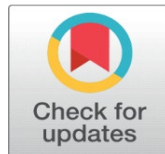
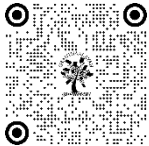


ENVIRONMENTAL SUSTAINABILITY AND LIVELIHOOD QUESTION THROUGH THE FOREST RIGHTS ACT, 2006 IN TRIPURA

Gouri Kalai ¹, Dr. Bindu Ranjan Chakma ² 

¹ Research Scholar, Department of Political Science, MBB University, Agartala, Tripura

² Associate Professor, Department of Political Science, MBB University, Agartala, Tripura



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ABSTRACT

Sustainable Forest Management (SFM) is now given top priority for ensuring environmental and social sustainability. As an approach of SFM, the Government of India enacted the Forest Rights Act of 2006 (FRA-2006). The Government of Tripura implemented the FRA, 2006 in 2008 and since then, it introduced and executed various schemes under the FRA, 2006 for social sustainability of the tribal forest dwellers. The paper studies the nature of implementation of the FRA, 2006 in Tripura from the perspective SFM. The study argues that albeit implementation of FRA, 2006 increased income and improved life styles of tribal household beneficiaries, yet due to encouragement of extensive rubber plantation (mono culture) under the implementation of FRA, 2006, it has questioned about environmental sustainability. However, the paper argues that the scope of SFM through the implementation of the FRA, 2006 is extensive if, despite high economic benefits, it can reduce the dependency among the beneficiaries upon rubber plantations and encourage shifting to various other economically and environmentally viable occupations.

Keywords: Sustainable Forest Management, The Forest Rights Act Of 2006 (FRA-2006), Tribal Forest Dwellers, Environmental Sustainability, Sustainable Social Development, Sustainable Livelihood, Rubber Plantations



1. INTRODUCTION

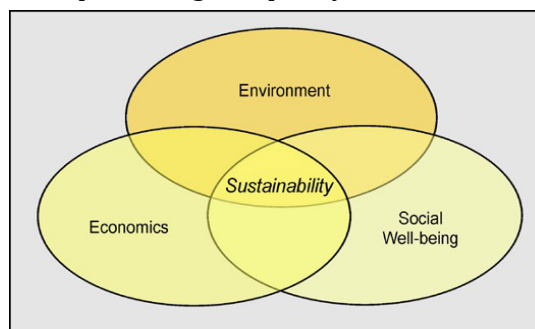
Environmental threats are now considered as major impediment on human progress and ensuring social sustainability. Environmental sustainability is a prerequisite for maintenance of our life support system on the planet. Forest is an important ecosystem. Conservation of forest ecosystem is indispensable for environmental sustainability. As per the India State of Forest Report (ISFR) 2021, the total forest cover was 7,13,789 square KM which accounted about 21.72 percent of the geographical area of the country (ISFR, 2021). Approximately 300 million people are dependent on forests in India (ISFR, 2019) for their survival. Sustainable forest management (SFM) is prerequisite for achieving development outcomes of the forest sector resulting in increase of income, employment, government revenues and environmental services. In 2006, the Indian Parliament passed the Forest Rights Act 2006 (FRA, 2006), a historic and landmark forest management law in consonance with SFM. This paper seeks to study environmental sustainability and livelihood question of the tribal forest dwellers in Tripura through the FRA, 2006 as an approach of SFM. It studies the nature of implementation of the FRA, 2006 and investigates its efficacy in meeting the outcomes of SFM in Tripura.

The study has been carried on in two villages situated within Tripura Tribal Areas Autonomous District Council (TTAADC)-namely South Maharanipur under Mungiakami R.D Block and South Ramchandraghat under Padmabil block with an involvement of 100 respondents with 50 respondents selected randomly from each from these two ADC villages. The study also consulted secondary data collected from various records of the Forest and tribal welfare departments, the government of Tripura, relevant books, articles, websites, and various other official gazettes and notifications.

2. BACKGROUND OF ENVIRONMENTAL SUSTAINABILITY AND SUSTAINABLE FOREST MANAGEMENT

Environmental sustainability is defined in term of “maintenance of natural capital’ outlining a set of constraints regulating human activities on the use of renewable and non-renewable resources on the source side, pollution and waste generation on the source side” (Goodland: 1995). In the 1970s, there was an international consensus on the need of environmental sustainability for economic and social development. The first significant milestone was the first United Nations Conference on Human Development held in Stockholm in the year 1972. The Conference emphasised on ‘environmentally sound development’ known as ‘eco development’. The Conference also contributed to the development of the term ‘sustainable development’ (SD) which was figured predominantly at the UN World Commission on Environment and Development (WCED) in 1983 and in its report called “Our Common Future”, also recognised as the “Brundtland Report”, published in 1987. The report introduced a widely accepted definition of SD: “Progress that meets the need of the present without compromising the ability of future generations to meet their own needs” (Brundtland Commission Report, 1987). In the 2015 UN Summit, “Transforming our World: The 2030 Agenda for SD, the member states listed 17 SD goals for translating the idea of SD (Iglesias et. al: 2021).

Lee and O’Neil (2004) defined sustainability as “a synergistic process whereby environmental, economic and quality of life considerations are effectively balanced in project planning, design, construction, operation and maintenance in meeting the needs of the present without compromising the quality of life for future generations”.



The concept of sustainability (Lee and O’Neil: 2004) (www.epa.gov/gmpo/lmrsbc/pdf/pres3_MRBA_framework.pdf)

According to Cotter and Hannan (1999:171-172), sustainability works on some key principles: (i) integration of environmental, social and economic considerations in decision making, (ii) community involvement in undertaking and implementation of development project, allowing them to share their knowledge as an effective approach to community development including monitoring the state of the environment, (iii) precautionary behaviour to prevent serious or irreversible environmental damage, (iv) equity within and between generations outlining the concept of fairness and equal access to opportunities for both present and future generations (v) continual improvement of environmental situation with increases in community awareness of sustainability issues and technological improvement and (vi) ecological integrity recognizing the interdependence of all parts of the natural environment.

Similarly, Crawford, Young and Miall (2002) also describe sustainability ‘as a coherent conceptual framework by integrating the social, environmental and economic dimensions in a systems approach’. So, sustainability as a conceptual framework is built upon three important equilibrium components---environment, economic and social well-being.

On the other hand, sustainable forest management was defined as “maintaining economic stability is achieved when, per unit of time, an amount trees are cut down as the same amount of growing” (Iglesias et. al: 2021). SFM also shares the environmental, economic, and social values.

SFM provides the following ecological, economic and social values (Bhardwaj: 2022).

Ecological	Social	Economic
Climate stabilization	Recreational and leisure area	Timber
Soil enrichment	Traditional use	Timber non-wood forest products
Regulation of water cycles	Landscape	Employment
Improved biodiversity	Employment	
Purification of air		
CO ₂ sink		

3. FOREST RIGHTS ACT, 2006 AND SUSTAINABLE FOREST MANAGEMENT

The Parliament of India passed and enacted a historic and landmark law, popularly known as FRA, 2006. Before the enactment of the FRA, 2006, under India's forest laws, unlawful settlement in the forest areas was not free from impunity leading to belligerency and repugnance between the traditionally forest dependent communities and forest officials enforcing the laws of forest governance. The forest governance of the colonial administration converted many natural forests into protected and reserved forests curtailing the traditional and customary forest rights of tribal people and causing displacement of thousands of such people (Singh, 2022). The government of India largely inherited the British colonial forest policy restricting the traditional rights of the tribal forest dwellers over forest resources (Bandyopadhyay, 2010). Naturally, it witnessed several tribal forest movements which demanded for inclusion of the experiences and knowledges of the forest-dwelling people in forest governance. The forest governance based on such draconian laws was counter productive and criticized for not being taking care of social sustainability. It was also criticized for commercialization of forest resources even at the cost of environmental sustainability. In other words, the forest governance did not have the basis of SFM during the colonial era and even independent India until the enactment of the FRA, 2006.

The FRA, 2006 as SFM perspective includes the following the most noticeable features (<https://twd.tripura.gov.in/forest-rights-act-2006>)

- 1) It confers the right of holding and living in the forest land to the eligible FWSTs and OTFDs
- 2) The Act entitles the right of collecting, using and disposing of the traditionally collected minor forest produces within or outside the village boundaries.
- 3) The right of entitlements such as grazing, the product of water bodies including fish and use of other traditional seasonal resources.
- 4) The FWST and OTFD communities are entitled for protecting, regenerating or managing the traditionally conserved and protected community forest resources for sustainable use.
- 5) The Act also confers the right of intellectual property over traditional knowledge and to claim for equal benefits arising out the use of diverse bio-resources.

FRA, 2006 and its benefits as SFM approach

Ecological	Social	Economic
Climate stabilization	Poverty reduction	Timber
Soil enrichment	Traditional use of forest lands	Timber non-wood forest products
Regulation of water cycles	Entitlement over forest lands addressing the problem of landlessness	Employment
Improved biodiversity	Increasing community bonding and fostering a sense of belonging and mutual support	Livelihoods

Purification of air	Right of intellectual property over traditional knowledge	Poverty reduction and economic empowerment of these communities
CO ₂ sink	Integration of the forest dwellers for community-based forest management fostering social and responsibility	Improving the scope of market access among these communities

4. IMPLEMENTATION OF FOREST RIGHTS ACT, 2006 IN TRIPURA AS SFM APPROACH

Tripura houses lush green tropical forests and biodiversity. The registered Forest Area of Tripura is 6,249 sq. km. which includes 4,175 sq. km Reserved Forest; 2 sq. km Protected Forest and 2,117 sq. km Unclassed Forest.



Figure 1 Forest Map of Tripura

Source: www.google.com/search?q=tripura+forest+map

The livelihood of tribal communities of Tripura are largely depended on forests. They cultivate jhum (shifting cultivation) on the hills as the basic source of livelihood. During kingship period, the king was the absolute owner of land and forests. Following Tripura's merger with India in 1949, these forests were recognized as the government's forests. However, the tribal people of Tripura continued to live in the forests without any legal ownership with a conviction of their traditional ownership over forest land. Naturally, the tribal forest dwellers of Tripura also faced eviction from forests until the enactment of the FRA, 2006.

With the acceptance of the FRA, 2006 in 2008, the government of Tripura took up the responsibility for granting forest rights to the eligible forest dwellers. Since most of the forest lands in Tripura come under Tripura Tribal Area Autonomous District Council (TTAADC), the Tribal Welfare Department (TWD) was made as the Nodal Department for implementing the different clauses of the FRA 2006. The TWD, in association with other departments like forest, revenue, fishery, and animal husbandry, executes different plans and programs for improving the economic condition of the beneficiary families. In accordance with the FRA, 2006, the Government of Tripura constituted different Committees at various levels to monitor the implementation process of the FRA, 2006.

The status of implementation of the FRA, 2006 as of December, 2021

Table No 1

Sl No	Category	No. of claims received	No. of claims considered	Quantum of land involved (in hectares)	No. economically benefitted ST families	No. ST families provided with IAY house
1	ST	1,66,575	1,30,902	1,88,753.26	1,09,662	32,722
2	OTFD	33,774	2			
3	Community	88	Nil	207.632		

Source <https://twd.tripura.gov.in/forest-rights-act-2006>

The demarcation of individual land rights over forests is done through erection of boundary pillars and other economic benefits. Indira Awas Yojana (Now Pradhan Mantri Awas Yojana) aided with building of a house for 7953 Individual Forest Rights (IFR) householders in 2013. The other initiatives included were the “Tripura Forest Environmental Improvement and Poverty Alleviation Project” funded by the Japanese Government through the Japan International Co-operation Agency (JICA) (Tiwari and Kayenpaibam, 2006) and the Indo-German Development Cooperation Project (IGDCP) as “Participatory Natural Resource Management Project” for upliftment of the tribal forest dwellers in Tripura. The aim of these projects was to generate livelihood opportunities for the wholly or partially forest dependent tribal householders (Khosla and Bhattacharya, 2020).

JICA-Tripura provided formation of Joint Forest Management Committees (JFMC) and Women Self-Help Groups (SHGs) in the village. The SHGs and JFMC availed loans for plantations, poultry and piggyery, etc.

The IDGCP is providing assistance for forest conservation and socio-economic development of tribal jhumias. A total of 28,150 individual land rights holders have been benefited out of this project for achieving sustainable land management. A cumulative plantation under 8847 hectares of land involving 12,163 people was also achieved. Dams built for practicing fisheries benefitted 3359 villagers.

Figure-2 Status of District-wise Implementation of FRA in Tripura (as on 20.09.2022)

District	Total Record	Total Updated	Total Pending for Updating	Total Verified & Locked	Total Scrutiny
<u>Dhalai</u>	33517	33281	236	32146	2323
Gomati	25828	24643	1185	24632	1757
<u>Khowai</u>	15301	15179	122	14302	608
<u>North Tripura</u>	15033	13767	1266	13462	236
<u>Sepahijala</u>	7839	7775	64	7709	976
<u>South Tripura</u>	20596	20434	162	19599	2893
<u>Unakoti</u>	6201	6201	0	6201	3855
<u>West Tripura</u>	5150	4881	269	4881	308
	129465	126161	3304	122932	12956

Source Status Report 20th September, 2022, Tribal Welfare Department, Tripura

Tripura ranked first in 2012, 2013, 2014, 2015, and 2016 in conferring land rights as compare to the number of claims (Khosla and Bhattacharya, 2020). The TWD in coordination with other departments provided various assistance to the beneficiaries such as cash crops or industrial crops like rubber, horticulture, loan to SHGs etc.

The socio-economic status of the respondents of the two villages are given below:

Table 2

Category of Beneficiaries	<i>Scheduled Tribe Males & females</i>
Age of Beneficiaries	<i>Age group between 35 years - 85 years</i>
Educational Qualification of Beneficiaries	<i>Mostly uneducated.</i>
Range of Land holding	<i>5 kami – 10 kani (local unit of land meseasurement)</i>
Income range of Beneficiaries	<i>24,000/- to 1,44,000/ per year</i>
Source of Income of Beneficiaries	<i>Rubber Plantation, Bamboo Cultivation, Pine-apple cultivation</i>

Table 3

Category of Beneficiaries	<i>Scheduled Tribe Males & females</i>
Age of Beneficiaries	<i>Age group between 37 years - 87 years</i>
Educational Qualification of Beneficiaries	<i>Mostly uneducated. Some are undereducated (up to high school)</i>
Range of Land holding	<i>2 kani – 6.25 kani</i>
Income range of Beneficiaries	<i>30,000/- to 1,50,000/ per year</i>
Source of Income of Beneficiaries	<i>Rubber Plantation, Bamboo Plantation, Litchi Plantation, Banana Plantation, betel nut Plantation</i>

Figure 3 Achievements under Economic Development Scheme (2013)

Schemes	Rubber plantation	horticulture	Tea plantation	Coffee plantation	Self-help groups	Help given
beneficiaries	17040 families	25574 families	932 families	310 families	1502 SHGs	3119

Among the various types of welfare schemes, introduced by the TWD of the Government of Tripura to ensure the Rights of Forest Dwelling Scheduled Tribes on forest lands, the plantation of cash crops is the most important one. The following table shows the distribution of plantation schemes.

Table 4 Distribution of plantation schemes (as in 2013)

Sl No.	Plantation schemes	No. of beneficiary families
1	Rubber	17040
2	Horticulture (fruits, vegetables, flowers and nuts)	25574
3	Tea	932
4	Coffee	310

Source: Tribal Welfare Department, Tripura, 2013- 2014

5. RUBBER PLANTATION IN TRIPURA WITH SPECIAL REFERENCE TO FRA-2006

Rubber is a cash crop. Tripura is the country's second-largest producer of natural rubber after Kerela. Rubber plantation in Tripura was introduced on a trial basis by the forest department, the Government of Tripura in the early 1960s (Roy, 2020). But the real success of rubber plantation started after its commercial cultivation with the formation of TRPC Ltd. in 1982, TRP&PTG Department in 1986 and the Tripura Rubber Board (TRB) in 1992. Economic upliftment of tribal jhumia families has been the major aim behind the implementation of rubber plantation schemes. Rubber plantation has proved to be a profitable plantation activity enabling the jhumias to shift to a settled livelihood activity through a long-term process of commercial plantation.

The scheme of Rubber cultivation in Tripura under the FRA 2006 is jointly implemented by the TWD and the TRB as a project. A study finds that rubber plantations in Tripura has been rapidly increasing after the introduction of the FRA-2006 from the initial years when it was introduced. TRB is also implementing various types of rubber-plantation schemes in coordination with State Government agencies like Tripura Forest Development and Plantation Corporation (TFDPC) Limited and Tripura Rehabilitation and Corporation (TRPC) Limited.

Table 5 Total Area of the state (in Hactre) under Rubber Cultivation (2001-2015)

Year	Total Area (in Hactre)
2001-2002	30576
2006-2007	35760
2007-2008	39670
2008-2009	46588
2011-2012	57620

2012- 2013	61231
2013- 2014	62529
2014-2015	70295
2015- 2016	74335

Source Rubber Board, Tripura

The above table shows that there has been a continuous expansion of rubber plantation from 2007-2008 to 2008-2009 in Tripura primarily due to the implementation of the FRA-2006 in 2008. Along with the State Government agencies like TFDPC Ltd and TRPC, the TTAADC has also put its best efforts into encouraging tribal families in rubber plantation.

6. RUBBER PLANTATION, LIVELIHOOD AND ENVIRONMENTAL SUSTAINABILITY IN TRIPURA

Rubber (*Hevea brasiliensis*) is a fast-growing tropical tree crop (Panda and Sarkar, 2020). Tripura has a warm and humid tropical climate, the soil of which is suitable for the growth of rubber plants.

Natural rubber production is a significant economic activity in numerous nations, providing livelihoods for over 40 million people globally (Shitiri and Johar, 2024). Rubber production plays a key role in the livelihoods of many tribal families in the state. In Tripura, it is the source of livelihood for many tribal families. Many jhum farmers have switched to rubber plantations from traditional cultivation. When rubber prices have risen globally, rubber farmers in Tripura with increased production have been benefitted from local employment, profitable income and achievement of basic needs. Rubber production has improved the socio-economic conditions of forest-dwelling communities. It provided them with profitable and long-term income reducing poverty and achieving livelihood security for the tribal families. This led to an increase in income of the rubber-producing tribal families and improvement in the housing structure and overall lifestyle of the tribal families in the state. The implementation of the FRA, 2006 has helped the households to increase income at an average of Rupees 30, 000 to Rupees 1,50,000 per year, which was contributed by mature rubber plantation.

Pictures of rubber cultivation taken by the authors on 25/02/2024 at Hezamara R.D. Block under Mohanpur Subdivision of West Tripura district indicate the loss of biodiversity within rubber plantation areas.



Pictures of Shepahijala sanctuary (taken from <https://in.images.search.yahoo.com/search/images?p=sepahizala+sanctuary+pictures&fr=mcafee&type=E210IN826G0&imgurl=https%3A%2F%2Fi.yimg.com%2Fvi%2FfTWqFUUDU1o%2Fmaxresdefault.jpg#id=16&iurl=https%3A%2F%2Fi.yimg.com%2Fvi%2FfTWqFUUDU1o%2Fmaxresdefault.jpg&action=click>) with full of biodiversity, accessed on February 20, 2024.



However, rubber plantations have raised concerns regarding their impact on environmental sustainability. According to a study, *Environmental Impact of Rubber Plantation: Ecological Vs. Economic Perspectives*, conducted by Panda and Sarkar (2020), rubber plantation is a real threat to the tropical forest. It is harmful to watersheds and destroys forest ecosystems. It negatively affects hydrological change, severe species, and the natural habitat. According to Panda and Sarkar, the basic difference between rubber plantations and other native ecosystems is lack of biodiversity because rubber plantation is monoculture (i.e. growing only one plant species in an area). Therefore, the main concern is not rehabilitation of tribal people through rubber plantation schemes but gradual degradation of the soil quality and disturbing the groundwater reserve. It also contributes to deforestation of natural forests and extinction of local species.

A study called *Socioeconomic and Ecological Impact Analysis of Rubber Cultivation in Southeast Asia* by Vongkhamheng, C., Zhou, J.H., Beckline, M. and Phimmachanh, S. (2016), also explained that rubber plantation establishment could result in a significant reduction in carbon biomass and create other environmental threats like a deficit of rainfall, depleted groundwater level, and an increase in annual temperature. The most important challenge associated with extensive rubber plantation is the loss of bio diversity. For rubber plantation, forests are cleared and when they are grown up, the other trees become completely uprooted.

Rubber processing wastage is another severe environmental problem due to the discharge of highly polluted wastes. The waste liquidated from rubber processing plants is acidic which hampers the growth of other plants. The study also finds that rubber tree leaves fall once a year, and the standing trees with dry leaves hinder the wildlife habitat.

7. CONCLUSION AND RECOMMENDATION

Environmental sustainability is now considered as basic human right. The other rights such as right to life, equality, liberty, justice etc. are dependent upon promotion of environmental sustainability as a right. The FRA, 2006 was introduced to promote SFM. Upon implementation of FRA, 2006 in 2008 in Tripura, the Government of Tripura constituted implementation committees at State Level, District Level and Sub divisional Level. According to Tripura Banadhikar (a Geo Special Survey of record of forest right patta), approximately 1,30,000 pattas have been issued to the beneficiaries for entitling forest land (<https://forestrights.tripura.gov.in/Forestrights/dashboard/frmEntryStatus.aspx>).

The beneficiaries adopted to various occupations such as agriculture, agroforestry, rubber plantation etc. The study explains that implementation of the FRA, 2006 in Tripura has immensely benefitted economically to the beneficiaries increasing income and achieving livelihood security for the tribal families. Therefore, implementation of FRA, 2006 in Tripura has ensured economic progress and social sustainability among the tribal beneficiary families.

However, contrary to the spirit of SFM, continuous encouragement of rubber plantation through the implementation of the FRA, 2006 in Tripura is also accompanied by environmental concerns, more particularly the loss of natural forests and the loss of biodiversity. Rubber plantation has increased greenery in Tripura but it is at the cost of loss of biodiversity.

For attainment of the goals of SFM through the FRA, 2006, instead of encouraging on extensive rubber plantation, the beneficiary households may be encouraged to shift to other environmentally and socially sustainable occupations such as agriculture, agroforestry, fishery, and animal husbandry animal husbandry etc.

8. CONFLICT OF INTEREST: NIL

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CONFLICT OF INTERESTS

None.

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