

PREFACE TO THE EDITION

We are pleased to present the second issue of the International Journal of Judicial Science Research studies (IJJSRS), dedicated to advancing the field of legal studies through inspiring studies. This issue brings together a bunch of articles that address a varied range of contemporary legal issues.

In this edition, our authors delve into critical topics that challenge conservative thinking and explore new extents of legal theory and social issues. Our double-blind review system upholds the integrity and objectivity of the publication, providing our readers with trustworthy and authoritative sources of legal knowledge.

We extend our gratitude to the authors, reviewers, and editorial team for their dedication and hard work in bringing this issue to culmination. Their contributions are vital in maintaining the journal's reputation for merit and in driving forward the mission of advancing legal studies.

Thank you for your constant support for the International Journal of Judicial Science Research studies (IJJSRS). We look forward to your feedback and to future contributions that will shape the discourse in legal studies.

Sincerely,

Indu Panicker

Executive Editor

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Land Acquisition Laws and Farmers Protest in India

Adv. Shajan Chakkiath, Managing Director, Eduschool Academic Research and Publishers

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Abstract

The concerns with forced acquisition of land and the financial and governmental barriers that prevent voluntary land transfers are the two main topics of this essay. The Land Acquisitions Act of 1894 was completely revised in 2013 to address a number of issues, including the need for landowners' prior consent before private businesses or public partnerships could acquire land, the need for social impact assessments for any and all land acquiring initiatives, and limitations on the purchase of irrigated agricultural land to address some of the issues raised by those impacted by land acquisition. We contend that reform is long required and that the existing structure is untenable in India, a democracy. The takings procedure and regulatory restrictions are major causes of the extreme distortion of land prices that exist today. The most significant barrier to development, particularly in the area of infrastructural development, is land acquisition. The effects of land acquisition on farming and non-farming populations in western Uttar Pradesh are covered in this research. Numerous effects on both farming and non-farming communities have resulted from the land acquisition. Instances of such problems pertaining to land acquisition have occurred throughout India. Following the loss of land, a few enduring problems were Food insecurity, relocation, challenges to one's livelihood, changing occupations, and displacement.

Keywords: - Land Acquisition, Food Insecurity, Land Acquisition Act 1894, Regulatory, Land Transactions, Farming, Non-Farming Groups, Resettlement, Livelihood Challenge, Shifting Occupation.

“A fertile soil Alone does not carry agriculture to perfection.”

—H.Derby.

I. INTRODUCTION

The Lok Sabha has received the Land Acquisition and Rehabilitation & Resettlement (LARR) Bill 2011. The bill's declared goal is to address the shortcomings of the outdated Land seizure Act 1894, which is the current legislation pertaining to the forcible seizure of private property and land. In addition, the measure seeks to protect the interests of those impacted while making it easier to shift land from agricultural to other developmental uses. There are many admirable aspects in the measure.

The most significant is the limitation of the emergencies clause's use, which has been made well-known by the states' repeated abuse of it. Furthermore, the measure acknowledges that the purchase of agricultural property impacts many

individuals whose livelihoods rely on it in addition to the land's owners. Therefore, by establishing a legal right to compensation and Reintegration and Rehabilitation (R&R) for those who suffered property and other livelihood losses, it aims to safeguard the welfare of all impacted parties.

In addition, the measure permits forced purchasing of land for a variety of private company operations by weakening the important public-private divide. In fact, the proposed bill greatly broadens the definition of eminent domain, which encompasses or the state's and its authorities' authority to forcibly take private property for "public purpose" purposes. This article makes the case because any procedure centered around the concept of eminent domain is inherently unjust and inefficient, even if it only entails the forced purchase of a small portion of the necessary property. Furthermore, it is argued that these issues cannot be circumvented even if the compelled purchase is supported by ostensibly charitable programs, such as reimbursement as a result of land-for-land and/or R&R packages, by addressing various forms of eminent domain suggested by some recent works on the subject.

Since independence, those impacted by this forced relocation that results in the state acquiring property have been protesting it. This opposition grew exponentially in response to the quantity of land acquired, accelerated in response to the transition to a market economy, and culminated in a large-scale movement within the previous 20 years. This caused the state to employ force to seize the property, which resulted in the deaths of the farmers who were fighting and injuries to them. It also caused the process of acquiring land to halt or be delayed in various areas.

Academics, non-governmental organizations, and members of civil society groups that work to raise socially conscious issues have long called for the repeal of the a colonial Land Acquisition Act, 1894, which serves as the foundation for such acquisitions, and to be replaced with a democratic, humane law that safeguards the rights of those impacted. They gave the government a thorough study of many legal provisions that severely harm the rights of farmers and other people who depend on land for existence, and they vehemently argued that the law needs to be changed by passing a new legislation that takes their concerns into account.

The more significant changes that were suggested to be contained in the new law included the more significant changes that were suggested to be contained in the new law included the following: a demand that all land acquisitions be done with the consent and knowledge of the individuals who stand to be impacted, limiting the definition of "public purpose" to government initiatives that positively impact the populace, especially those that displace people; prohibiting the acquisition of land by private organizations; requiring ecological and Social Impact Analyses (SIA) prior to making any land acquiring decisions; prohibiting the acquisition of irrigated and multicropped land; and requiring the government of offering appropriate compensation, rehabilitation, and resettlement to everyone, including livelihood losers impacted by land acquisitions, whether or not by state or private entities; and returning any unutilized land acquired beyond the requirements of a currently.

This study aims to accomplish two things: first, it will determine the "functioning" that property that is typically valuable to landlords in India creates, and secondly, it will explain the worth of these "functioning's" and, therefore, the severity of the loss that results from their loss. An in-depth discussion with landowners to look at the function of land in individual and family development accomplishes the first goal. Analysis of primary sources identifies eighteen ways that land works.

Land purchase in the western region of Uttar Pradesh has recently developed into a convoluted procedure for development that has, either directly or through indirect means, caused a variety of issues for both agricultural and non-farming communities. Their old job is no longer with them. The development cycle has not benefited the villagers, despite their efforts to maintain good roadways. Even ongoing attempts to build roads that would have connected these settlements to larger roadways received little attention. In order to expedite the state's growth, the state of Uttar Pradesh has started the process of purchasing property for both public and private uses under the PPP plan. In this procedure, agricultural groups or not-agriculture groupings have both been disregarded.

Not once the government looks back on them. This procedure has had a greater influence on the agricultural class; they are experiencing some uncertainty in their lives. The agricultural class now lacks the means to meet their fundamental needs in the community, and even after receiving reimbursement, they feel that their financial situation has become worse. Merely monetary compensation is unable to replace the customs they followed for ages, and they were driven off their land in order to accommodate the development. For whatever cause, the corporate, the government, and impoverished peasant classes are at odds again. Following governmental protests against the land acquisitions process in many states, socio-political awareness has increased.

1.1 Significant Effects on Groups That Farm and Don't Farm

1. Farming group:

- Many villages have been relocated as a result of changing occupancy brought on by land loss.
- They used to work as labourers in the village after losing their job since they lacked the skills to pursue another respectable career. For example, building bricks, houses, or roads.

2. Effects on Group Not in Agriculture:

- Relocation as a result of the lack of employment in the fields. They had previously been sharecroppers, but they lost their jobs since there was no land available.
- Loss of employment as a sharecropper.

- Food insecurity: They don't have enough food stored for the whole year, so they have to labour at harvesting, winnowing, threshing, and other tasks.
- Inflation: Previously inexpensive and widely accessible daily consumables (food), such milk and vegetables, now cost more and are sometimes unavailable.

Lastly, we talk about the LARR bill. We contend that some of the continuing abuse of eminent domain authority are not addressed by the bill in its current form. The measure allows the states to favour wealthy and private corporations at the cost of the rights granted to farmers and forest dwellers via a number of open loopholes. Furthermore, it ignores the underlying issues that give rise to frequent disagreements and lawsuits about pay. If anything, its terms are probably going to make the reparations dispute much more intense.

II. LITERATURE REVIEW

(Mukerji, S. 2017) Since India's independence, there has been discussion in the public sphere over land purchase laws. The socialist economic model served as the government's guide when it started land reforms in India, but the landed class's political clout in rural regions prevented them from fully achieving their goal. Nonetheless, land was taken for the construction of infrastructure, mining, and dams. These developmental efforts were rationalized as essential first steps toward the fast economic growth that would ultimately be required for the general good. Additionally, since there were few unorganized political organizations to represent the views and a low degree of political knowledge, there was minimal opposition to land acquisition. Land purchase laws emerged in the post-liberalization era as a consequence of the drive for commercialization and expedited industrial investments.

(Nielsen, K. B., 2015) This paper investigates how subjugated groups trying to challenge the process's marginalizing impacts are forming new arenas of resistance inside the framework of Indian's neo-liberalization process. Through an analysis of the creation of the right to Equal Treatment and Openness in Lands Acquisition, Rehabilitation, and Resettlement Bill, 2013, we specifically concentrate on the rise of India's "new rights strategy."

(Misra, K. 2021) The wealthy in India profited from the involuntary seizure of agricultural land for the establishment of Special Economic Zones (SEZ), at the cost of small farmers, who were and still are the majority voting bloc. Consequently, farmer groups throughout the nation fiercely opposed these regulations on a political level. These groups, however, have a patchy history of opposing governmental and big business ambitions to acquire property. In order to demonstrate how the elite may organize funds to guarantee the protection of their financial objectives even in democracy where they are election minority, this study develops a basic model of the political battle between small-scale farmers and the elite over the acquisition of land. We utilize a newly constructed data set on SEZ projects that were unable to acquire land due to farmer agitations in order to evaluate the prediction of our model.

(Goswami, A. 2016) The present piece examines the main points of the land acquisition, rehabilitation, and settlement act of 2013 (LARR Act), as well as the most current revisions that the federal government has suggested. It also covers the right to adequate reimbursement and accountability. The LARR Act must be interpreted in light of political rivalry, shifting political tides, the Supreme Court's string of rulings prior to its passage, and the importance of the "balancing" opposing viewpoints view. The federal and judicial twin categories take centre stage in such an environment. The LARR Act's relevance and continuing existence will depend on how it responds to both. This article looks at the legal aspects of topics like "public purpose" and "eminent domain name," as well as R&R, compensation, protections for project-affected families, along with additional pertinent procedures.

2.1 Objectives of the study

- Examine all of the nation's current land acquisition legislation, particularly those that affect farmers' rights and protection, such as the Right to Fair Compensation and Openness in Land Acquisition, Rehabilitation, and Resettlement Act (2013).
- To evaluate how land acquisition laws are used by federal, state, and municipal governments, as well as the efficiency of the enforcement systems in defending the rights of farmers.

2.2 The Scope of the study's

This research on land acquisition laws and farmer security in India usually involves a number of important areas:

- **Legal Framework:** This will include a review of the different Indian laws pertaining to land purchase, including the Land purchase Act of 2013 and pertinent state laws and regulations. An examination of the clauses controlling the procurement procedure, recompense, rehabilitation, and relocation of impacted farmers would be part of it.
- **Impact Assessment:** evaluating how land acquisition would affect farmers and other impacted groups from a socioeconomic standpoint. Examining problems including relocation, loss of livelihood, resource accessibility, and modifications to sociocultural dynamics would be necessary for this.
- **Legal Safeguards:** assessing the efficiency of current legislative protections and other processes intended to safeguard farmers' rights throughout the process of acquiring land. This can include researching how organizations like the court, grievances redressal mechanisms, and land acquisition authorities ensure that laws are followed and complaints are resolved.

Some of the major topics that might be included in a thorough analysis of India's land acquisition laws and farmer protections could be included in this scope, which may vary based on the study's particular goals and emphasis.

III. METHODOLOGY

An academic study's methodology section usually describes the methodologies used in the research, such as the data gathering strategies, research design, and analytic approaches. When examining land acquisition legislation and farmer protections in the nation of India, the following elements of the approach might be included: Keep your text and graphic files separate until after the text has been formatted and styled. Do not use hard tabs, and limit use of hard returns to only one return at the end of a paragraph. Do not add any kind of pagination anywhere in the paper. Do not number text heads-the template will do that for you.

Research Design:

- Explain the study's general methodology, including any mixed, qualitative, or quantitative approaches.
- Justify the research design selection and discuss how it fits with the goals of the study.

Techniques for Gathering Data:

- Describe the data collection techniques, including surveys, interviews, literature reviews, and archival research.
- Describe how information sources were located and accessed.
- Describe any ethical issues and how they were resolved, especially with regard to participant rights and privacy.

Sampling:

- Explain the sampling technique used to choose participants or data sources.
- Describe the study's inclusion and exclusion criteria.
- Talk about any restrictions or prejudices related to the sample strategy.

Data Analysis:

- Describe the methods utilized to analyse the data, including statistical, content, and theme analysis.
- Describe how the data were understood and coded.
- Talk about any data analysis software or tools and how relevant they are to the research.

IV. CONCLUSION

The terms of the property purchase Act of 1894, as revised in 1984, include intrinsic perversities that give birth to a great deal of dangers involved in the process, as well as protests that usually accompany the purchase of enormous tracts of property. In addition to substantial transactions revenue taxes, other policies that are collectively referred to as "regulatory restrictions on land use" and are not directly related to the Land Use Act (LAA) have severely distorted the land marketplaces by driving down the price of land that is presently farmed but may continue to be used for other uses. The demand for Non-Agricultural (Use) authorization has been the most significant. All existing land use limitations must be removed, with the exception of those pertaining to the zoning of planning areas under urban development authority. The necessity for non-agricultural use clearance has to be removed most urgently. Similarly, it is necessary to lift the restrictions that certain states, most notably Gujarat and Maharashtra, have placed on non-agriculturalists purchasing agricultural property for agriculture and other reasons.

Suggestions

- Before acquiring land for development, the government should get the approval of the peasantry. It should be the duty of the government and private investors to quickly and effectively relocate them.
- The 2013 Land Acquisition Act should be taken into consideration while making the purchase.
- Steer clear of purchasing fertile or cultivable land. It shouldn't be purchased or disregarded until a public purpose is no longer required.
- The government should avoid acquiring fertile land and should plan its land acquisitions before acquiring them for various objectives.
- To enable farmers who lost their jobs as a result of land acquisition to simply make a living, the government should provide them with skills.

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Media Trial in the Age of Internet: A Legal Analysis

Adv. Varsha P, Research Scholar, School of Law, VELS University of Science and Technology, Chennai

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Abstract

Recently, media trials have been in the headlines in India. A few cases have brought attention to the worries that the public's perception of our criminal system and judicial methods might be greatly influenced by the media. Our media was essential in achieving a balance between the conflicting demands for preserving the value of human rights and the objectives of disseminating information to the society. The public is greatly influenced by the social network system especially media which also seems to meddle in judiciary also. The media trial and fair trials are impacted about our legal as well as constitutional rights, has drawn a lot of attention. To make a balance between press freedom and citizens rights. This research article points out the concepts behind the standards in fair trial in media cases through examining how court rulings and public perception have evolved over time. On examination of Media trial in India, it reveals a difficult balancing act between the necessity to preserve the supremacy on our legal system and the importance of right to free expression as guaranteed on Art- 19 of the Constitution. This study examines the function of the media during a criminal prosecution. This essay attempts to explore the importance of media rights especially covering criminal cases. What are the rights upon who work in our criminal justice system have? How do the rights of such people and the media intersect? Additionally, the article attempts to determine how the judiciary monitors media coverage of criminal trials and related resources.

Keywords: Media Trials, Public Attitudes, Public Opinion, Criminal Justice Systems, Rights of Media, Media Exercises, Competing Claims, Media Reporting, Article 19, Mixed-Methods Quasi-Experimental, India.

I. INTRODUCTION

"Media trial" or "Trial by media" refers to the effect that newspaper and television coverage has on a person's reputation by generating a generalized sense of guilt or innocence even prior to the formal court ruling. The earliest known instance of a media trial occurred in 1921 when an American silent film actor was charged with murder; while being found not guilty, he nevertheless lost his career and reputation. A similar circumstance also arose in the notorious "Sheena Bora" case, in which Indrani Mukherjee, the mother of the victim, was accused of killing her daughter and thus almost shut out of society.

It is said that some benefits from media trials. Had it not been for the media's coverage, the Sheena Bohra murder case was dismissed as a case of a person going missing. Media trials are a dualism in this sense. Gendered narratives may be created just by the media, which is an extremely potent instrument. It is frequently charged with creating and/or enforcing preexisting notions which may be stereotypes. This depends on how individuals are portrayed in the media; trials can manipulate the feelings of their audience. The public and media investigate for the whole course of a criminal case that is now pending in court. Today's world is dominated by media in large part because of "digitization," which was brought about by globalization.

India also contributed to modernizing its infrastructure and establishing the nation on a worldwide scale. Among the

various areas that the media covers nowadays is the phenomena known as the "media trial," which has garnered notoriety recently. Some have criticized the phrase "media trials" for being in contempt of court.

The media is sometimes referred to as the fourth arm of government because of the crucial role it plays in preserving and advancing the values of a democratic and free society. Its importance is greatly appreciated and generally acknowledged. The Indian Constitution's Part III guarantees essential rights, one of among it is the "right to freedom of speech and expression," which is codified in Art 19(1) (a).

Although not totally unrestricted, this freedom may be looked with reasonable limitations, as in Art 19(2) of our Constitution under the "security of state" clause. The Indian Supreme Court ruled in the **Romesh Thapar vs State of Madras case** that press freedom is a subset of the most important aspect of freedom of speech and expression, because it is entitled to the same protections and limitations. However, preserving the media's freedom while guaranteeing its prudent use has proven to be contentious.

In India's past, our media has played a significant role. In special, when it has employed as a tool to secure India's independence during time of our British colonial era. Due to the impact of the media's growing power, the Indian colonial administration created some number of laws intended to control it. Since then, digital and audio-visual ways and these structures have achieved popularity over print media and other related areas. Its impact on people's lives has significantly increased on account of the developments.

Fundamental rights are human rights. They are those that one has by inbuilt blessing of being a person from birth. These presence of rights of people are unalienable. Human rights are also treated as inalienable rights. Humanity is defined by its human rights. That is the catchphrases that we encounter daily.

To assure the presence and significance of Rule of Law, in society, everyone must acknowledge, defend, and uphold human rights. However, challenges to human rights can come from various part of society, including people, communities, organizations, state entities, and groups. Everyone supports human rights, yet it has come to light over time that we increasingly often violate, ignore, and treat them with disdain. Every person is now concerned that their rights may be violated by the state, other individuals, groups, and organizations.

The Violations of established principles underlying human rights will happen in many different forms. The issues on account of human rights violations are clearly obvious in a series of situations, including slavery, bonded labour, women's subjugation, extrajudicial executions, and disdain for one's own dignity and independence. In addition to being a personal tragedy, the denial of the value of human rights causes social unrest.

Information is communicated and topics that people discuss with one another are shaped by radio, television, and newspapers. Some crimes garner significant media attention, which poses a problem for the concerned parties in the process. Irrespective of how the role of media has covered the issue in the past, each juror should consider the evidence impartially. When giving information on specific instances, the parties could become involved with journalists and the media at large. There is a common belief that juries and witnesses respond differently depending on how the presence of media portrays specific judicial proceedings.

There are many initiatives to control the public discourse in the media worldwide, particularly by criminal justice systems. The freedom of the media to report on criminal matters is deemed conditional in many nation-states. Numerous legal systems, such as the Indian legal system, provide that a party's important right to freedom of speech and expression does not include in engaging in systemic contempt. It is necessary to ascertain whether the court systems' reasoning for restricting media freedom is connected to their perception of the media's influence on the criminal justice systems. It is important to determine how the media affects the systems.

The most important right to fair trial is one of the fundamental rights guaranteed by our Constitution, which is said to form its essential framework. Freedom of speech and expression grants the media the authority to broadcast views regarding specific people. Unfortunately, there are many limitations to this right.

As soon as the media reports lean on the part of defamation or having a biased reporting, the rules of justice are broken. Examples of how the media may occasionally pre-empt legal procedures include the reporting of famous death of Bollywood Actor, Sushant Singh's death and the young girl, Aarushi Talwar murder case, which may affect badly on the public opinion and court results prior to a verdict being rendered.

The media trials on which the journalists works as the juries and judges, usually violate both the essential principle that every parties are deemed to be innocent unless and until proven guilty and the right to an justifiable and impartial trial, these instances of various cases highlight the need to draw a balance between the freedom of the press media and the right to a fair and just trial.

There are five sections to this study. The first section is aimed to be introductory. The criminal justice system and the importance of the role of our human rights is the topics of the paper's second section. The final section covers topics including spectacular false news, media trials, and the criminal justice system. On account of the requirements of the Contempt of Courts Act, 1971, the next part of this section is of the study critically evaluates press freedom and contempt of court.

1.1 Human Rights and Indian Criminal Justice system

The importance of the value of our Human rights and its values has existed since the formation of society, but they became more widely recognized in the 20th century. Humans have always had a natural desire to protect their identity and belongings. Human rights can be viewed in two primary contexts: the legal and moral rights. Legislation is a tool for enforcing rights; it is not a blessing from any political authority, even if it is intended to protect and respect basic rights. Due to the, the State need to recognize each person's inherent rights and provide the mechanisms necessary to protect them. We can see several international agreements that highlight certain rights that are treated necessary for a human life deserving of dignity.

Additionally, basic texts require the States to reserve that our fundamental rights are trusted and protected in all relevant jurisdictions, free from discrimination of any kind.

Most of these rights can have unwelcomed effects of the Indian legal system. They are specifically mentioned in Indian Constitution and various legislation that deal with criminal law. Also, the judiciary has acknowledged and upheld them using a variety of interpretive techniques. When an individual interacts with our criminal judicial system, the Indian Constitution, through the triangle of Arts. 14, 29, 19, 30, 21, serves as a shield against violations of human rights. The importance and value of famous rule of law is given life by the rights to equality under Art 14, the six freedoms under Article 19, and at last the right to life and personal liberty, as stated in Article 21, which shields everyone from the government's infringement on their rights.

1.2 The Criminal Justice System, Fake News Sensationalism, and Media Trial

Most people have always relied on the role of media to be an active source of news, much before the development of contemporary media channels and technology. With the printing press, which Johannes Gutenberg invented, information could be copied in large quantities. During early 1800s, German printer named Friedrich Koenig initiated the printing process. Books and newspaper inserts evolved as the standard means of thought sharing. As a result, the medium was created and quickly gained popularity. The media has expanded beyond newspapers in the modern era. We live in an era with a wide variety of information sources. Print, electronic, digital, social media, and other media are the instances of these media kinds. The earliest and most fundamental types of mass communication is print media. Even with the development of the electronic media and technology, its role in material provision and information transfer remains crucial. It will be found in periodicals, newspapers, journals, pamphlets, and other formats.

The emergence of our electronic media expanded the realm of communication and the media. During 20th century, this method of information distribution gained a lot of popularity. It made information distribution and collection quick. The globe united into a global community. It simplified communication and altered the ways in which information was sent and received.

Electronic media includes broadcasts on television and radio. The emergence of the digital era occurred after the second part of 20th century. As the internet grew, it incorporated satellites, digital wires, and binary communications. These days, scientific and technological innovation is advancing and altering communication methods as well. Digital media may make different forms, but some examples include podcasts, films, digital art, and more.

(a) Sensationalism, Fair Trials, and Media Trials

The phrase "media trial" has gained a lot of traction in the contemporary context. Usually, it is contrasted with a fair trial. The term "media trial" is frequently used to characterize the effects of printed or visual media coverage on an individual's reputation both before and after a legal trial. These days, these reputations can also be built on social networking sites. The media trial has become overly prominent. It is to do with the media releasing information's about the suspect, an accused person, or a convicted person before the trial is over or after the sentence has been served.

(b) Hate speech and fake news

The rising incidence of false news is yet another concern that requires a much careful thought. Since the invention of the printing press, fake news was a problem. However, with the upcoming of technology, the internet, and social media, its reach has expanded. It is becoming into a legal issue as well as a social problem, creating a hostile environment that eventually sparks riots, lynchings, and a state of lawlessness. Fake news includes things like rumors, altered photos, unsubstantiated information, and purposefully fabricated articles. Approximately 448 million people in India use social media sites regularly. Social media sites have the power to witch-hunt anyone with the use of altered images, unreliable information, and other bogus sources.

1.3 Press Freedom and Criminal Disobedience

As was previously said, the media's function in the system of democracy is to guarantee accountability and openness. It also plays a vital role in educating the public and accelerating public awareness to make a venue for general discussions and debate. It is essential to the formulation of public policy and the upholding of punitive measures. Looking back on our history, we can see that a variety of media outlets played a vital role in the country's independence movement. Newspapers were a medium of communication utilized by liberation fighters like Mahatma Gandhi and Bal Gangadhar Tilak to spread the message of independence.

Because of the widespread usage of newspapers, the imperial government was forced to establish strict censorship restrictions on their publishing. The concept of Freedom of speech and expression was acknowledged as one of the essential liberties and the guardian of a democracy at the time the Constitution was written. This freedom of media and press has recognized and construed within the parameters of Art 19(1) even though it was not explicitly included (a).

Press freedom to disseminate ideas through publishing and distribution is covered under Article. 19 (1) (a) itself. The Hon'ble Supreme Court observed in Bennett Coleman case 101 that there are no publishing restrictions on the press's freedom of propagation and distribution. Art. 19(1)(a) protects this freedom, which also includes the right to express thoughts and opinions verbally, in writing, in images, etc

Therefore, even though clause(i) & (ii) especially address scandalizing or undermining the jurisdiction of the court as well as bias and inclusion in the very particular process of Judiciary under clause (iii) opens the door to any publication that impedes or threatens to impede the importance of securing justice in any other way. Understanding the term "administration of justice" in mean to the old traditional principal of criminal justice system is therefore fascinating. The Act contains no

definition for the term. The term "administration of justice" has a broader definition that encompasses management by other institutions and by the court. This follows one meaning of the term "administration of justice":

“...*The administration of justice includes not only the courts but also law enforcement officials and other people whose jobs it takes to keep the courts operating efficiently. The administration of justice is concerned with maintaining rights and punishing wrongdoers in a fair, just, and unbiased manner in accordance with the rule of law.*”

II. LITERATURE REVIEW

(**Shaikh, S. 2020**) Our Media is frequently referred to as India's "fourth pillar" because of its critical role in sustaining democracy and engaging the general public. When it comes to informing and enlightening people, while sometimes media is crucial. In recent times, though, the media has overreached itself by penetrating courtrooms with its lens and staging parallel trials of its own. The media trial has become standard procedure because of the shift from responsible reporting to looking into several high-profile instances or cases of notorious crimes. The media has gone too far, from striving to maintain relevance in the face of change to pursuing the greatest television rating points.

(**Nityanand, V. 2021**) Suspects and miscreants continue to be distinguished by a narrow line. Also, it appears that powerful entities like the media are unaware of this discrepancy and incongruence. It should not come as a surprise that the strongest democratic basis is deranged by such an unenlightened view of matters that happened with the highest contempt for personal privacy. We are all stunned by the precedents set by both current and historical events, and we find ourselves wondering why the fourth pillar of the most extensive democratic system in this world is an institution that operates so haphazardly. This is a status that is occasionally indecent but also holy and respected.

(**Oommen, G. 2018**) Investigative journalism is a journalistic practice that extends beyond the mere reporting of news occurrences. It entails using initiative to obtain the necessary information to gather news. In this instance, the information is not available. The presence of Investigative journalism is the phrase made to describe the nature of additional work needed for this kind of news gathering. In India, this approach is becoming popular. This research is necessary because, despite being a signatory to UN Declaration of Human Rights and the following International Covenant on Civil and Political Rights (ICCPR 1966), India has not included privacy in its Constitution, irrespective of the fact that the press is acknowledged as a basic right.

(**Hassan, A. 2021**) The origin and development of television, cable networks, the internet, and social media has led to an alarming increase in the publicizing of misdeeds. This might lead to the unjust conviction of innocent people or deny the accused their right to fair and just trial. The right of the accused person to get a fair and good trial or their right to life and personal liberty cannot be violated in cases when the constitution protects press freedom. The "eyes and ears of the general public" are said to be the media.

2.1 Objectives of the study

- Examine Article 19 (1) (a) of our Constitution which guarantees the availability of freedom of speech and expression and Article 19 (2)'s reasonable limitations on it with relation to media reporting.
- Assess the judiciary's handling of the instances of the media trial with the light of media freedom and the defense of the right to a fair and just trial.

2.2 The Scope of the study

In the realm of India, the research on "*Media Trial in the Age of the Internet: A Legal Analysis*" may have a rather broad scope because it examines many facets of media and how they affect the judicial system. These are the summary of possible scope items:

Definition of Media Trial

- **Concept and Evolution:** What constitutes a "media trial," where it came from, and how it was changed in India.
- **Effect of the Internet:** How online news portals, social media, and other platforms have increased the impact of media trials.

Role of Media in Judicial Processes

- **Free Press vs. Fair Trial:** Preserving press freedom while upholding the Indian Constitution's guarantee of a fair trial (Article 19(1) (a) vs. Article 21).
- **Influence on Public Perception:** A synopsis of Indian laws pertaining to media and its trials, including.

2.2.1 Legal Framework Governing the Media Trials

- **Relevant Laws:** An overview of Indian legislation governing media trials, comprising:
 - The Contempt of Courts Act, 1971
 - Indian Penal Code (defamation, hate speech, etc.)
 - Cable Television Networks (Regulation) Act, 1995
 - Information Technology Act, 2000
- **Judicial Precedents:** Important rulings from Indian courts regarding the legitimacy of media trials.

2.2.2 Challenges Posed by the scenario of Internet and the social media

- **Virility and Misinformation:** How the internet allows news, ideas, and occasionally disinformation to travel swiftly, altering public opinion.
- **Echo Chambers:** The way biased narratives are reinforced by platforms powered by algorithms.
- **Trial by social media:** How remarks made on social media (hashtags, viral campaigns) might affect court cases or cause prejudice.

2.2.3 Impact on the Judiciary and Legal Processes

- **Judicial Independence:** How public opinion might influence judges or legal institutions to act in certain ways through media scrutiny.
- **Prejudicial Reporting:** Case studies where undue media attention caused a fair trial to be disrupted or prolonged legal processes.
- **Sensationalism and Ethics:** Ethical issues with sensationalist reporting in the area of media and the "race for breaking news".

III. METHODOLOGY

This particular research will utilize primary and secondary sources.

3.1 Primary Sources

- **Judicial decisions:** Evaluating judicial rulings, particularly those in well-known cases that have been impacted by media trials (such as the Sushant Singh Rajput and Aarushi Talwar cases, among others).
- **Interviews:** Interviewing public policy analysts, media workers, and legal experts (judge, attorney, and scholar).
- **Surveys:** Assessing the public's opinions, the role of media and freedom speech and expressions.
- **Target Groups:** The general public, journalists, law students, and mass communication majors.

3.2 Secondary Sources

- **Legal texts and statutes:** Examining court rules on media behaviour, statutory regulations (Contempt of Courts Act, 1971), and constitutional provisions (Article 19 - freedom of speech and expression).
- **Academic literature:** examining the body of research on media trials and their effects on society at large.
- **Media content:** Content analysis of social media messages, TV discussions, and news stories about well-known incidents.
- **Comparative Studies:** comparing the circumstances of media trials in various jurisdictions (UK, USA).

3.3 Sampling Techniques

- **For Interviews:** To choose important informants, purposeful sampling will be employed (judges, top attorneys, journalists).
- **For Surveys:** Respondents are categorized according to age, occupation, and educational background in stratified random sampling, which guarantees a broad representation of different societal strata.

3.4 Data Analysis

- **Qualitative Analysis:** We will do a thematic analysis of court records and interview replies to find reoccurring them media shapes public opinion and legal procedures.
- **Quantitative Analysis:** Statistical study of survey data to find trends in the public's impressions of the media trials (using SPSS or a comparable program).
- **Case Law Analysis:** Examining rulings to see how courts have addressed media trials and their effects on due process and fair trials.

3.5 Legal Framework Analysis

The effectiveness of India's legal system in preventing excessive media influence will be examined, including:

- The Right to a just and a good fair trial (Article 21) vs The freedom of press (Article 19(1) (a)).
- The employment of the instances of contempt of court rules in controlling media overreach.

The famous Press Council of India has made rules on media behaviour, findings from the Law Commission, and Supreme Court guidelines.

IV. CONCLUSION

Being considered as the fourth pillar, in democracy, it was expected that the role of media would work together to

assure that the high pioneer of rule of law is upheld. To build the foundations of democracy and the justice, the general media will take on the position of educator for the ignorant people of that age. A free and open public discourse is essential to our democratic government's correct operation. People trusted and looked up to the role of media for its ability to act as the check on the state authorities, as seen in cases where it exposed gaps in police authorities investigations, busted rackets, and decide the people accountable for their own actions. However, in modern times, media trials have given way to media verdicts and judgements, upon which the media issues verdicts and sentences without conducting a thorough investigation to uncover the truth. In addition to the legislative, executive, and judicial branches of government, the media works as the fourth estate and is hence essential to our society.

This is an essential information source that protects democratic ideals, makes and molds the public opinion, also raises public knowledge irrespective of any language or location. Our constitution authors saw the requirement of right to freedom of speech and expression for the press after independence, and thus enshrined these rights in Article 19(1) (a). To avoid such abuse, this rights, are not unqualified and perhaps will be limited in tune with Article 19(2). Although an independent and free press is vital, its unchecked influence can violate people's rights, including their right to privacy. The modern media landscape has grown dramatically, with both beneficial and detrimental effects. Although it informs the public on government policies and activities, it frequently goes too far by getting involved in court cases, holding media trials, and possibly jeopardizing the impartiality of legal procedures. Such acts may distort public perception, impede the legal system, and infringe upon the accused person's constitutional right to have a just and fair trial.

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Legal Regulations for Ensuring Human Environment and Sustainability Rights in India

Nithin J R, Research Scholar, School of Law, VELS University, VISTAS
Dr. Ratheesh Kumar, Assistant Professor, School of Law, VELS University, VISTAS

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Abstract

It is essential to find solutions for societal issues because of the planet's environmental crisis and its ability to sustain the well-being of humans. In this context, "transformations towards sustainability" gain prominence and institutionalize themselves more deeply in global policy and intellectual discourse. Reorienting and modifying government activities and processes is necessary for transformations towards sustainability. In spite of the many different stakeholders involved in managing the transition, this article examines the role of the legal system in directing the process of change toward a more equitable and sustainable future. The relationship between both strategies has been recognized in several global and geographic regions musical instruments UN subsidiary organization legislation, conversation results records, and court rulings that view in the realm of human rights as a practical mechanism for promoting environmental protection goals. The majority of groups, governing bodies, and even academics have considered environmental deterioration and abuses of human rights as unconnected issues, despite the apparent link between both. Environmentalists have a history of ignoring the effects caused by environmental abuse on human populations in favor of protecting natural resources. As a tactical instrument, judicial intervention can influence behavior, opening the door to transformational shifts. The study provides an original multidisciplinary analysis of representative Indian climate change legal choices situated within the sustainability transitions rhetoric supported by the environmental rule of law, drawing on the social science literature. By examining policies, actions made by human rights and environmental organizations, and rulings from different tribunals, this study aims to outline the association between preserving the environment and fundamental rights viewpoints.

Keywords: - Earth's Environmental, And Human Rights, Indian Climate Change, Judicial Pronouncement, Environmentalists, Transformation, Rule Of Law, Natural Resource, Organization.

"Without respect for the rights of humans & the rule of law, there cannot be development without peace, nor there sustainable development without enduring peace."

Former UN Deputy Secretary-General Jan Eliasson

I. INTRODUCTION

India, a country of 1.34 billion people, has a variety of laws and enforcement organizations to suit the needs of a rising, market-driven society. Both at the federal and state levels, there is a robust legal framework, an effective policy on the environment, and well-established institutions. But as India's economy grows, so does public awareness, and this has caused a desire for better environmental quality. The goal of environmental legislation and related standards is to guarantee the preservation of ecological balance and environmental quality requirements. The state has additionally profited from the

adoption of environmental norms by world organizations and industrialized countries, which has helped improve local requirements.

Robust ministries, such as the Ministry of Forestry, Environment, and Climate Change, assert that they function under the banner of sustainable development. Nevertheless, the established norms and regulatory tools—which are sometimes dispersed and sector-specific—have not been able to accurately represent the interconnectedness of ecological health and human welfare. Specialized green tribunals linked to environmental governance are among the additional institutions that have been inspired by the disparity between the rising demand from the public for preserving the environment and the enforcement's inability to carry out the relevant laws and regulations. As such, the significance of court action to safeguard the natural world and ecology is increased.

This Background Paper aims to provide a description of the subject of environmental human rights and to study the relationship between these two domains. It aims to offer some standard groundwork for conversation. Some difficulties cut across. The association between the fundamental values of human rights and the imperative of environmental conservation and protection at the international, regional, and national levels raises an assortment of important questions. Legal analysis is an appropriate fit for the two fields of conservation of the environment and human rights. The authors took into account the reality that the conference attendees come from an assortment of disciplinary experiences, despite the fact that many of the concerns discussed in this paper have been addressed from a legal perspective. There are several ways to address the relationship between the rights of humans and the environment, including from the perspectives of political science, economics, sociology, ecology, and the relationship between nations.

Contrarily, a right to an environment that is healthy indicates the recognition of a distinct, autonomous human right that is not reliant on the already-existing protected rights acknowledged in the global agreements. For instance, a victim need not provide data to back up the claim that an environmental issue is to blame for the violation of their right to life or any other right. In case it is possible to define the specifics of this right, then a victim should be able to prove that their right to maintain a healthy environment was infringed.

The United Nations Environmental Program (UNEP) Report for 2021 states that systemic transformation is necessary to guarantee sustainability. The revolution "will involve a fundamental change in the economic, technological, and social structure of society in general involving perspectives on the world, norms, values, and management. "The objective of a changing future is to "integrate[ing] people and planet across scales" to attain human security and integration into society within an enduring and resilient earth system. "An expansive viewpoint helps prevent lock-ins and generates options for accelerating and leveraging the transformation concerning sustainability growth," according to this description.

Two of the primary objectives of modern international law are the environmental conservation and human rights. After the UN was founded, the preservation and development of the rights of people became the world community's top priority. It wasn't until 1972 that domestic environmental preservation voices started to make a significant impact on international politics.

International instruments relating to human rights recognize essential human rights like the right to appropriate housing and food, the right to secure and nutritious employment, and the right to health. Large superstructures, mega dams, large industrial units owned by MNCs, mining, and tourism-related activities are all part of the current unsustainable development scenario. These projects have the potential to uproot millions of people in a single blow without including their social and economic factors, and cultural elements of life. Numerous people have been impacted by dam construction, mining operations, fast industrialization, and urbanization. Here is the exact reason why, in every location where these kinds of initiatives are either proposed or already have been implemented, the voice of protest is now present.

1.1 The Connection Between Human Rights and Environmental Degradation

Traditionally, human rights and laws about the environment have been seen as two distinct and independent areas of rights. However, by the close of the 20th century, the notion emerged that environmental protection might be furthered by situating it in line with human rights, which by that time had accumulated substantial recognition as an issue of international law and custom. Divergent perspectives regarding how to address "human rights and the environment" are to be expected given the number of intricate obstacles that arise when both these industries meet.

The preservation of the natural environment and the officially recognized rights of people can occasionally clash. However, there is unquestionably a rhetorical and moral benefit to treating environmental concerns as human rights issues. The concern of whether international laws on human rights can help safeguard the environment is still open for debate, while academics have spoken extensively about the connection between environmental conservation and human rights. According to Dinah Shelton, environmental preservation and human rights constitute "overlapping cultural principles with core shared goals." Rather than adding additional rights to existing treaties, we must talk about a "greening" of current laws governing human rights since it relates to the environmental components of rights included in proclaimed international agreements on human rights.

1.2 Universal Instruments

There are two ways to track the connections between human rights and environmental rights: either one looks at international environmental law and looks for standards relating to human rights within it, or one looks at present-day international human rights framework and looks for environmental rights. The UDHR, ICCPR, and ICESCR are three major

international human rights providers that do not specifically include the right to excellent environmental preservation. Nonetheless, the environment was brought up concerning cleanliness in the ICESCR (Article 7). The environment is addressed in the context of preventing sickness and malnutrition under the Convention on the Rights of the Child (CRC). Article 24, paragraph 2(c) of the CRC mandates that States aim to ensure that every child has access to the best possible quality of health, taking into account the risks and hazards associated with environmental pollution.

1.3 The Perspective of India

Many human-centric operations, such as development, urbanization, and extensive resource extraction, have created a state of natural imbalance in India. These activities have had serious long-term effects on the environment, including global warming, floods, droughts, environmental refugees and migration, diseases, ozone depletion, and numerous other issues. Urbanization was necessary to house a large number of people, and industrialization was necessary to meet their needs. Simultaneously, the state of circumstances is exacerbated by an absence of robust legislative actions. It is significant to observe that the nation, which was self-sufficient in natural resources before, is now threatened by these resources, which include water, air, forests, and diversity.

1.4 Agreements on the International Environmental

India is a party to several international accords concerning environmental conservation. Since the Stockholm Declaration of 1972 established that there is only one environment on the planet. India is constrained to interpret and carry out the provisions of certain international accords inside its boundaries as a signatory. The fifth paragraph of Article 51 of the Indian Constitution makes this quite clear: the state is to promote respect for international legislation and treaty responsibilities.

On the other hand, another important provision regarding ecological protection is found in Article 253 of the Constitution, which gives our country's Parliament the authority to pass laws that can be implemented across the entire country or to any specific territory to carry out any agreement or commonly held opinion signed with other countries or countries.

To put judgments addressed at any international conference into effect, parliament may also pass further legislation. A court cannot challenge any provision enacted in the discipline of preservation of the environment under Article 253 read with Articles 13 and 14 because it lacks legislative authority.

1.5 The State's Role to Protect the Environment

Article 47 requires the state to monitor the rising levels of dietary intake and living standards of its citizens. Enhancing public health is also the state's main responsibility. The use of alcohol and narcotics, which can be harmful to the health of living things and seriously endanger their lives, must be outlawed by the state unless prescribed by a physician.

Based on the definition given to the term "responsibility," the state should execute effective, adequate, and required actions to enhance everyone's health and quality of living and to increase knowledge in the context of ecological preservation." Environment development efforts cannot be pursued by those who pose a threat to civilization as a whole. As a result, the government must closely monitor these efforts and behaviors.

Through the use of legal proceedings in the public interest and the opening up with respect to the rule of standing, the judiciary has been instrumental in the growth of environmental jurisprudence, particularly in interpreting constitutional provisions and national laws about global environmental legislation and human rights laws worldwide.

II. LITERATURE REVIEW

(O'Donnell, E. L., 2018) As the demands on water reserves increase, there is a rising need for innovative legal frameworks that address water abuse and insufficient ecosystem health supplies. One innovative and evolving tactic is to use juridical status for offering rivers legal rights to safeguard their water systems. While this is a significant advancement in the fields of environmental legislation and water resources management, there is little information available about the strategy's application and use.

(Pelizzon, A., & Clark, C. 2020) The last ten years have witnessed swift creation of rights enjoyed by nature in a variety of circumstances, which has led to a rise in the public's awareness, acceptance, and acknowledgment of these rights across the world. However, far too frequently, research papers and press reports fail to highlight the crucial aspect, namely Indigenous individuals have continuously impacted and frequently spearheaded the most revolutionary cases involving the rights of nature. While noting that not every Indigenous person embraces the rights of Nature, we examine the ontologies of earth jurisprudence and rights of Nature in this article, as well as the relationship of these organizations with the governing bodies of Indigenous individuals in asserting and implementing their rights.

(Aggarwal, P., 2019) This paper aims to conduct a thorough analysis of the Sustainability Reporting (SR) and Corporate Social Responsibility (CSR) practices of Indian companies concerning disclosure with respect to both quantity and quality. Furthermore, it will explore the variations in SR actions by industry, firm size, economic viability, ownership structure, and SR dimension. The Corporate Responsibility Reports (BRR), Sustainable Reports, CSR, and annual reports of 61 of India's

top-listed firms are the primary sources of the data. An all-inclusive index for sustainability reporting is created. The method of content analysis is applied. Inter-coder dependability has been demonstrated.

(Arya, S., 2020) An additional supplier of precious and precious metals is electronic trash. Urban mining of these minerals has drawn a lot of interest lately since it offers enticing possibilities, increases financial possibilities, provides a means of subsistence, and eventually helps achieve the Sustainable Development Goals (SDGs) of the 2030 agenda. Due to the existence of hazardous chemicals, the substantial amount of E-waste proves to be an enormous struggle. Due to the massive production of e-waste and its detrimental effects on the natural world and in the field of public health, there exist multiple problems beyond current treatment remedies.

2.1 Objectives of the study

- Ascertain if there are any holes or inadequacies in the current legal system that make it more difficult to preserve the rights to the environment and sustainability.
- To find areas for improvement, compare India's environmental laws with those of other countries, as well as best practices and international legal frameworks.

2.2 The Scope of the Study

Research that looks at the laws that India has in place to protect the rights to the human environment and sustainability will probably cover a diverse array of topics, including:

- **Environmental Laws and Policies:** examining the regulatory structure that is now in place in India with regards to sustainability and protection of the environment, including the Water (Prevention, Control, and Regulation of Pollution) Act of 1974, the legislation known as the Wildlife Protection Act of 1972, and the Environment (Protection) Act of 1986.
- **International Commitments:** looking at India's responsibility under international conventions and agreements, like the Convention on the Conservation of Biological Diversity and the Paris Agreement, relating to environmentally friendly development and the preservation of the environment.
- **Judicial Precedents:** Analysing significant rulings rendered by Indian courts that have influenced environmental law and created guidelines for preserving the rights to the environment and sustainability.
- **Government Initiatives and Programs:** Evaluating the effectiveness of government initiatives and endeavors like the Swachh Bharat Mission and the National Action Plan on Climate Change that are meant to solve problems with the environment and encourage sustainable development.
- **Stakeholder Engagement:** Recognizing the responsibilities of different stakeholders to safeguard ecological law compliance and promoting sustainable practices, such as local communities, businesses, and Non-Governmental Organizations (NGOs).

By defining the study's parameters in this manner, researchers may conduct a thorough analysis of India's legal framework for sustainability and environmental protection, which will allow them to influence policy debate and decision-making in this crucial area.

III. METHODOLOGY

One can use a thorough approach that includes the following stages to investigate the laws in India that provide rights related to the environment and sustainability:

- **Legal Analysis:** Examine significant Indian laws and regulations dealing with sustainability and environmental protection, such as the National Green Tribunal Act of 2010 and the Environment (Protection) Act of 1986, the Water (Prevention and Control of Pollution) Act of 1974, the Air (Prevention and Control of Pollution) Act of 1981, and the Environment (Protection) Act of 1986. Examine these laws' advantages, disadvantages, and shortcomings in safeguarding the rights to sustainability and the preservation of the environment.
- **Comparative Analysis:** Examine how India's legal system stacks up compared to global norms and best practices for sustainability and environmental preservation. Determine what India may learn from the encounters of other nations and take steps to fortify its legal framework.
- **Policy Recommendations:** Create policy recommendations based on your research to strengthen India's legal framework for defending rights to the environment and sustainability. Legislative changes, enforcement protocols, strengthening capacity projects, and participation of stakeholder's tactics should all be covered by these recommendations.
- **Public Awareness and Advocacy:** Through outreach initiatives, workshops, and advocacy campaigns, increase public knowledge of the value of preservation of the environment and sustainable rights. Encourage encouragement of policy changes and legislative changes that advance a more just and sustainable course for prosperity.

- **Monitoring and Evaluation:** Provide systems for tracking the use of suggested policy actions and assessing their long-term effects on the rights to a sustainable human environment. Update and improve tactics often in response to new situations and lessons discovered.

By utilizing this approach, you may carry out an in-depth investigation of the laws that guarantee the rights to the human environment and environmental sustainability in India and help create useful policies and strategies in this vital field.

IV. CONCLUSION

According to one's position on the link between advocacy for human rights and the environment, it is clear that preserving an unhealthy environment significantly impacts the enjoyment of human rights. The connection between human rights and environmental protection benefits both the safeguarding of the environment and the advancement of the human rights framework. This makes it possible to extend the defense of individual rights in the natural sphere.

India has a massive population, and it also has significant internal difficulties that are a reflection of social inequality, poverty, the country's vast size, bureaucratic incompetence or indifference, and widespread corruption. The tripartite system of checks and balances between the Executive, the Court, and Parliament—which was given to India after it gained independence in 1947 and is ingrained in Western common law constitutionalism—continues to have inconsistent success. The clumsy legislature with multiple parties. Due to regulatory authorities' inability to address environmental problems, the system of justice has emerged as the primary and most appropriate venue. To preserve and enhance the environment and ecology by Article 21 of the Constitution, a transformative process that is polycentric, participatory, and democratic has been encouraged by the liberal "aggrieved party" standing and the broader "a representation and citizen remaining" in environmental PILs, as interpreted by the National Governance Tribunal (NGT).

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Role of Smart Contract in Arbitration: A Critical Analysis

M.A.D.S.J.S. Niriella, Professor, University of Colombo, Sri Lanka.

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Abstract

Smart contracts are programming programs that, without any involvement of a reliable authority, can be reliably carried out by an internet of mutually distrusting nodes. Smart contracts, which are integrated into blockchains, allow an agreement's terms to be automatically enforced without the need for a third party to be contacted. The advancement of technology has been continuing for a while. Technology's advancement has made it possible for it to enter the legal sector and, with it, the complementary conflict resolution sector. Given this, the writing aims to accomplish three goals. It starts by discussing the arbitral framework, which does not categorically prohibit the use of new technology during arbitral procedures. Second, it looks at how arbitration and new technologies—like blockchain technology, intelligent contracts, large-scale data, intelligent machines, and cryptocurrency—work together. It suggests that whereas advances in technology improve and expedite the resolution of disputes, the arbitration process offers protection to the tech sector and these developing technologies. The key characteristics of blockchain technology that make it one of the most revolutionary technologies today are its decentralization, self-control, peer-to-peer relationships, fixed records, and time stamps. This article, therefore, focuses on the use of block chain technology and its crucial role in the digitalization of land records within the context of India. However, the lack of widespread adoption of smart contracts is primarily due to users' lack of clarity about whether they could be enforced as relationships under state contract laws nowadays in operation.

Keywords: - Technology, Blockchain Technology, Contract Laws, Smart Contracts, Potential Technologies, Cryptocurrencies, Artificial Intelligence, Arbitration, Digitization, Indian Scenario.

“Arbitration is private. It doesn't have the tools to dig into the corporate files. It's usually controlled by arbitrators who want repeat business from corporations not from the injured person”.

—Ralph Nader

I. INTRODUCTION

Bitcoin technology is being embraced by the technological, commercial, financial, and legal sectors with increasing frequency, and they have created blockchain inventions for use in a variety of various scenarios within their respective domains. Blockchain applications have become more refined as developers have created them, and users have expanded from a small group of early adopters to numerous large organizations and even international financial institutions. Prominent media outlets and legal journals have reported on the explosive ascent of blockchain technology, showcasing its quick development and limitless potential uses. While the overall discussion surrounding blockchain technology and its consequences has grown over the past few years, a notable blockchain implementation grabbed attention recently. Smart contractual arrangements are not new; the first officially recorded references to the instruments emerged in the 1990s and characterized it as a mechanism

including, “*Many organizes of contractual terms such as liens, bonds, [and] delineation of rights to property*”. that record and perform transactions between both parties on the distributed ledger. Smart agreements rely on robotics and the interconnected capabilities of blockchain technology to link parties, trade considerations, and record transactions.

The present digital contracts are largely used for straightforward interactions that require an “if-then” function. Banks and financial organizations have begun to invest in and exploit blockchain technologies, noting its greater efficiency in computerized transactions and decreased operational expenses. Recently, academicians, legal professionals, government departments, and legislators from states have begun debating how to interpret and govern smart contracts consistently.

New technologies are promoted to boost effectiveness, cut costs, and permit the growth of arbitration into novel segments of the market. Efficiency, besides expense management, have been defined across many countries as the key goals or prerequisites for the operation of arbitration. Nevertheless, the widespread introduction of these innovations will unavoidably result in fresh categories of complicated issues cantered in either the underlying unique aspects of the innovation or the lagged regulatory environment to that exist as subjected.

Having stated the notion that binding arbitration boasts of a distributed regime, adaptability, and an assisted implementation system, is rendered one of the best ways to deal with those issues. Therefore, in the distance lay a synergic connection whose mutually advantageous advantages are ripe for appropriation. While the coming technology will enhance the process of arbitrage, arbitrators will present certainty, in a relatively uncertain environment, that there exists an acceptable venue for the settlement of any consequent problems.

1.1 Arbitral Framework

Is it possible at all for all participants and parties to the arbitration process to employ modern technology under the underlying arbitral framework? All arbitration professionals surely have this urgent question on their minds at all times. The topic of arbitrators' roles being substituted is even more pressing: will they soon lose their jobs?

- Using Innovative Technologies in Arbitration within the Existing Arbitral System In essence, the introduction of advanced technology in arbitration procedures is not completely precluded by the existing regulatory framework. Because the choice of arbitrating and the process for carrying out the arbitration are governed by a contract, the two sides and the arbiter have a great deal of operating discretion.

The UNCITRAL Model Regulations on Arbitration in International Commercial Matters, or "Model Law," stipulates in Article 19(1) that, “*The parties are free to decide how the arbitral tribunal will conduct proceedings, according to the restrictions of this Law*”. Moreover, the Model Law's Article 19(2) stipulates that, “*In the absence of a comparable arrangement, the arbitral panel may conduct the arbitration in any way it deems suitable, according to the conditions of this Law*”, and also has, “*The authority to judge any evidence's weight, relevance, materiality, and admissibility*”.

The standard way of establishing a partnership involves drafting a contract, which is essentially a set of promises made during a "conversation of the minds". Contracts can relate to personal relationships like marriages, even though they primarily serve a purpose for commercial partnerships—the topic of this article. For a long time, contract enforcement has been viewed as an essential responsibility of capitalist administrations, which is why contracts play an important role in politics in addition to "social contract" theories. The fundamental component of an economy based on free markets is the contract, whether it is upheld by government entities or otherwise.

The different types of interactions we can have are being drastically altered by the digital age. The digital revolution has opened the door to create new institutions and new means of formalizing the ties that comprise these organizations.

These agreements are an important part of daily life and are beneficial to us in many ways, particularly when interacting with businesses or other people. When it comes to protection, privacy, or independence, these conventional contracts have many problems. In the event of a breach of contract, participants must go through a rigorous process. To impose penalties on the other party and to meet their goals, they must engage with law enforcement agencies which requires an enormous amount of resources.

To tackle this problem, we required a digital solution that would transform how we communicate with individuals and organizations, swapping conventional paper contracts for electronic ones. Nicholas Szabo was the primary individual to use the term "smart contracts" in 1996 to address this issue.

Because such modern contracts are significantly more operational than their paper-based, inanimate predecessors, I refer to them as "smart" contracts. Intelligent technology is not addressed. Because they allow two entities to agree, smart contracts are the fundamental element of any blockchain application. Its function is quite similar to that of "protocols," which set down rules for communication across networks.

On the blockchain system, a transaction is initiated autonomously by the original agreement, managed by intelligent contracts, and it is not dependent on another party. Blockchain innovation makes intelligent agreements possible. Contract regulations specified in computer programs in an intelligent contract will be autonomously achieved when certain requirements are satisfied. Distributed blockchains are mainly used to store, reproduce, and modify smart contracts made up of events.

1.2 The Relationships of New Technologies and Arbitration

The complementary connection between arbitration and new technology will be covered in this section. Although a lot of evidence has been presented or hypothesized about the impending modification that technological advancements will bring to arbitration processes, it's also critical to consider the benefits that arbitrating disputes will provide for the expansion and possible widespread adoption of innovative technologies.

1.2.1 Digital Currency

The supposedly evident connection between cryptocurrency and arbitration is rarely discussed. However, given the growing recognition of digital money and the resulting intrinsic need for a well-tailored dispute-resolution process, it is worth discussing. International arbitration is comparable to the international nature of virtual currency, whether it exists on or off the blockchain.

1.2.2 Cryptocurrency and Intelligent Contracts

Decentralization, the absence of middlemen, and automation are some of the fundamental ideas of the technology known as blockchain and smart contract development, as previously mentioned. These ideas promise the security, longevity, immutability, and accessibility of a peer-to-peer network. Similarly, three of the most noteworthy characteristics of international arbitration are decentralization (64%), adaptability (38%), and ease of enforcement of verdicts (65%), according to a survey done in 2015 by Queen Mary University of London. Therefore, the advantages of arbitrators in disputes resulting from smart contracts—which are decentralized in and of themselves—cannot be overlooked. The inherent adaptability and easier enforcement that are features of international arbitration result from this decentralization.

1.2.3 Intelligent contracts

While the implementation of intelligent contracts on the block chain is designed to enhance the efficiency of the dispute resolution process, disputes may still occur. This could potentially give rise to a new set of challenges that will require the establishment of safeguards.

1.2.4 Master contracts

The possibility for disparities in handling disputes contracts or clauses across the contractual chain is an additional problem that needs to be addressed and protected against. Establishing early on the type of dispute resolution process to be used and how it will cascade through the contractual chain outlined above is crucial. Thus, it has been recommended that an umbrella contract be signed to guarantee consistency along the chain regarding the applicable laws, the procedure for resolving disputes, and the capacity to join or combine problems where appropriate.

Additionally, machine arbitration lacks the fundamental assets of metacognition and empathy. Additionally, they are incapable of justifying their choices, which puts them in conflict with some nations' legal frameworks. Finally, with the recent extraterritorial application of the EU-GDPR (European Union the General Data Protection Regulation), machine-generated choices that might not thereafter be explained are prohibited.

II. LITERATURE REVIEW

(Khivsara, H., 2021) Modern technology has interconnected itself into the world. It is connected with ingenuity and invention. The ongoing advancement in technology is the basic engine of the economic growth of every country. Millions of US dollars are annually invested by the governments to boost their technical game. It is present in numerous industries ranging from the construction industry, finance, and even the medical sector. Block chain is one of numerous technical marvels. It takes the form of data that differentiates itself from the others. This is because it stores information in several blocks and all of those blocks are linked to one other, thereby forming a chain.

(Beebeejaun, Z., 2022) International conflicts are common in the energy industry owing to the inherent complexity of contracts. The involvement of numerous Stakeholders with conflicting agendas (multinational corporations, state-owned enterprises, host states, and their citizens); (ii) the disparity of multinational jurisdictions (local laws, laws of the investor's country, international standards and laws); and (iii) modifications to legislation and rules throughout the years (long-term the natural world of energy agreements) are the factors that generate the complexity.

(Green, S., 2018) The conventional laws of contracts face multiple obstacles with the introduction of smart contracts. One of the biggest and most urgent concerns is how contracts constructed using computer code will require modifications to the forensic interpretation procedure. The logical design of smart contracts differs from that of human languages, which is not the only difference between the two languages that courts deal with. This implies that it is unlikely to be advantageous to hire an expert to translate everything literally so that a judge can comprehend it. Creating a test for "reasonable programmers" would appear to be a good place to start. Since smart contracts are self-fulfilling restoration could grow into a more popular remedy in the event of executory contracts.

(Dwivedi, V., 2021) Smart contracts and blockchain technologies improve the efficiency and automation of commercial operations. Decentralized Autonomous Organizations (DAOs) are gaining momentum, revealing that the application of blockchain technology has the capacity to alter both society and business. A Decentralized Autonomous Organization (DAO) is one in which smart-contract scripts representing business rules are carried out when predetermined rules are satisfied.

(Sharma, A. 2018) The term "blockchain" has garnered a lot of pay attention in the near past. The two most popular blockchain systems are Ethereum and Bitcoin, however, numerous additional platforms have just recently surfaced. However,

not all blockchain-based applications take advantage of smart contracts. Self-fulfilling computer protocols, or "smart contracts," are designed to confirm and enforce contract compliance. Even while the field is developing, there is still a great deal of uncertainty involving the idea. Because of this, choosing the platform is an important choice for the users. This essay will examine the pros and cons of five distinct blockchain-based smart contracts systems: the following: Ethereum, Bitcoin, Stratis, Lisk, and Neo.

(McKinney, S. A., Landy, R., 2017) By removing the inefficiency and unpredictable nature brought about by the present transaction environment, which includes banks, legal professionals, courts, regulators, and other stakeholders with opposing viewpoints, smart contracts are a ground breaking technology that has an opportunity to completely transform business transactions. However, a solid legal, commercial, and technological smart contract in the environment has not yet emerged due to disagreements about how electronic agreements are executed, confusion about their enforcement, and a lack of pertinent legislation and case law.

2.1. Objectives of the study

- Examine how smart contracts, which offer an auditable and unchangeable record of agreements and transactions and lower the possibility of fraud or manipulation, can increase openness and confidence in arbitration.
- Examine the potential legal ramifications of employing smart contracts in arbitration, encompassing matters concerning jurisdiction, the enforcement of smart contract provisions, and adherence to current legal structures.

2.2. The Scope of the study

A study on smart contracts' application in arbitration would probably include several important topics:

- **Overview of Smart Contracts:** An explanation of smart contracts' definition, operation, and importance in contemporary transactions.
- **Arbitration Process:** An overview of arbitration, including its advantages, disadvantages, and similarities and differences from traditional litigation.
- **Intersection of Smart Contracts and Arbitration:** An analysis of how arbitration procedures can incorporate smart contracts. This would entail talking about the advantages—like automation, efficiency, and transparency—as well as the drawbacks—like enforceability and the requirement for human interaction.
- **Enforceability and Legal Framework:** a rigorous examination of smart contract enforceability in arbitration that takes into account national and international legal systems. This would entail talking about matters like jurisdiction, governing law, and how conventional legal principles support the outcomes of smart contracts.
- **Ethical and Social Implications:** a review of the moral and societal ramifications of using automated methods to settle disputes, including concerns about justice access, bias, and fairness.

III. METHODOLOGY

A rigorous technique is essential to objectively analyze the function of smart contracts in arbitration. This is a suggested methodology for the investigation:

- **Expert Interviews:** Interview authorities in the areas of arbitration, blockchain technology, and law. These individuals can offer discerning opinions on the possible advantages and drawbacks of employing smart contracts in arbitration, as well as information on the many legal and technological issues at play.
- **Legal Analysis:** Conduct a thorough legal review of smart contract usage in arbitration. This should involve a review of pertinent laws, rules, and court rulings in addition to an evaluation of how smart contracts fit into the current arbitration frameworks of law.
- **Technical Evaluation:** Examine the smart contracts' implementation, security, scalability, and design from a technical standpoint. Examine these technical aspects about their appropriateness for use in arbitration, and note any possible dangers or weaknesses.
- **Comparison with Traditional Arbitration:** Examine the differences between using smart contracts and conventional arbitration procedures. Evaluate the benefits and drawbacks of each strategy, considering the elements like effectiveness, cost-effectiveness, transparency, and the enforcement of awards.

Anyone can perform a thorough and rigorous examination of the function of smart contracts in arbitration by using this methodology, which will add insightful information to both academic research and real-world implementations in the field.

IV. RESULTS

4.1. Expert Interviews

The insights obtained from expert interviews revealed diverse perspectives on the integration of smart contracts in arbitration:

4.1.1. Advantages:

- The potential for greater efficiency through automation, especially in lowering procedural delays, was highlighted by experts.
- One notable advantage of block chain technology over conventional arbitration procedures was its inherent openness.
- Because there was less dependence on middlemen, cost-effectiveness was regularly mentioned.

4.1.2. Challenges:

- Smart contracts' rigidity, which may make it difficult to handle intricate, nuanced conflicts, has drawn criticism.
- The enforceability of awards in cross-border situations and jurisdictional concerns were often brought up.
- One of the obstacles to adoption was found to be practitioners' general lack of technical and legal knowledge.

4.2. Legal Analysis

The legal review underscored several critical findings:

4.2.1. Compliance with Existing Laws:

- Although smart contracts have the potential to be compatible with arbitration frameworks, there are notable jurisdictional differences. The enforceability of agreements based on block chain technology is unclear in several jurisdictions.
- There is a void in legal precedents due to the small number of court decisions on issues involving smart contracts.

4.2.2. Regulatory Gaps:

- There is ambiguity due to the lack of defined regulations for block chain technology, especially in cross-border arbitration.
- Legal professionals pointed out that in order to guarantee smooth applicability, incorporating smart contracts necessitates adding to or changing current arbitration legislation.

4.3. Technical Evaluation

The technical analysis yielded mixed results regarding the feasibility of smart contracts for arbitration:

4.3.1. Strengths:

- High degrees of security and automation were acknowledged as major benefits.
- The immutability of block chain guarantees that contracts and supporting documentation cannot be altered.

4.3.2. Weaknesses:

- Current block chain networks are unable to effectively manage large transaction volumes, making scalability a major obstacle.
- Critical risks were determined to be security flaws, such as coding problems or vulnerability to attacks.

4.4. Comparison with Traditional Arbitration

The comparative analysis highlighted clear distinctions between smart contract-based arbitration and traditional methods:

- **Efficiency** By automating repetitive procedures, smart contracts shortened procedural timescales, while traditional arbitration maintained its flexibility in resolving complex issues.
- **Cost:** By reducing the need for middlemen, smart contracts have proven to be more cost-effective; yet, the early setup expenditures (such as creating strong smart contracts) may be substantial.
- **Transparency:** Comparing block chain to traditional arbitration's confidentiality standards, the former generated privacy issues despite its unequalled transparency.

- **Enforceability:** Particularly in international conflicts, the enforcement of traditional arbitration techniques was better.

4.5. Overall Findings

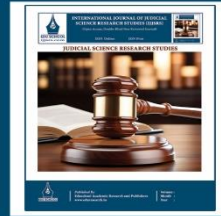
According to the results, smart contracts have a lot to offer, but their existing drawbacks prevent them from being widely used in arbitration. For simple, low-complexity issues where automation and transparency are the main factors, they work well. Because of its established legal underpinning and flexibility, conventional arbitration is still the procedure of choice for more complex matters. The broad use of smart contracts in arbitration requires filling up the gaps found in the technical and legal assessments.

V. CONCLUSION

Finally, it may be said that a novel technology has entered the legal sector. Arbitral procedures could be affected and disrupted by new technologies in several ways. The impact is particularly fascinating when considered in the framework of global arbitration, which offers a viable alternative to the current conflict settlement system. They might be extremely helpful in adjudicative services and representing themselves in court, and they could give academics and outside funders more thorough information. Emotions and knowledge, motivation, processing, memory, and judgment are inextricably linked. As a result, machines are devoid of both fundamental metacognition and empathy. To address an appropriate revision of specific institutional guidelines and national legislation that effectively forbid the appropriation of the arbitrator's position, I believe think tanks and discussions should be created as soon as possible. Blockchain innovation is now essential for registering property in the modern world. The strongest and most impermeable system mode is this one. Upon completion of the geographical transfer task, the data is updated and recorded on the blockchain that underlies the platform right away. A smart agreement is a set of digitally stated promises along with the protocols that the parties must follow to fulfill those commitments. The fundamental concept behind smart agreements is the ability to incorporate an extensive variety of contractual clauses—liens, bonding, property rights demarcation, etc.—into both the software and the hardware that we work with, making it possible to make contract breaches costly—if desired, occasionally prohibitively so. Business executives who aren't keeping up with blockchain advances ought to look into the technology and see how it can work with smart contract technology to generate new business opportunities or inefficiencies.

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Relevance of 'Single Use Plastic' in India: An Analytical Study

Dr. Sangeeta Taak, Assistant Professor of Law, Rajiv Gandhi National University of Law, Punjab

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Abstract

The Ministry of Environment, Forest and Climate Change, Government of India notified the Plastic Waste Management Amendment Rules, 2021, on 12 August 2021. To proceed with the spirit of 'Azadi ka Amrit Mahotsava', a defining step to curb pollution caused by cluttered and uncontrolled plastic waste is being taken by the country. India banned manufacturing, importing, stocking, distribution, sales and usage of identified throw away plastic items, which have minimal utility and maximum/significant littering potential, all across the country from July 1, 2022. India is a party to the United Nations Environment Assembly (UNEA). In total 124 Nations are party to UNEA and India had signed a resolution to draw up an agreement which will in the future make it legally binding for the signatories to address the full life of plastics from production to disposal, to end plastic pollution.

Plastics have transformed our day to day life, and their use is expected to continue to rise. There are now 8.3 billion tonnes of plastic with in globe, yet only 6.3 billion of those tonnes are usable. It is our goal in this closing piece to summarise our existing knowledge of the positive effects and negative consequences of plastic usage, as well as what we want to accomplish moving forward. Clearly, plastics provide several social advantages as well as potential technical and medical advancements in the future. It's also important to note that issues concerning consumption and disposal are wide-ranging, including the build up of garbage in landfills and natural ecosystems, as well as health difficulties for animals caused by ingesting or tangling in polyethylene terephthalate (PET). Plastics are made using around 4% of the world's oil output as a feedstock and with about as much energy as that. In the contemporary era of mass manufacturing, packaging represents approximately a third of all materials consumed. This linear use of hydrocarbons via packaging and other short-lived plastic uses is simply not sustainable, given our diminishing fossil fuel supplies and constrained capacity for waste disposal in landfills. Green chemistry life-cycle studies and new risk assessment methods may help address the issue of littering, along with reducing the amount of waste that is thrown away at the end of a product's lifespan. The public, industry, scientists, and legislators working together will be the most effective way to implement these policies. However, the need is to comply with the new guidelines of the Government in order to protect environment and human health. In this paper We have discussed the recent guidelines issued by the Indian Government in August 12, 2022. It has further banned the disposable plastic in order to protect the environment. The detailed analysis of the SUP has been mentioned with the pros and cons of Plastic use with distinct reference to the stakeholders.

Keywords: - Plastic, Fossil, Single Use Plastic, Landfills

I. INTRODUCTION

Plastic seems affordable, lightweight, robust, durable and corrosion resistant. Besides medicinal and technical advancements, energy savings, and several other social advantages, polymers have a wide range of applications. From roughly 0.5 million tonnes in 1950 to 260 million tonnes now, plastics manufacturing has grown significantly during the last 60 years.

More than 1.6 million people work in the plastics business in Europe alone, which has a turnover of more than 300 million euros. Polyethylene terephthalate (PET) and polyethylene nitrate (PAN) are used in almost every area of everyday life, from transportation to clothes and footwear to food packaging. For example, new medical uses, the creation of renewable energy, and a reduction in the amount of energy consumed in transportation might all benefit from new application of plastics in the future.

Despite the fact that traditional plastic manufacturing relies on fossil fuels, the plastics sector has grown to meet the world's increasing need for raw materials. In light of the wide range of uses for plastics, the output of plastics is predicted to quadruple in the upcoming twenty years. In 2018, around 360 million tonnes of plastics were manufactured, with 18.5 percent of that total being generated in Europe, according to figures from the worldwide plastics manufacturing industry.

1.1 Recent Development in India

“The Ministry of Environment, Forest and Climate Change, Government of India notified the Plastic Waste Management Amendment Rules, 2021, on 12 August 2021. Carrying forward the spirit of ‘Azadi ka Amrit Mahotsava’, a defining step to curb pollution caused by littered and unmanaged plastic waste is being taken by the country. India banned manufacture, import, stocking, distribution, sale and use of identified single use plastic items, which have low utility and high littering potential, all across the country from July 1, 2022. India is a party to the United Nations Environment Assembly (UNEA). In total 124 Nations are party to UNEA and India had signed a resolution to draw up an agreement which will in the future make it legally binding for the signatories to address the full life of plastics from production to disposal, to end plastic pollution. Let us discuss the meaning of Single use Plastic (SUP).”

1.2 Single Use Plastic

“Single-use plastic products (SUPs) are **used once, or for a short period of time, before being thrown away**. The impacts of this plastic waste on the environment and our health are global and can be drastic. Single-use plastic products are more likely to end up in our seas than reusable options.”

1.3 List of Banned SUP items In India

“The Government of India has implemented firm measures to reduce pollution from littered Single Use Plastics. The banned items list includes: ear buds with plastic sticks, plastic balloon sticks, plastic flags, candy sticks, ice-cream sticks, polystyrene (Thermocol) for decorative purpose, plastic plates, cups, glasses, cutlery such as forks, spoons, knives, straws, trays, wrapping or packing films around sweet boxes, invitation cards, cigarette packets, plastic or PVC banners under 100 microns, and stirrers.” It is pertinent to mention here that no doubt the SUP is creating lot of damage in ling run, however, Plastic has various advantages in the reduction of transportation cost or in the public health sector. However, there are various benefits of plastic as well let us explain as under:

II. ADVANTAGES OF PLASTIC SECTOR

In industrialized parts of the globe, the consumption trends of the five most extensively used plastics in their many application sectors tend to be constant. Almost three-quarters of plastic waste is used in packaging applications (such containers and plastic bags), while another third or more is used in construction items like plastic pipes or polyvinyl cladding. In poorer nations, resin consumption patterns may be somewhat different; for example, in India, 42% of resin use was estimated to have been in the packaging sector.

More than only automobiles and toys and furniture are constructed from plastics. Plastics are tremendously being used in underdeveloped countries as an alternative to conventional materials such as paper, metal, wood, and glass because of their reduced unit cost and improved performance characteristics.

It is necessary to understand if there are any advantages of plastic or not. Plastic has definitely made our life easy and economical over the couple of years.

2.1 Plastic Innovations

To be sure, plastics play an important role in the variety of materials we now have at our disposal. Plastics and rubber are used in almost every facet of everyday life. Clothing, footwear, along with items for preparing food and public health, fall under this category. Worldwide, almost 40 million metric tonnes of polymers were turned into textile fibers (mainly in the form of nylon, polyester, and acrylics). Polyesters, fluoropolymers, and nylons make up the bulk of high-performance clothing, whereas polycotton clothing includes significant quantities of PET plastic. Fleece apparel may be created from recycled PET and is 100% plastic (PET). Polyurethane or even other elastomeric materials are used to make the footbed and outsoles of most footwear, while vinyl or even other synthetic polymers are utilised for the uppers.

2.2 Public Health Sector and Plastic

Plastics are also beneficial to the public's health in a variety of ways. They make it possible for medical devices such as surgical instruments, drips, aseptic medical packaging, and pill blister packs to be produced, as well as clean drinking water supplies. They utilise modified environment packaging, for example, to extend shelf life of fresh foods, to prevent food waste.

2.3 Transportation Cost

Plastics minimize transportation costs and, as a result, emissions of atmospheric carbon dioxide. Many modern governmental and non-governmental transportation vehicles, as well as some current airplanes, use up to 50% plastics in their construction. Common examples include the packaging trays seen on many cars, as well as the door liners, steer wheels, and other electrical components. Lightweight fasteners, doors and window, fittings and insulation materials are just few examples of how plastics may enhance and lower the cost of construction components. The usage of nylons, polyether ether ketones, polypropylene, and polymeric rubber compounds in World Cup-standard footballs and other sporting goods has also been shown to reduce energy consumption and improve the quality of numerous leisure activities.

Plastics provide unmatched design flexibility over a broad temperature range. Compared to competing materials, plastics have a low lifetime cost while providing excellent strength-to-weight and stiffness and toughness. They are also bio-inert, highly thermal and electrically insulating, non-toxic, and very durable. Any carbon and hydrogen-containing feedstock may be used to make plastics. While fossil fuels are now the primary source of plastics, components of natural such as sugars and maize may also be used. As much as 4% of worldwide oil and gas output is utilised as raw resources for plastics manufacture, and a comparable percentage is used as energy. As a result, plastics are able to contain carbon, which may be kept by recycling them.

III. THE USE OF PLASTICS IN DAILY PRODUCTS:

3.1 Automotive

When it comes to automobiles, plastic is employed in a wide range of places: from outside paint to interior seats to dashboard components and the seatbelts that safeguard passengers. Lithium polymer car barriers, which power certain hybrid and electric automobiles, include plastics.

It is possible to construct automobiles safer and much more fuel efficient by using plastics in novel ways. All of these solutions rely on plastics, which play a crucial role in reducing weight while increasing fuel economy and reducing carbon emissions, as well as providing safety advantages like airbag deployment and seatbelt deployment. More and more automotive components are created from recycled plastics as automakers strive to satisfy sustainability targets and use recovered resources.

3.2 Safety

Plastics have an important role in automotive safety:

- Seat belts, which are made of long-lasting polyester fibre, have saved many lives in automotive accidents.
- In a frontal collision, airbags, which are generally constructed of high-strength nylon fabric, may lower the chance of death.
- Polymer science discoveries have made it feasible to develop child safety seats that safeguard our children at every turn.

3.3 Fuel Efficiency

In order to improve fuel economy, reduce pollutants, and cut the cost of driving, automobile designers must focus on decreasing weight. It is possible that plastic components weigh half as much as their metal or wood counterparts. Currently, plastics account for half of a vehicle's volume, but only 10% of its weight.

3.4 Style & Innovation

In contemporary autos, plastics provide technical and aesthetic advantages. In addition to being lightweight, plastics allow designers to come up with concepts that would otherwise be unachievable or almost difficult to put into practise. Additionally, plastics are able to withstand dents, dings, stone chipping, rust, and other types of damage. Parts may be consolidated and assembled in a modular fashion, resulting in lower manufacturing costs.

3.5 Building and Construction

Every aspect of our existence is influenced by the buildings we inhabit. And chemistry-based materials may be found in everything from roofs to floor and wall coverings to insulation to worktops and surfaces. Almost every aspect of architectural construction and maintenance involves the usage of plastics, from reflective roof membranes to waterproof sealants and caulks. High-performance materials and solutions have been developed to address a wide range of issues, including climate change mitigation, enhancing occupant health and quality of life, boosting energy efficiency, and increasing a building's ability to withstand natural catastrophes.

3.6 Consumer Goods

Plastic is a common component in a wide variety of everyday consumer goods. Even though chemistry's products are priceless, they must be handled with care. The chemical industry is dedicated to the safe, responsible, and long-term management of chemicals throughout their entire lifecycles and for their intended purposes. Many of the items and technology we use on a daily basis include some kind of plastic. Plastic is used in a various items, such as:

- 3.6.1 **Personal Care Products:** Personal care products, such as lotions, soaps, shampoos, and even cosmetics and deodorants, depend on surfactants to make them easier to use and more effective.
- 3.6.2 **Cleaning Products:** Home cleaning solutions, detergent and other items may help remove soils, bacteria and other impurities while preventing the transmission of infectious illnesses as well as controlling allergies, which can be harmful to people's health.
- 3.6.3 **Sports Equipment:** Carbon fiber-reinforced plastic gear & safety equipment is often used by bicyclists, skiers, hikers, mountain climbers, and other outdoor enthusiasts, from skis, boots, helmets, and shin pads to goggles and other protective eyewear.
- 3.6.4 **Electronics and Appliances:** Chemistries such as silicones, polycarbonate plastics, phthalates, and more may be utilized to enhance durability, heat resistance, and performance of items such as TVs, computers, and mobile phones.
- 3.6.5 **Electronics:** Plastic's cutting-edge technical advances stimulate new computer, telecommunications, smart appliance, and other consumer electrical device breakthroughs. A wide variety of devices, from TVs and mobile phones to computers & kitchen appliances, fall under the umbrella of "consumer electronics." These goods are all distinctive in terms of their appearance, functionality and safety features. Elements such as fluoropolymers, flame retardants, silicones, polycarbonate plastic, and phthalates are just some of the various chemistry-based materials that are involved in the production of today's electronic gadgets.

As an example, plastic components play a crucial role in reducing the weight and size of a wide range of electronic devices, while also safeguarding critical technical components and reducing the amount of raw material used in manufacturing. Engineering a plastic product is also feasible to meet specific performance objectives, such as minimizing energy consumption over its lifespan.

One fact that cannot be denied is that plastics in spite of being dangerous and polluting in a multitude of ways still continues to be a material that is hard to replace and is present in different forms as an agent that makes our lives easier and makes resources more accessible. Whilst being one of the most notorious and talked-about topics in the realm of environmental problems, one cannot avoid looking at the ways in which plastics make our life better such as:

- In automobile engineering, there has been a rising trend of using plastic components. Since plastic is lighter compared to metal, it helps to reduce the overall vehicle weight, thereby enhancing fuel efficiency. This improvement in fuel efficiency positively impacts the environment.
- Another way it helps with the fuel economy is with plastic packaging which in addition of being light has also become satisfactorily sturdy which has consequently led to the recent shift in the arena of product packaging and transportation. It is estimated eliminating plastics would raise the weight by four times.
- Paper is a product which has been widely discussed as a replacement for plastics, this glorification usually interjected by economic factors but what must also be observed is that simply the production of paper needs a greater amount of energy and water than plastics while also having a shorter lifespan.
- Advancements in science have added on the benefits of plastics in terms of building materials like plastic windows and parts that filter Ultraviolet rays in order to keep the building cool in summers and vice versa. EPS Insulations are another example within the same field of application. This system requires less usage of money and resources and is another beneficial impact on the environment.
- The core of plastic's usability lies primarily in its wide range of applications and it's nature which can be molded as per the requirement, in the field of sports safety gear manufacturing items of plastic helmets, goggles and padding which have become lighter and stronger especially with the addition of shock absorbing foam and shells.
- While shifting our gaze to the aviation sector, plastics have yet again proven their usability as a manufacturing material with the Airbus A380 being manufactured from plastics reinforced with lightweight fiber.
- Even in the manufacturing of solar panels and wind turbines plastics have a key application. What also goes in it's favor is the simple fact that plastics are easier to recycle.
- Other than these, the sheer convenience, scale of economy, optimization of processes and the recent improvements when it comes to manufacturing plastics have had a combined effect the pleading the case for the positives regarding this often-vilified material which while raising legitimate concerns has also been a boon in so many ways. The pressing need consequently is not the elimination of plastics but responsible and more sustainable ways of dealing with plastic waste.

Medical applications such as tissue and organ transplantation, also lightweight components like those in the modern Boeing 787, would benefit from plastics' ability to minimize fuel consumption; components for the production of renewable energy & insulation will reduce carbon emissions; even smart plastic packaging is expected to be able to monitor and signal perishable items' condition.

Plastics have many potential uses in the future, but current manufacture, usage, and disposal methods are clearly unsustainable and endanger animal and human health. Several of the environmental risks are well-known, there remains many unanswered questions concerning how they affect human health. It's possible to find a solution, but it'll need a coordinated effort. Individuals have a role to play through adequate use and disposal, especially recycling; industry has a role to play through green chemistry, material reduction, and product design for reuse and/or end-of-life recyclability; and

governments and policymakers have a role to play through the establishment of standards and targets, the definition of relevant product labelling to inform and encourage change, as well as the funding of existing scholarly research and technological advancement.

The contemporary world would be unable to function without plastics, even in the face of rising public distrust. Modern computers, mobile phones, and most life-saving discoveries in medicine were made feasible by plastics. Plastics, which are both lightweight and effective at insulating, save energy in both heating and transporting. Most importantly, low-cost plastics increased the average person's quality of life and opened the door to more material plenty. We may only be able to afford luxury goods if plastics were unavailable to the general public. Many of our goods have been made lighter, safer, and stronger by substituting natural materials with plastic.

A growing body of research is being conducted to improve the safety and sustainability of plastics, given their widespread use. Bioplastics, which are created from plant crops rather than fossil fuels, are being developed by some inventors as an alternative to conventional plastics as they are more ecologically friendly. In the meanwhile, others are striving to develop polymers that are really biodegradable. Some inventors are working to improve recycling efficiency, and some even aim to develop a method that would convert plastics back into the energy sources from which they were originally created. Plastics are not flawless, yet they are essential to our future. Plastic has played a positive role on enhanced health and safety for consumers, material conservation and energy saving as well. Let us discuss the impact of plastic on the world in its entirety.

IV. THE IMPACT PLASTICS HAVE ON THE WORLD AS A WHOLE

4.1 Enhanced health and safety for consumers

The use of plastics in water and food packaging contributes to the well-being of customers. When it comes to ensuring that people have access to safe drinking water, plastics have become a vital component. Because of their low weight and ease of fabrication, plastics have been extensively utilized in a wide variety of water treatment & distribution channels "(e.g. sewerage, storm water, land drainage and irrigation)". By regulating temperature and environment within the box, plastic food packaging ensures safety, time-dependent storage of fresh fruit and other food items" "(using gas-flush packaging and oxygen scavenger technology)". In addition, low-cost indicator labels may be utilized to monitor the quality of packaged goods (particularly their time–temperature history).

Plastic has been utilized in the manufacture of medical gadgets, throwaway injections, medical implants, and anti-malarial mosquito nets, all of which have helped save lives. Due to its cheap cost and durability, plastic is often used in solar panels and wind turbines, but it has also assisted us combat food-borne diseases by offering better packaging. Plastic is essential to the functionality and affordability of most contemporary technical items, including computers, cellphones, TVs, tablets, and more. It's hard to conceive how we'd live without them in our modern civilization.

V. MATERIAL CONSERVATION

Because plastics have a high strength to weight ratio, they may be used in package design with little material consumption (and hence cheap cost) because of their light weight. The typical weight of plastic packaging is between 1% and 3% of the overall weight of the product. To package 200 grammes of cheese, 2 grammes of plastic film is needed; 1.5 litres of liquid may be held in a 38-gram container, and 125 grammes of yoghurt weighs only 4 grammes. Plastic packaging has a better ecological balance sheet than most other packaging materials when considering the overall amount of energy used in manufacture, transportation, and disposal, as well as other environmental implications. If you were to transition to plastic pouches from paper-based milk cartons, you might expect to save 72% of the energy needed to produce the package, a 50% reduction in refrigerated space, and a 90% reduction in trash to landfill, according to research published in the journal *Environmental Science and Technology* (ES&T).

As oil prices rise, the production of renewable energy supplies is expected to increase. Wind, solar, and geothermal energy are all infinitely renewable. Some European regions now use renewable energy to fulfil the majority of their thermal, hot water, and power needs, while Iceland uses geothermal energy. To help this endeavor, plastics may be utilized as a material for new and creative designs. For example, new solar water heaters incorporating polymers like PE and PVC may provide up to 66% of a household's yearly hot water use. The remainder of a house's energy needs may be met by photovoltaic collectors, which turn sunlight into electricity. In order to exploit these technologies, polymers would have to be lightweight, moldable, UV resistant, and insulating.

It's important to note that plastics are able to catch about 1/2 of carbon that is needed to make them. Plastics may be recycled in a variety of ways due to their unique qualities. As long as proper waste management methods are in place, plastic trash may be reused, recycled, converted into fuels or chemicals, or burned to generate energy, all of which can be used to plastic garbage. The majority of primary recycling and post-consumer recycling of elevated plastics makes environmental and economic sense, and the greatest advantages are gained when recycling is considered as a materials conservation strategy rather than a waste management plan. The recycling of waste streams including a variety of plastics may be a challenge. Utilization of the high temperature value of post-consumer plastics is made possible via waste to energy by means of incineration in this instance. Plastics have a larger energy content than paper, making the latter technique more beneficial compared to other types of packaging.

VI. ENERGY SAVINGS

There is a climate change conundrum with plastics. Increased utilization of plastics, contrary to common assumption, lowers society's reliance on nonrenewable fossil fuels and hence lowers its emissions of greenhouse gases. Plastic's advantageous qualities, such as its low weight, increased manufacturing efficiency, and superior insulating capabilities, account for this.

By using plastics, we are able to get more done while using fewer resources. It's a thin, light material that allows us to reduce the weight of our goods and packaging. Other materials like cardboard, metal, and glass need more energy to make and turn into finished items.

There are several ways in which plastics conserve energy, including:

6.1 Insulation savings - To keep their interiors warm in the winter and cool in the summer, many houses and businesses use plastic insulation. As a result of using EPS insulation, for example, less heating fuel or air conditioning energy is needed, which helps save vital natural resources.

6.2 Energy-efficient refrigerators and freezers – Foamed polyurethane layered between molded plastics panels is used in almost all refrigerators nowadays to assist keep the inside of the refrigerators cool. Fridges don't have to struggle as hard to maintain a cold temperature, which saves us money on our power costs while still preserving the quality of our food. Insulation is the most important factor in getting the Energy Star reviews that appear on refrigerators.

6.3 Agricultural production savings - Conserving energy while preserving the crop is a major benefit of using plastics in greenhouses, ground film, and other soil improvement methods to boost yields. A 60 percent increase in yields has been obtained, as well as the ability to produce crops outside of the growing season to suit customer demand.

In contrast to common assumption, increasing the use of plastics would actually cut the total usage of non-renewable sources fossil fuels & decrease society's greenhouse gas emissions, contrary to what many people think.

VII. THE FUTURE OF PLASTIC

According to futurist Hammond's new book, "The World in 2030," the rate of technological growth is increasing exponentially, and as a result, by 2030, it will seem as though the first thirty years of the 21st century had seen a century's worth of progress. The world of 2030 will be a much different place from the one we know now. Plastics will have a far larger part in our daily lives throughout this time period. A wide range of vital tasks for plastics, including body cells or perhaps even organ transplants, crucial materials for ultra-lightweight automobiles and aeroplanes, better insulation for houses powered by solar technology, reusable electronic media for books and magazines, smart packaging monitoring food content for symptoms of rotting, and high-efficiency. New polymers derived from renewable biomass are projected to become more common as fossil fuel sources deplete. Plastics currently have a wide range of mechanical & aesthetic performance attributes that these new additions will help to enhance. Thus, any future in which we don't use plastics in some capacity appears implausible." However, there is no doubt, an adverse impact on environment. There are recent development on the Single Use Plastic ban in India is happening, let us discuss the detailed analyses as under:

VIII. RECENT DEVELOPMENTS IN INDIA ON THE USE OF 'SINGLE USE PLASTIC'

"India is not the first country to ban single use plastic. Bangladesh became the first country to ban thin plastic bags in 2002 and later on New Zealand became the latest country to ban plastic bags in July 2019. China too had issued a ban on plastic bags in 2020 with phased implementation. As of July 2019, 68 countries have plastic bag bans with varying degrees of enforcement".

8.1 Impact of SUP on Environment

"The adverse impacts of littered single use plastic items plastic on both terrestrial and aquatic ecosystems, including in marine environment are globally recognized. Moreover, addressing pollution due to single use plastic items has become an important environmental challenge confronting all countries. In the 4th United Nations Environment Assembly held in 2019, India had piloted a resolution on addressing single-use plastic products pollution, recognizing the urgent need for the global community to focus on this very important issue. The adoption of this resolution at United Nations Environment Assembly (UNEA) 4 was a significant step. In the recently concluded 5th session of United Nations Environment Assembly in March 2022, India engaged constructively with all member states to develop consensus on the resolution for driving global action on plastic pollution".

8.2 The Plastic Waste Management Amendment Rules, 2021

“The Plastic Waste Management Amendment Rules, 2021, also prohibits manufacture, import, stocking, distribution, sale and use of plastic carry bags having thickness less than seventy- five microns with effect from 30th September, 2021, and having thickness less than thickness of one hundred and twenty microns with effect from the 31st December, 2022”.

It means the ban does not cover all plastic bags; however, it requires the manufacturers to produce plastic bags thicker than 75 microns which was earlier 50 microns. As per the notification, the standard shall be increased to 120 microns in December this year. The notification clearly mentioned that plastic or PVC banners/ hoardings should contain more than 100 microns in thickness, and non-woven plastic (polypropylene) to be more than 60 GSM (grams per square metre). Non-woven plastic bags have a cloth-like texture but are counted among plastics. Still the plastic or PET bottles, counted among the most recyclable types of plastic, have been left out of the scope of the ban.

“Increasingly, the plastics industry is emphasizing sustainability, renewable energy, independence from foreign oil, and biodegradability. Synthetic or semi-synthetic polymers known as plastics have a wide range of properties, including lightweight, strength, durability, and cheap cost. As a result of these salient features, they've grown ubiquitous in human culture during the previous half-century. “The term "plastics" encompasses a wide range of synthetic polymeric materials derived from fossil hydrocarbons, such as polyethylene terephthalate (PET or PETE), high-density polyethylene (HDPE), polyvinyl chloride (PVC), low-density polyethylene (LDPE), polypropylene (PP), and polystyrene (PS), and are tailored to meet the diverse needs of thousands of end products.”

According to Bourguignon, “plastic materials may be divided into three major groups depending on their physical features: thermoplastics, thermosets, and thermosets”. These three types of materials are referred to as thermosets (plastics that cannot be returned to liquid state and reshaped), thermoplastics (plastics that can be returned to liquid state and reshaped, or recycled), & elastomer (soft elastic plastics).

8.3 Initiatives of Government of India

“The Government of India has also taken steps to promote innovation and provide an ecosystem for accelerated penetration and availability of alternatives all across the country. In order to make the effective enforcement of ban, national and state level control rooms shall be set up and special enforcement teams will be formed for checking illegal manufacture, import, stocking, distribution, sale and use of banned single use plastic items. States and Union Territories have been asked to set up border check points to stop inter-state movement of any banned single use plastic items”.

CPCB Grievance Redressal App has been launched to empower citizens to help curb plastic menace. For wider public outreach, PRAKRITI - mascot was also launched on 5th April.

The Government has been taking measures for awareness generation towards elimination of single use plastics The awareness campaign has brought together entrepreneurs and startups, industry, Central, State and Local Governments, regulatory bodies, experts, citizens organizations, R& D and academic institutions.

8.4 Extended Producer Responsibility (EPR)

“The Ministry of Environment, Forest and Climate Change had also notified the Guidelines on Extended Producers Responsibility on plastic packaging as Plastic Waste Management Amendment Rules, 2022 on 16th February, 2022. Extended Producer Responsibility (EPR) is responsibility of a producer for the environmentally sound management of the product until the end of its life. The Guidelines provides framework to strengthen circular economy of plastic packaging waste, promote development of new alternatives to plastic packaging and provide next steps for moving towards sustainable plastic packaging by businesses”.

8.5 Impact of Ban

“The success of the ban will only be possible through effective engagement and concerted actions by all stakeholders and enthusiastic public participation”. However, if we take examples from our past, in India almost 25 Indian states had banned plastic previously at state level. However, these bans had a very limited impact in reality because of the widespread use of these items.

Now the challenge is to see how the local level authorities shall enforce the ban as per the spirit of the guidelines. If we see the banned items like ear buds with plastic sticks, plastic sticks for balloons etc. are non- branded items and it is difficult to find out who is manufacturer and who is accountable for selling because all these items shall be available in the local market even after the issuing of guidelines.

IX. CONCLUSION

The consumer needs to be informed about the ban through “advertisements, newspaper or TV commercials or something on social media on this ban that will help inform people about this ban taking place in the country”. The Companies need to spend money in research and development and find sustainable alternatives. In reality, fighting with the problem of plastic is not a government’s responsibility, however, it is the responsibility of industries, brands, manufacturers and most importantly the consumers. Finding alternatives to plastic seems little difficult, however, greener alternatives of plastic may be considered a sustainable option. For example, compostable and bio-degradable plastic etc. may be considered as an option.

No doubt it is a good initiative, but till the time, alternative is not available for the plastic and it is not informed to the vendors of single use plastic, it shall not be practically feasible to implement the complete ban.

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Protection of Traditional Knowledge by International Legal Instruments: A Review from Legal Perspective

Dr. Pradip Kumar Das, professor, School of Law and Governance, Central University of South Bihar, Bihar

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Abstract

Traditional Knowledge (TK), sometimes referred to as Indigenous Knowledge (IK), has drawn interest from all around the world in the past 20 years. The importance of traditional knowledge (TK) in biodiversity protection and the everyday lives of many people, the swift loss of TK and cultural diversity, and the exploitation of TK without sufficient benefit sharing are the reasons for this increased focus. These concerns are being addressed at different scales by nations and cultures around the world. In developing countries, over to 80% of people rely on traditional medicines, making TK an essential element of many indigenous communities' identities and essential to their health and food security. TK also plays a vital role in industrial research and development as well as modern medicine. It improves knowledge of ecological and social variety and helps form locally relevant, sustainable poverty reduction methods. TK and biodiversity have been exploited through attempts at biopiracy, which highlights the need for protective measures due to the economic importance of biological diversity.

Keywords: - Indigenous Knowledge, Biodiversity Conservation, Biopiracy, Traditional Knowledge Digital Library (TKDL), Convention on Biological Diversity, TRIPs, International Labour Organization (ILO)

I. INTRODUCTION

The worldwide agenda has given Traditional Knowledge, also known as Indigenous Knowledge (TK or IK), more attention throughout the last 20 years or so. It has gained increasing attention practically everywhere in the world. There are several factors that contribute to this, including the understanding of the importance of traditional knowledge (TK) in the lives of most people on the planet and the biodiversity conservation; worries about the swift extinction of TK and the losing global cultural diversity; apprehension about illegal, unauthorized and inappropriate TK patenting and use, with little to no benefit sharing with the original owner of the TK and the growing potential for TK businesses to generate substantial foreign exchange. Around the world, many nations and societies are thinking about how to handle this problem on a national, regional, and global scale. This knowledge has become a weapon of these people's cultural and political identity and the aboriginal, the Traditional people have become important partners and players on the national and global scene. For the majority of indigenous tribes, the essential component of their identity is now their traditional knowledge. The great majority of people still depend heavily on traditional knowledge in their daily lives. Millions of individuals in the developing nations depend on it for their health and food security. In many nations, the only reasonably priced treatment accessible to the impoverishment is traditional medicine.

For their medical needs, up to 80% of people in poor nations rely on traditional medicines. In today's world, among the most important sources of contemporary medicine is traditional knowledge. It has utilized extensively to usefully understand the general functioning and interrelationships of ecological systems. This data has been crucial to industrial research and development initiatives and has contributed to production in the modern economy.

TK may help improve development strategies in a number of ways, including by assisting in the identification of sustainable and affordable methods of reducing poverty that are manageable and significant locally, by improving comprehension of the ecological and social diversity of sustainable development and by assisting in the discovery of novel approaches to sustainable human development. For the development of latest products, TK has been and continues to be utilized in a variety of industries. Growing recognition of the economic worth of biological diversity has led to corporations attempting to use bio piracy to take advantage of traditional knowledge and biodiversity.

II. LEGAL PROTECTION OF TRADITIONAL KNOWLEDGE (TK) IN INDIA

Recently greater attention has been given by international communities for preserving the knowledge, innovations and practices of indigenous and local populations. They now recognise the importance of traditional knowledge. This is because of a number of factors. To begin with, now it is acknowledged that TK is essential for the biodiversity conservation and sustainable utilisation. This is emphasised by both the Convention on Biological Diversity (CBD) and the Food and Agriculture Organization's (FAO) International Undertaking on Plant Genetic Resources.

Second, a major portion of the population in many developing and Least Developed Countries (LDCs) depend on T.K based activities and goods for their food, healthcare and income. However, as local ecosystems deteriorate and traditional groups become more incorporated into civilization at large, this T.K is quickly disappearing.

Furthermore, the least developed and developing nations possess a significant amount of traditional knowledge. Both developed and developing nation's businesses and scientific research facilities can significantly gain by reaching and accessing these resources and traditional knowledge. Multinational organizations and unauthorized individuals frequently steal and pirate this customary knowledge. The real owner of the knowledge is not compensated. Finally, the long-term socio-economic sustainability of indigenous and local communities may be improved through the marketing of products based on TK, which could also open up new trade routes for developing nations.

These are few primary causes behind the global recognition of the significance of TK's legal protection. Traditional knowledge is not specifically protected by any sui generis laws in India. The Patent Act of 1970, the Copy Right Act of 1957 and the Designs Act of 2000, however, all contain different provisions. The Protection of Plant Varieties and Farmers Rights Act of 2001, the Biological Diversity Act of 2002, the Trade Marks Act of 1999, and the Geographical Indications of Goods (Registration and Protection) Act of 1999 all acknowledge traditional knowledge and help to avoid its exploitation in our nation. The Traditional Knowledge Digital Library (TKDL) is also crucial in thwarting bio piracy in India.

Both defensive and positive protection are available for TK. There are advantages and disadvantages to both the defensive and positive safeguards. Naturally, each nation has the final say in the matter. However, TK protection cannot be achieved just by defensive or positive protection. Positive and defensive protection must be viewed as either face of the same coin in a full protection strategy. These two methods ought to be viewed as supplemental and complementary to one another. To provide robust protection for traditional knowledge and its holders, both of these tools must be employed.

III. INTERNATIONAL LEGAL DEVELOPMENTS TO PROTECT TK

For a long time, the global community was not interested in traditional knowledge or indigenous knowledge. There were multiple reasons for this. Initially, it was regarded as knowledge that was not scientific, sophisticated, or useful for business. (Cullet, 2005). Second, the current property rights accords make it extremely difficult to protect traditional knowledge. Third, efforts by traditional people to establish intellectual property rights over traditional knowledge have long been unsuccessful. (Cullet, 2005). They made no attempt to market their expertise. Those with traditional expertise did not get worldwide awareness.

A few of them even questioned the legitimacy of structured legal framework and the current IPR framework for protecting their knowledge base. The potential significance of TK has only recently been recognised by the traditional and global communities realized the potential significance of TK. In 1957, the International Labor Organization (ILO) held a conference on the protection of Indigenous and other tribal and semi-tribal populations in independent countries marking the beginning of the first international effort to defend the rights of indigenous people in the second half of the 20th century. ([International Labour Organization \[ILO\], 1957](#)). Numerous International organizations have emerged after this treaty and acknowledged the significance of TK.

The following, however, are the international legal advancements for the preservation and protection of Traditional Knowledge:

- International Labor Organization – convention No. 107 (The Indigenous and Tribal populations convention and Recommendation 1957);
- Trade Related Aspects of Intellectual Property Rights (TRIPs) Agreement;
- Convention on Biological Diversity (CBD);
- WIPO Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore (IGC);
- The Mataatua Declaration on Cultural and Intellectual Property Rights of Indigenous peoples, 1993;
- Kari – Oca Declaration [The World Conference of Indigenous Peoples on Territory, Environment and Development (25th – 30th May, 1992)]-1992;

- Universal Declaration of Human Rights 10th Dec, 1948;
- International Covenant on Economic, Social and Cultural Rights 1966;
- International Covenant on Civil and Political Rights 1966;
- Vienna Declaration and Programme of Action 1993;
- United Nations Declaration on the Rights of Indigenous Peoples – 2007;
- International Treaty on Plant Genetic Resources for Food and Agriculture 1983;
- Tunis Model Law on Copyright for Developing Countries 1976;
- Rio Declaration on Environment and Development 1992;
- UNESCO Convention on the preservation of Intangible Genetic Data- (29th Sept.-17th Oct.2003);
- Berne Convention for the Protection of Literary and Artistic works;
- World Health Organization's Traditional Medicine Strategy 2002 – 2005;
- WIPO Performances and Phonograms Treaty (WPPT) 1996 and WIPO Copyright Treaty 1996(WCT);
- The Johannesburg Declaration on Biopiracy, Biodiversity and Community Rights – 26th August to 4th September, 2002;

However, a handful of the aforementioned crucial legal instruments are discussed below:

3.1 The Indigenous and Tribal Populations Convention and Recommendation, 1957 (Convention no. 107)

Their expertise was not intended for commercialization. Conventional knowledge holders were unable to attract global focus. A few of them didn't even think that the official legal system and the current IPR framework would keep their knowledge base intact. TK's potential significance was only recently acknowledged globally and by the traditional communities. When the International Labour Organization (ILO) gathered a conference meeting in 1957 to discuss the protection and preservation of Indigenous and other tribal and semi-tribal communities in independent nations, it made the first global attempt to defend the rights of indigenous people in the second half of the 20th century.

The treaty acknowledges that indigenous and tribal peoples are entitled to the complete spectrum of human rights and fundamental freedoms, free from hindrance or discrimination (International Labour Organization [ILO], 1989, Art. 3(1)).

Environment, labor culture, property, institutions, and indigenous and tribal peoples must all be protected. (International Labour Organization [ILO], 1989, Art. 4(1)).

Officials from every country owe duty to the indigenous communities that live in and around their territories to honor their religious and cultural practices. The government will ensure the support and encouragement of these activities with their help and when needed. (International Labour Organization [ILO], 1989, Art. 13).

In order to ensure that traditional and indigenous communities are well-informed about their rights and responsibilities regarding labor, economic opportunities, education, health, social issues, and the conventions provisions, the government must adhere to cultural norms and practices. (International Labour Organization [ILO], 1989, Article 30[1]).

Therefore, the government should take the appropriate steps to safeguard the rights of indigenous and tribal population beyond their conventional and traditional knowledge.

3.2 Trade Related Aspects of Intellectual Property rights (TRIPs) Agreement

The 1948 establishment of the General Agreement on Tariffs and Trade (GATT) by primarily industrialized nations lays out the rules governing trade among its members. By permitting tariff protection to be negotiated, reduced, or eliminated, the GATT seeks to advance free trade. After the Uruguay Round of GATT negotiations in 1994, the World Trade Organization was established to act as the GATT body in charge of administration and rights to intellectual property were included. The new World Trade Organization replaced the World Trade Organization General Agreement on Tariffs and Trade (GATT) on January 1, 1995, with a backing of 85 founding members including India. The TRIPs agreement is one of the several WTO records. The agreement covering Trade-Related Aspects of Intellectual Property Rights (TRIPs) consists of seven parts and 73 provisions. According to the TRIPs agreement's preamble, intellectual property rights are private property. Nonetheless, an international system of guidelines, regulations, and fields with regard to intellectual property rights is required. Under the 1994 WTO Agreement, the TRIPs were developed under multilateral talks for the first time. However, the first IPR convention was not TRIPs. The Paris Convention for the protection and safeguarding of industrial property, the Berne Convention for the protection and safeguarding of literary and artistic works and a few other additional treaties are all based on it.

The TRIPs Agreement is designed to achieve two goals. Promoting adequate and effective IPR protection is one goal, the other is to make sure that policies and processes for enforcing IPR don't end up impeding lawful trade. All participants to this agreement are obliged to provide basic requirements for IPR protection. Regarding all the signatory nations, the agreement makes these minimal requirements universal. However, instead of aiming for identical national IP laws, the agreement establishes minimum conditions for member nations to follow.

The World Trade Organization requires all of its member nations to establish basic criteria for intellectual property rights and procedures for upholding them. According to the agreement, parties must also give right holders access to fair, efficient legal processes and remedies in the event that their rights are violated or infringement occurs. (World Trade Organization [WTO], 1994, Articles 42–49). Parties should observe the principle of national treatment and most – favored nation with respect to IPR (World Trade Organization [WTO], 1994, Articles 3–4). In order for a person knowledgeable in the

art to copy an innovation, WTO members must mandate that patent applications disclose it. ([World Trade Organization \[WTO\], 1994, Article 29](#)). Article 31 places various restrictions on the scenarios, in which a government may allow the use of a patent against the wishes of the patent owner, subject to proper compensation. Article 27(1) suggests that patents are accessible for all inventions, whether they are processes or products, in all areas of technology, so long as they are novel, incorporate an inventive step and possess the potential for industrial utility. This is with regard to the provisions of paragraphs 2 and 3. Regardless of where the invention occurred, the technology or whether a product is made locally or imported, patents must be accessible and patent rights must be enjoyed. As per Article 27(2), "Members may exclude from patentability inventions, the prevention of commercial exploitation within their territory of which is necessary to protect Order Public or morality, including to protect human, animal, or plant life or health or to avoid serious prejudice to the environment, provided that such exclusion is not made simply because the exploitation is prohibited by their law."

3.3 Convention on Biological Diversity (CBD)

The Convention on Biological Diversity (CBD) was the inaugural global accord concerning the conservation and sustainable utilization of biological diversity, it is primary global instrument pertaining to the utilization and conservation of biodiversity. It was signed at the Earth Summit 1992. 176 nations, including the European Community, have ratified this comprehensive pact. National pledges to preserving the global ecological foundation as people work to accelerate economic development are outlined in the CBD. The convention lays out three primary objectives. The conservation of biological variety and the sustainable utilization of its components are the first two.

The just and equal distribution of benefits that come from use of the genetic resources. Considering all of these guidelines and objectives, governments work to preserve and responsibly utilize biodiversity. They must create national action plans and approach for biodiversity and include them into larger national plans for development and the environment. The convention's decision-making body is the Conference of the Parties (COPs). It convenes frequently to assess how the convention is being implemented and to choose work plans to accomplish its goal. In order to monitor adherence to PIC, the Guidelines additionally suggest that the location of origin of the genetic resource be included in the patent application. The purpose of the voluntary Bonn principles is to provide the model for governments, when they draft laws and policies and also for contracting parties when they draft agreements concerning the technology transfer, the handling of biotechnology, sharing its advantages, the utility of traditional knowledge and the customary utility and accessibility to biological resources. In particular, CBD Articles 8(j), 10(c), 15, 16, and 19 are included in the guidelines.

The goals are intended to offer direction, create an open framework, enhance biological variety conservation and promote technological transfer. States ought to establish focal points at national level, who will serve as national biodiversity experts and be in charge of ensuring that stakeholders participate effectively, granting and upholding agreements for benefit sharing and access, monitoring and evaluating these agreements and conserving and using resources sustainably. The suggested mechanism emphasises that states are entitled to control their resources. According to Article 8(j) of the CBD, each contracting party is required to: respect, preserve, and maintain the knowledge, innovations, and practices of indigenous and local communities that embody traditional lifestyles relevant for the conservation and sustainable use of biological diversity; encourage the equitable sharing of the benefits arising from the utilization of such knowledge, innovations, and practices; and promote their wider application with the consent and involvement of the holders of such knowledge, innovations, and practices. This is all subject to national legislation. ([Convention on Biological Diversity \[CBD\], 1992, Article 8\[j\]](#)). Biodiversity has become one of the great concerns in the last 20 years, This is due to extinction of many species of plant from the world and also due to its growing recognition of its determine access to genetic resources rests with the national governments and is subject to national legislation ([Convention on Biological Diversity \[CBD\], 1992, Article 15\[1\]](#)). This article's provisions represent a significant shift in global biological resource policy. It introduces the concept of national sovereignty over genetic resources and represents a substantial break from industrial norms and practices. It represents the importance of national sovereignty to the CBD and access regime. National governments have the power to decide who has accessibility towards the genetic resources, and national laws govern this decision. Countries now have the power to carry out control who has access to their bioresources and associated knowledge and also to decide on benefit sharing agreements. Article 10(c) says that "each contracting party shall, as far as possible and as appropriate, protect and encourage customary use of biological resources in accordance with traditional cultural practices that are compatible with conservation or sustainable use requirements. ([Convention on Biological Diversity \[CBD\], 1992, Article 10\[c\]](#))". Thus, the past utilisation of biological resources in keeping with cultural traditions has been addressed in this text. Article 16 of the CBD addresses technological transfer and access. According to Article 16.1, among other things, a state party acknowledges that technology includes biotechnology and that access to and transfer of technology among contracting parties are crucial to achieving the goals of this convention. Accordingly, the state party agrees, subject to the provisions of this Article, to provide and/or facilitate access to and transfer to other contracting party's technologies that are relevant to the conservation and sustainable use of biological diversity or that utilize genetic resources without harming the environment significantly. ([Convention on Biological Diversity \[CBD\], 1992, Article 16\[1\]](#)).

Therefore, in the light of aforementioned CBD requirements, it may be concluded that CBD guarantees nations the chance to profit from their genetic and biological resources. Therefore, in order to take advantage of their unique possibilities and advantages, state parties are encouraged to implement integrated policies, strategies and legal frameworks. Many nations around the world, including Brazil, Malaysia, India, the Philippines and Costa Rica, have enacted legislation governing the utility and accessibility of genetic components and biological resources.

3.4 WIPO Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore (IGC)

The WIPO Intergovernmental Committee created by The WIPO General Assembly, on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore (IGC) in October 2000 as a global forum for discussion and exchanging the views on the relationship between IP and Traditional Knowledge (TK), Genetic Resources and Traditional Cultural Expressions (TCEs/Folklore). The group has made great progress in addressing the policy and practical links between the IP system and the demands and the concerns of TK holders and traditional culture guardians.

To provide the foundation for international policy discussions, the Secretariat under the committee's direction, has conducted a number of in-depth analytical studies on the basis of an extensive analysis of experiences in this field at the national level. Additionally, the Secretariat has developed practical instruments to strengthen the TK and genetic resource holder's intellectual property interest. Currently, a large number of possible recipients of intellectual property protection have to be disregarded and marginalized in the era of globalization and new technology because there is insufficient protection and the present mechanisms are not tailored to the unique features of indigenous and local communities' knowledge, innovations, and practices.

Today, local and indigenous culture's knowledge, innovations and practices are in jeopardy. For conventional knowledge and related innovations and practices, an intellectual property system would aim to accomplish the following: ([World Intellectual Property Organization \[WIPO\], 2001, Annex 1, p. 3](#)):

- Innovations and traditional knowledge should be respected and protected;
- Fair and equitable distribution of knowledge's benefits;
- Use the knowledge and innovations for humanity's benefit;
- Administration of knowledge should be arranged and organized;
- Establish legal and economic systems that will permit sustainable development of communities that possess that knowledge;
- Maintain traditional conservation schemes for biodiversity;

The purpose of the Inter-Governmental Committee (IGC) is to encourage consensus over the protection and safeguarding such knowledge and resources, given that TK, TCEs, and genetic resources touch on a broad range of subjects, including biodiversity, cultural diversity, environmental preservation and fundamental human rights. In a 2000 meeting, WIPO made it clear that it would support the continuation of Member state consultations, working along with other pertinent international organizations, by conducting relevant legal and technical studies and by establishing a suitable forum within WIPO for further cooperation. As a result, IGC was created.

IV. CONCLUSION

To safeguard TK, India urgently has to pass sui generis laws. Today, numerous international multinational corporations and other criminals steal TK. Sui Generis legislation, however, will not be the solution to every issue pertaining to TK theft, even if it is passed. A single tool or mechanism wouldn't be enough to address the issue. TK cannot be protected by the Sui Generis law in India, TKDL, the current IP laws, PIC or ABS mechanisms alone.

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Additionally, such a framework ought to promote the flow of bio prospecting advantages to local and indigenous populations. The adoption of a long-term vision and the formulation of specific, achievable goals must be predicated on a well-informed assessment of what is required and practical. When addressing the issue, it is crucial to remember the harsh reality that indigenous populations and TK holder's face, which includes severe poverty, poor health, unemployment, restricted access to land and basic resources, and human rights abuses.

Their needs should come first in order to safeguard their interests. The issues surrounding unauthorized or irregular access to the traditional knowledge of India's indigenous people cannot be resolved by a single method, such as disclosure of origin, TKDL, or another sui generis legislation. To offer robust protection for traditional knowledge of indigenous population, both defensive and positive techniques should be employed. The evolution and progression of international regulations for the preservation and advancement of traditional knowledge might not be sufficiently facilitated by a single international institution.

It is essential that the interested nations and numerous international organizations work together on this project. The only way to solve this issue is to work together, both domestically and globally. Because bio piracy is a worldwide issue that typically entails obtaining materials in one nation while pursuing a patent in another. This indicates that addressing the issue of bio piracy just through governmental actions is insufficient.

Therefore, a positive and mandatory obligation must be placed on WTO member countries to mandate the patent applicants to reveal the nation of origin and source of biological resources and/or traditional knowledge (TK) incorporated into domestic inventions. This will make sure that the contemplated obligations on the applicants are effective. Either by properly revising the current rules or by adding a new article to the TRIPs Agreement, such a positive and mandatory requirement could be added. Therefore, to protect TK and TCEs, a concerted effort at the national and global levels is crucial.

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