

ADDRESSING DEFORESTATION CHALLENGES: A COMPARATIVE ANALYSIS OF FOREST RIGHTS LEGISLATION IN BRAZIL, INDONESIA, AND INDIA

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Abstract

Deforestation has become one of the most important environmental topics across the world. Apparently, combating deforestation and forest degradation has become a huge challenge for the globe. The paper will address the issue of deforestation in Brazil, Indonesia and India. The solution will be from the Indian Government Act of Schedule Tribe and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 in India. The act came to address the situation of deforestation and to recognize the rights of forest communities who are dependent on forests for a variety of necessities, including livelihood, habitation and other socio-cultural needs. The paper will provide recommendations to Indonesia and Brazil that can help in protecting their forests. The focus here will be to find out the ways a state can manage to include the forest dwellers for accomplishing the motives of the act with a positive outcome appreciating bottom-up approach. Although, the policy might not work in the exact manner for all but it surely can provide some pointers which can be very helpful for all in some way or the other. Countries might differ based on unequal distribution of natural resources but the survival instinct is present in all sync with others. Therefore, understanding the issue of deforestation at international and national level is important.

Keywords: Forests, Deforestation, Governance, India, Brazil, Indonesia, Policies, Indigenous Communities.

1. INTRODUCTION

The serious global phenomenon of deforestation has a significant impact on both society and the environment. Each year, significant deforestation results in the destruction of millions of hectares of tropical forests. In addition to local effects, deforestation has global effects as well, including the loss of biological and cultural diversity and the capacity to store carbon. Deforestation has become one of the most important environmental topics across the world. Combating deforestation and forest degradation has become a huge challenge for the globe now. Despite the fact that the sources provided do not particularly discuss their consequences, indigenous tribes are one of the socioeconomic groups affected by deforestation. The following article assesses the work behind the Indian government initiative of Schedule Tribe and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 (hereafter, FRA) in India. The primary agents who cut or burn the trees are the direct causes of deforestation, along with underlying, intermediate, and other contributing factors. The macro-level social, cultural, and political factors that induce deforestation are the intermediate causes, which are closely tied to

the agriculture and forestry industries but are also influenced by the underlying causes. The legislation was created to address the issue of deforestation and recognize the rights of forest populations who depend on forests for a range of purposes, such as subsistence, habitation, and other sociocultural requirements. The focus here is to find out the ways a state can manage to include the forest dwellers for accomplishing the motives of the act with a positive outcome appreciating bottom-up approach. Of course, with prioritizing the environment India has given a vision to the world for a longer, better and safer future for all. We will examine the complicated problem of deforestation in Brazil, Indonesia, and India in this research paper. We will also examine India's Forest Rights Act as a potential model for addressing deforestation issues, and will offer recommendations tailored to the particular conditions in Brazil and Indonesia. This research aims to add to the worldview discussions on deforestation mitigating techniques by examining the interaction between environmental preservation and the acknowledgment of the rights of populations who depend on forests.

2. DEFORESTATION A GLOBAL CRISIS

Deforestation is a serious global phenomenon that has far-reaching effects on both society and the environment. Millions of hectares of tropical forests are destroyed each year as a result of extensive deforestation. Deforestation has global ramifications in addition to localized ones, such as the loss of biological and cultural variety and the ability to store carbon. Indigenous tribes are among the societal groups impacted by deforestation, albeit the sources cited do not specifically address their effects. A combination of natural and man-made elements, including social, cultural, and political considerations, contribute to deforestation. Deforestation's externalities, such as unexpected and unadjusted repercussions, have expanded beyond localized effects and are now a global concern. Deforestation, therefore, is a local as well as global crisis that affects indigenous communities as well as the overall environment of the world.

2.1. Cause and Consequences

Depletion of forests includes degradation and deforestation. Growth and density in the population have an impact on the demand for forest products, due to market inefficiency, which occurs when decision-makers fail to take into account the costs of deforestation, forests are used irresponsibly and destructively, difficulty to capture forest rent and disregard for traditional land rights are two examples of policies that worsen environmental issues rather than addressing them, these underlying factors reinforce the necessity for efficient policies and initiatives to address the persistent problem of deforestation. Farmers' decision-making factors, such as logging and timber production, grazing and livestock, and agricultural land development, might affect deforestation.

2.2. Regional Variation

According to Food and Agriculture Organization 2020, forest covers more than 30 percent of the global land area. About 1.6 billion people of the world depend on forests for living (fao, 2020). Earth does not, however, have an equally distributed distribution of this varied natural

woodland habitat. Only five nations—China, Russia, Brazil, Canada, and the United States of America—have been found to hold more than 50% of the world's woods, while ten nations are responsible for two thirds (66%) of the world's forests (fao, 2020). Different policies work on issues related to climate, environment, forest, etc. Despite making laws, rules, policies, negotiations and participations the forest dwellers of the world are facing degradation of their livelihoods which is forests. For instance: the Baka community in Cameroon (Carson et al.,2018); Kokoró Mekranotire community in Amazon; Forest Tobelo community in Indonesia; Garo community in Bangladesh.

Indonesia and Brazil are the biggest culprits in tropical forest loss. Brazil and Indonesia come within the top 10 countries with largest forest cover areas. Therefore, understanding the forest problems faced in these two countries and working towards its solution is essential at this time.

3. DEFORESTATION IN BRAZIL

On the one hand Brazil has faced the worst deforestation in the year 2022. Reports showed that losing forests was nearly equal to 3000 soccer fields per day (Chambers, 2023). Such a huge area must not only be seen as an area of economic profits. Instead, forest areas should be valued as social, cultural and ecological values. Brazil's forests are the biggest victim of illegal loggers, miners and ranchers who have cleared such large cloaks of forests for personal capital benefits. Amid such a high level of deforestation in the forests of Amazon, environmentalists, indigenous people, researchers and policy makers are concerned about forest ecology and biodiversity.

3.1. Overview

Brazil lost 29.5 Mha of primary forest between 2002 and 2022, making up 47% of the nation's entire loss of tree cover over that time, according to Global Forest Watch. Over this period, Brazil's entire humid primary forest area decreased by 8.6%. Brazil lost 48% of its tree cover between 2001 and 2022, with deforestation being the primary factor. Brazil's deforestation has a big environmental and social impact. Deforestation has a negative impact on the environment because it causes an increase in greenhouse gas emissions (Zaman, 2022). A major issue is the effects on human health, particularly in northern Brazil where the majority of deforestation takes place. The increase of cattle has been the primary cause of the massive deforestation brought on by the economic cycles in the Brazilian Amazon (Barbanti, 2015). Biodiversity loss, exploitation of the soil, and pollution in watersheds are consequences of deforestation in protected areas and on indigenous territory. Brazilians are now more cognizant of the value of the natural environment and biodiversity, which has led to a beneficial shift in social perception towards deforestation (Riberio et al, 2015).

3.2. Factors driving deforestation in Brazil

Deforestation is the result of modernization and progress with resource extractions, land use change, agriculture and commodity production by colonizers to eliminate, remove and exclude indigenous communities (Urzedo and Chatterjee, 2021). An article 'Lack of transparency and social participation undermines the fight against deforestation in Brazil' develops the argument

on how deforestation in Amazon has created unrest, lack of satisfaction and misinformation among the public when asked the government for forest data related to illegal and legal deforestation (Carvahlo et al, 2022). After that, it offers suggestions on how to curb deforestation and boost Brazil's influence in international affairs, including the social involvement of forest people in decision-making processes and transparent, truthful data sharing. Therefore, this forest issue is not limited to economic, social or ecological problems but now is a matter of public unrest. However, despite understanding the importance of the trees Brazil has lost its huge chunk of forests even in the recent past. With the most recent event of elections in Brazil with Lulu de Silva winning based on his manifesto focusing on protection of indigenous people and forest conservation. The whole world was watching the political shift of Brazil in the 2022 elections.

4. DEFORESTATION IN INDONESIA

On the other hand, is Indonesia with 92 million hectares of forest land area (fao, 2020b). Indonesia comes under the top 10 countries with the largest forest area covered in 2020. Therefore, an analysis of the status of Indonesia's forests- on deforestation and impact becomes important. With economic difficulties faced by the Indonesian government, in late 1960s they started recognizing the forest sector as a source of timber extraction revenues and later as a source of land for the spread of agriculture (Osgood, 2023). Different factors contribute to deforestation in Indonesia. The main causes of deforestation and the deterioration of mangroves in the nation are anthropogenic activities, including land conversion, extractive activities, household and industrial activities, and more. Due to Indonesia's culture of corruption, which facilitates illicit logging, corruption also contributes to deforestation. Additionally, as a result of economic integration's negative externalities, which include increasing deforestation, both economic development and trade openness contribute to deforestation (Pachmann,2018). Deforestation in Indonesia is also attributed to wood consumption, export of forest products, conversion of forest area to agricultural use, and forest fires. The forests and ecosystems of Indonesia are seriously threatened by these elements, as well as by climatic changes worldwide and sea level rise.

4.1. Overview

Global Forest Watch estimates that between 2002 and 2022, Indonesia lost 10.2 Mha of humid primary forest, which accounts for 35% of the nation's overall loss of tree cover during that time. The primary humid forest area in Indonesia decreased overall by 11% throughout this period. Between 2001 and 2022, deforestation accounted for 96% of the loss of tree cover in Indonesia. These losses occurred in those areas.

4.2. Factors driving deforestation in Indonesia

Contributors of forest loss in Indonesia are small scale agriculture, small scale plantation and mining activities (Austin, 2019). However, there are still other factors responsible for deforestation which remain unknown to the people and policy makers (Geist and Lambin, 2002). It further complicates the situation for designing and planning better policies on forest

conservation and forest management approaches (Weatherley-Singh and Gupta, 2015). As migrants frequently encounter severe obstacles from the local population in claiming the property, they seek to search new forest areas that can be used as a means of habitation or transformed into an agricultural plantation, which may contribute to the shift in the forest cover (Darmawan, Klasen, and Nuryartono, 2016). Economic constraints are faced by indigenous people of forest, small scale farmers convert the forest lands into agricultural lands. It is difficult for local people as well as the flora- fauna of the forests to survive when the forests are facing fires, slash and burn and more destruction. Even though most of the forest land is technically under the jurisdiction of the State, property rights over forest land are not well established in Indonesia (Purnamasari, 2010). Despite the fact that the State officially has control over the majority of the forest land in Indonesia, forest land property rights are not well established. This further creates the complication of land ownership affecting the local tribes of the forests. In the article, 'Deforestation in decentralized Indonesia: What's law got to do with it?' It is mentioned that the literature on decentralization's effect on deforestation has treated the topic from a political economic viewpoint, concentrating on the emergence of local politics in forest management and its connection to centralized power (Arnold, 2008).

The two nations discussed above share a common challenge on deforestation from national to regional, from economic to social and from environmental to political levels. Both the nations have failed to recognize the importance of the forest dwellers and their traditional ecological knowledge while formulating policies. This scenario points out another important thing i.e. lack of participation of local people can become a huge setback in national elections.

5. DEFORESTATION IN INDIA

Deforestation in India is a significant environmental issue that affects the country's biodiversity and forest cover. In the upcoming years, deforestation is anticipated to accelerate due to causes such as shifting farming, rotational felling, and the use of forest areas for other purposes (Bowonder, 1982). India's expanding people and livestock populations are among the factors contributing to the process' acceleration (Kumari, 2019). Global forest cover has decreased as a result of uncontrolled tree cutting, though India's total forest cover has slightly increased. To halt the trend of deforestation, significant policy adjustments are required, including increased support for forest production and intensive agroforestry initiatives (Reddy et al, 2016). Deforestation has major negative effects on the ecosystem, including the microclimate, hydrological cycle, soil quality, and biodiversity, which increases vulnerability in the nation (Nivithra and Jasmin, 2020). Among the actions that can be taken to stop deforestation are alternatives to shifting farming and sustainable forest management techniques. India comes under the top 10 countries with highest forest covers globally. India seems to have increased its forest and tree cover area in the last few years. Therefore, with India explaining approaches, policies, and experiences related to its forest management can be helpful to Indonesia and Brazil for their forest management.

5.1. Overview

India lost 393 kha of humid primary forest between 2002 and 2022, which accounts for roughly 18% of the country's entire loss of tree cover during that time, according to Global Forest Watch. At this time, the area of India's humid primary forest decreased by 3.9%. Between 2001 and 2022, 3.3% of India's tree cover was lost in areas where deforestation was the primary factor. The world has lost 420 million hectares (Mha), or around 10.34 percent of its total forest area, over the previous 30 years (SOFO), which was published on May 2, 2022 (DTE, 2022).

5.2. The Schedule Tribe and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006

The Global Forest Resource Assessment study from 2020 estimates that India contributes around 2% of the world's forests, covering an area of 72.16 million hectares (fao, 2020c). Approximately 275 million rural people in India rely on forests for their subsistence and livelihoods (Nitnaware, 2023). So, to safeguard the local forest communities who live in forests for their food and fodder since ages a new act came into existence. Forest Right Act adopted in 2006 to recognise and grant those (Schedule Tribe and Other Traditional Forest Dwellers) who depend on the forest for their livelihood, their occupation, their rights to the forest land and their right to protect and conserve forests in a traditional manner.

Forest dwellers are some of the most vulnerable and impoverished people in society, and many of them are tribal people. Year 2008 is known as the implementation year of the Forest Rights Act. It attempts to come together to correct the "historic injustice" done to those whose primary means of subsistence are forests (FRA, 2014). The Act recognizes and grants the forest communities the legal right to utilize, manage, and protect forest resources as well as the right to legally possess the forest land they have been utilizing for habitation and cultivation, to sell and earn from Minor Forest Products. The forest industry in India is an environmental, societal, cultural and economic factor. In addition to serving essential national conservation goals, forests in India have enormous potential for reducing poverty and boosting rural economies (Kumar, Singh and Kerr, 2015).

The essence of the Act lies in the fact that it demands for a democratization of forest governance in a country where 275 million rural people are dependent on this natural resource. The inclusion of Gram Sabha or the grass root level administration is one major reason for the Act to be worth appreciating. The Gram Sabha being granted the authority to manage and preserve its forest is the FRA's most appreciated clause. Without the Gram Sabha's consent, neither a project nor a conservation strategy for the forest may be carried out. Additionally, The Act grants the Gram Sabha considerable power, enabling the indigenous population to have a sizable role in the creation of regional policies and programs that affect them. This provision of the Act signifies the importance of local level administration. The prominence of involving indigenous people in forest policy making procedures is another reason for the Act to have received successful feedback from different states of India. Additionally, it recognizes the critical function that forest resident plays in ensuring the longevity, sustainability of forests and the preservation of biodiversity (Trivedi, 2020).

5.3. Key Provisions of the Act

Following the objectives of the Act, there are four types of rights mentioned in it. These are:

1. Title Rights:

- No new lands will be granted;
- Ownership is only provided for land that the concerned family is currently farming.
- It gives forest inhabitants or tribal members ownership rights to up to 4 hectares of land that is used for farming.

2. Use Rights:

- Locals are allowed to utilize pastoralist routes, grazing lands, and small-scale forest products.
- The rights to housing and self-cultivation, which are generally viewed as personal freedoms.
- Community-held rights to resources deemed to be common property, such as access to water sources derived from forests, grazing, and fishing.

3. Relief and Development Rights:

- All forest villages, old habitations, unsurvey villages, and other villages in forests have the right to build and transform any forest community into a revenue village, subject to restrictions for forest protection.
- All forest villages also have the right to the distribution of forest land for construction projects that will satisfy the community's basic infrastructural needs.

4. Forest Management Rights:

- This right includes the right to regenerate, safeguard, or manage any communal forest resource that has historically been conserved for future use.
- The right to traditional knowledge relating to biodiversity and cultural diversity as well as intellectual property. • Recognition of the rights of traditional traditions.

5.4. Adopting a bottom- up Approach

The fact that FRA, 2006 was passed in India because of democratic processes propelled by forest dwellers' demands for the recognition of their rights to the land (Kumar, Singh and Kerr, 2015) is an example for the world to be motivated in the same democratic manner. Also, the forest dwellers are the actual knowledge bearers of forest who are encouraged to indulge in policy making.

The following are the responsibilities of forest rights holders with regard to recognition, restoration, vesting, and related matters. The Gram Sabha and village-level institutions are granted the power to: (a) protect the wildlife, forest, and biodiversity in regions where holders

of any forest rights under this Act are present; (b) guarantee adequate protection for neighboring catchment regions, water supplies, and other ecologically vulnerable places; (c) guarantee that the habitat of Scheduled Tribes and other traditional forest inhabitants is protected from exploitation in any way. These pointers allow the act to stand out in many senses. The FRA 2006, has provided important provisions in Indian states with so many people dependents on forests. These provisions include political, cultural and socio- economic rights of the forest people. Having said that, India is a huge country where the chances of loopholes and implementation hurdles are inevitable. Therefore, the next section discusses the hurdles faced while implementing the act in different ways. This will allow other nations to get a clearer vision of various situations that can be handled before in their states.

In order to remedy the historical injustice experienced by tribes and people who live in forests, the Indian government passed the Forest Rights Act (FRA) in 2006 (Bisht et al., 2023). The Act aims to give these groups access to land and forest rights while also legalizing unlawful land holdings in forests (Hebbar, 2022). However, the FRA's implementation has been difficult and contentious, with conflicting results (Kumar, 2022). Scholarly discussions on the FRA have emphasized a variety of viewpoints, including stances that emphasize advocacy, welfare, community, debate, and technology (Bandi, 2013). Policy recommendations that strengthen external socio-political institutions have been impacted by negative framings of forest dweller groups (Kjosavik, and Shanmugaratnam, 2021). The FRA has come under fire for failing to validate the experiences of forest dwellers and for not addressing the institutional practices and procedures that led to their marginalization.

5.5. Impact and Challenges of the Act

However, the tasks have not been accomplished by the FRA implementation, despite its potential and intended use (Bose, 2010). Years after the Act's enactment, several states have not implemented it because they are unaware of its contents or are reluctant to do so (Mishra and Tripathi, 2022). Reasons like the forest department's dominant position, failure to treat the community as an equal partner, a lack of institutional support, and insufficient legal protection, have prevented the policies from being implemented satisfactorily (Pratap, 2010). So, we need to understand the ground level problems which acts as hindrance to achieve the goals of FRA, such as: unclarified meaning of forest; lack of understanding about FRA policy by locals and officials (Macura et al, 2011); not recognizing the socio-cultural knowledge of locals with nature, lack of environmental consciousness among people (Guha, 2014) etc.

Some studies talk about the process of institutional change for a better understanding of the framework of the FRA, 2006 policy. Apart from political and institutional characteristics the focus must shift to 'actors' who are involved in implementation of policies but for their personal gains (Das, 2022). Implementation of FRA, 2006 in Odisha illustrates a lower rate of coverage due to misinformation, information gap, lack of knowledge about the Act, remoteness/ isolation of the area and because of the mistrust between the forest dwellers and the forest officials (Mishra, 2019). We must go beyond prescribed knowledge focused on silviculture and establish useful connections with indigenous forest expertise created over generations of trial and error by people who lived in the forest (Ramakrishnan, 2007). A key aspect of Indian law is the

Forest Rights Act. It is critical to recognize the right of forest residents to sustainably use and manage forests for economic, political, and ecological reasons in order to correct a historical injustice and strengthen the conservation regime (Lee and Wolf, 2018). With mentioning the loopholes in the policy, some recommendations can be worth providing for its better formulation and execution.

6. IMPORTANCE OF CROSS BORDER CONNECTION

India, Indonesia and Brazil have been facing deforestation for a long time. Fights and protests are some common tools used by forest dwellers from time to time to protect their livelihoods. Indonesia, Brazil and India are developing countries with a common history of colonial past and struggle for socio-economic, political, cultural and ecological powers in post-independence. Over the years each of these countries have had their share of brawl and battles. Therefore, one can help the other with significant powers and policies based on the problems one is facing. In case of deforestation, India's FRA can be a helpful tool to others.

6.1. Recommendations for the Act while implementing

The Act can engage in some changes in order to be more efficient and effective while implementation. Some suggestions for future work of the Act are mentioned below:

- The FRA presents an opportunity to fundamentally restructure forest governance and forest conservation by transferring responsibilities from the states to the local people. But if people are unaware of the Act, it won't be effective. Therefore, an awareness camp should be set up in the forest villages so that the people who live there can learn about their rights and duties to the woods. This will make it easier to give security to the ecosystem and the ability of the communities to survive.
- In order to have an accurate report on forests, improved and new technologies for conducting forest surveys should be made available. To have accurate and transparent statistics, nations must discard outdated methods.
- Before considering their own interests, forest administrators and forest residents should recognize the value of the forest. Therefore, it is important to promote improved communication between the two sides.
- The achievement of the policy depends on the forest dwellers' traditional wisdom. With a bottom-up approach, this will aid in boosting forest residents' participation.

Understanding communities' rights to manage, use, conserve, and maintain the forests and other natural resources that they have historically accessed may lead to a successful implementation of the policy. These natives and forest inhabitants are the true protectors of the forests. Therefore, it is essential that they take an active part in the numerous biodiversity activities to guarantee the accessibility and sustainability of forests. They are likely the backbone of global environmental challenges, with their time-tested sustainable practices ready to contribute to the preservation of this planet.

7. CONCLUDING REMARKS

Unrestrained tree cutting has resulted in a drop in the world's forest cover, but India's overall forest cover has increased comparatively. Significant policy changes, such as increased funding for forest production and intensive agroforestry programs, are needed to reverse the trend of deforestation. Indonesia and Brazil have faced deforestation for a very long time.

Illegal loggings, cutting huge number of trees in the name of development, displacement of wildlife, flora and fauna, lack of knowledge about legislations concerning indigenous rights on forest lands, misuse of power and disparity between locals, administration and the state are some reasons that has affected deforestation directly as well as indirectly.

India has also faced such problems but with time, discussion and prospects on the issue India has been able to address it with the legislation of conserving forests, securing wildlife and protecting the rights of forest dwellers.

The Forest Right Act of 2006 is a very special and essential act of all times. Initially, there had been problems while implementing the act but with due course of time and experience this act has helped in awareness of forest protection programs and has helped vocalize the forest dwellers by including them in Gram Panchayat decisions and discussions. Indigenous people of forests have traditional knowledge of using forest products judicially and sustainably.

Including them in legislative discussions (through FRA provisions) where they are welcomed to give suggestions on forest protective measures is a step closer to a more democratic and more sustainable future for all.

Based on the issue of deforestation, analysis of the forest rights legislation of the three countries (Brazil, Indonesia and India) with similar historical background of colonial past has affected their policies, laws and acts. Comparatively, India has been able to increase its forest area in the past few years.

Bionote

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