaging and interactive learning experience, which can improve skill development. Learners can collaborate with others in the virtual world, receive instant feedback, and track their progress easily.

[8] United Nations Environment Program, https://www.unep.org/news-and-stories/story/cleaning-couture-whats-your-jeans (Apr. 28, 2023).
[9] Gucci, https://www.gucci.com/us/en/st/capsule/vault-metaverse (Apr. 28, 2023).
[10] Forbes, https://www.forbes.com/sites/bernardmarr/2022/06/01/the-amazing-ways-nike-is-using-the-metaverse-web3-and-nfts/?sh=594ecf3c56e9 (Apr. 28, 2023)
[11] Adidas, https://www.adidas.com/metaverse (Apr. 28, 2023)

ISSN: 2582-6433

Cloud Computing

Cloud computingrefers to a digital locker or digital storage which is not present on the device itself like micro-SD card, hard drives, etc., rather it is present on the internet, the saved date can be accessed from anywhere and across various devices through internet, no need to transfer the data manually. Cloud computing technology is used to store the metaverse's massive amounts of data. This encourages smaller data storage facilities to switch to cloud storage, which may benefit the environment. Microsoft's lifecycle analysis found that Microsoft Cloud was 22–93% more energy efficient than regular physical datacenters. Cloud service providers also invest heavily in renewable energy.[12] According to Google, they will shift to cloud data centers on carbon-free energy by 2030[13] and Microsoft by 2025.

Providing the virtual experience

The Metaverse brings a whole new opportunity for people to visit places they have always wanted to visit but couldn't physically visit. It makes it possible for the user to travel across the globe without leaving their home, making it accessible for people who are physically incapable of travelling to explore and experience virtual versions of the location. A person can visit courts virtually or even see a proceeding as if he was present there. This can also help in attending international conferences and meetings, also reducing the traveling cost and carbon emission caused by travelling.

Breaks the location barrier

The Metaverse breaks the geographical barrier between persons, lets say someone is sick and can be treated by a doctor from foreign country, through metaverse one can visit the doctor in the virtual world without any need to go there. This can also be useful for people who live in foreign countries for attending events such as concerts, launching events, gathering, and watching movies with their friends from other countries.

The Metaverse breaks the geographical barrier between people. This can be useful for people who live in foreign countries for attending events such as concerts, launch events, gathering, and watching movies with their friends.This is a significant development as it allows for increased global connectivity and fosters a sense of community among individuals who may be

[12] Microsoft, https://www.microsoft.com/en-us/download/details.aspx?id=56950 (Apr. 28,2023)
[13]Urs Hölzle, *Announcing 'round-the-clock clean energy for cloud*, Google Cloud, (Apr. 29, 2023, 12:19 AM)

ISSN: 2582-6433

geographically dispersed. Through the metaverse, people can attend virtual meetings, conferences, and events without the need for travel, reducing costs and environmental impact.

EFFECT OF METAVERSE ON THE ENVIRONMENT

The most well-known artificial intelligence (AI) chatbots are Bing AI, Bard AI, and ChatGPT from Microsoft, Google, and OpenAI, respectively.To train these AI chatbots algorithms, also known as models, are required to carry out tasks by analyzing data, these chatbots need highly powerful and advancedhardware housed in sizable data centers situated across the world.This process is called training. The popularity of ChatGPT has inspired other companies to develop their own AI systems and chatbots or create products that utilize big AI models to offer new features to various users.The process of training a sizable AI model has been found to produce more than 626,000 pounds of carbon dioxide equivalent, or nearly five times the lifetime emissions of the typical American car (including the manufacturing of the car itself), according to research from the University of Massachusetts, Amherst.[14]

Conclusion

The metaverse indeed offers remarkable benefits that can help us advance in many ways. But the price of developing it raises certain questions. The cost is already considerable at this point, and it will continue to increase as the metaverse gains popularity and utilization. Additionally, a fully developed metaverse requires a lot of resources. To determine if we are willing to make such sacrifices, we must carefully weigh the benefits and drawbacks of each option.It's important to strike a balance between the digital and physical worlds and recognize that each has its own unique value and benefit. We humans are social and physical creatures the more we isolate from society and nature the more miserable we become.

The metaverse sure has some amazing benefits which will help us advance in many ways but the cost at which it comes is the issue. It is just at its beginning stage and the cost at this stage is this high imagine when it becomes full-fledged what will be the cost? And to reach that stage how much resource will be used, Is it worth the cost? It's important to strike a balance between the digital and physical worlds and recognize that each has its own unique value and benefits. Digital world can never replace the physical world, we humans are physical and social beings the more we distance ourselves from the nature and the environment the more lonely and sad we become

[14]Karen Hao, *Training a single AI model can emit as much carbon as five cars in their lifetimes*, MIT technology Review, (Last visited Apr. 24, 2023, 11:53 AM) https://www.technologyreview.com/2019/06/06/239031/training-a-single-ai-model-can-emit-as-much-carbon-as-five-cars-in-their-lifetimes/