

# **ASSESSING PROGRESS AND IMPACT OF FRA 2006: A CASE STUDY FROM THE TRIBAL STATE OF TRIPURA, INDIA**

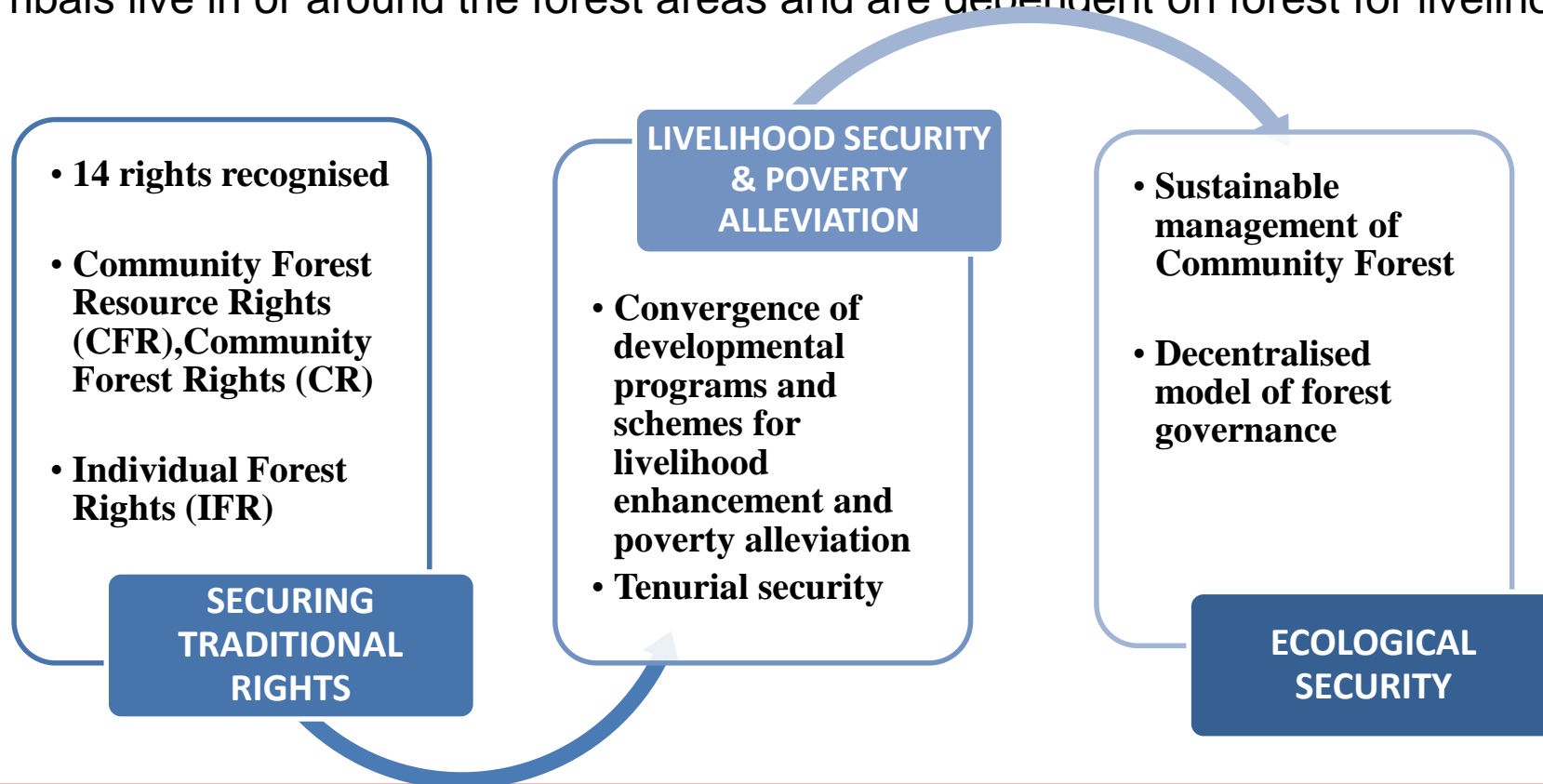
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# FOREST RIGHTS ACT (FRA), 2006

- *The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006* (FRA), was enacted by the government of India to recognise the rights of an estimated 200 million tribals.
- Tribals were denied their rights since colonial era due to which they lived in poverty.
- Tribals live in or around the forest areas and are dependent on forest for livelihood



Till 31<sup>st</sup> March 2018, 1.8 Million titles over 5.7 million Ha of forest land, have been distributed across 20 states in India (MoTA, 2017)



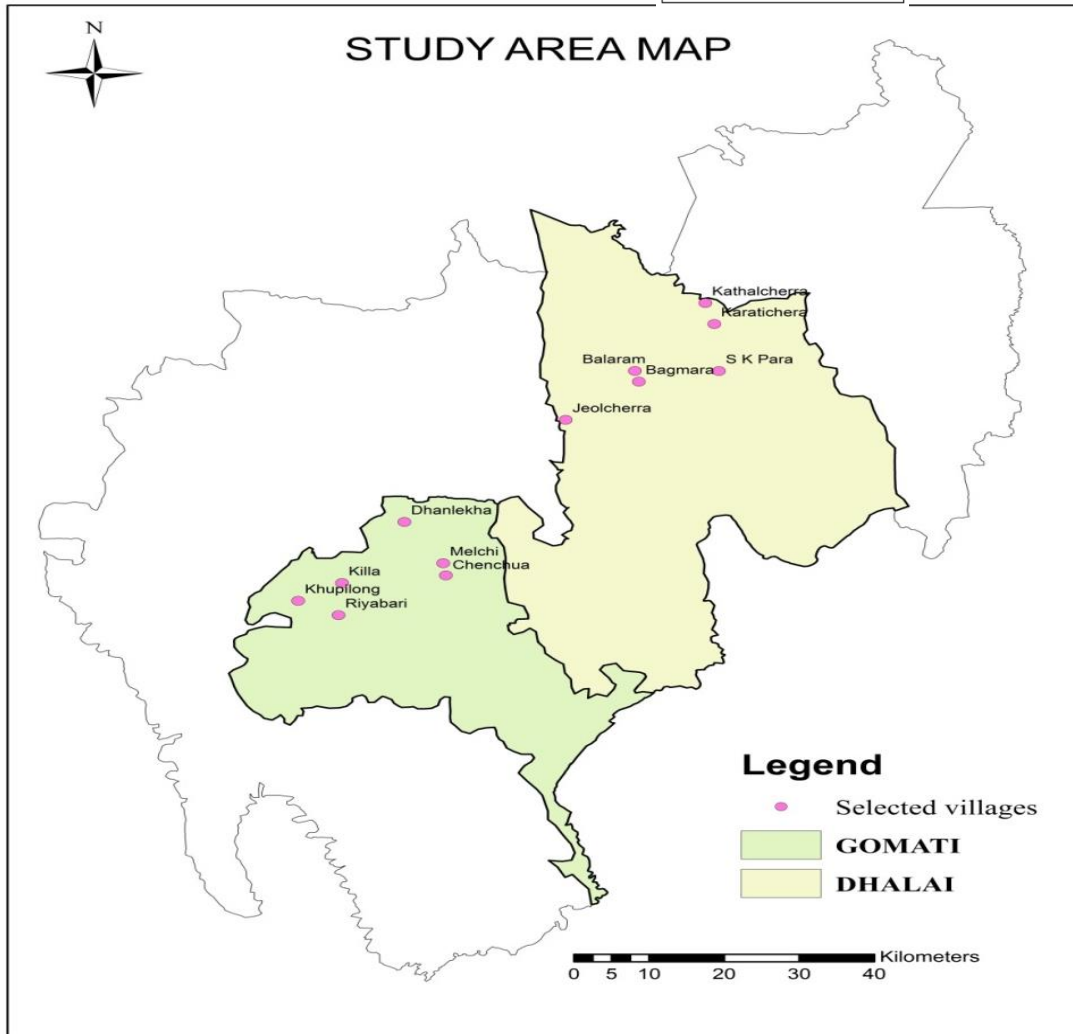
# STRUCTURE OF THE PRESENTATION

- Description of the Study Area
- FRA Implementation in Tripura
- Research Objectives
- Socio-economic assessment of the IFR holder
- Land use change & assessment of vegetation on IFR
- Relationship between the socio-economic index and vegetation index
- Conclusion & Recommendation



# **STUDY AREA: TRIPURA**

# STUDY AREA: TRIPURA



- **Tripura** is the third-smallest state in the country.
- Share International Border with Bangladesh on three sides
- Schedule VI State under Indian Constitution securing customary rights and Autonomous council powers in high tribal population areas
- 19 recognised Scheduled Tribes
- Scheduled Tribes population: 30% (MoTA, 2013)
- Tree and Forests cover of 75% (FSI, 2017).
- From Two districts, 12 villages, selected for the study

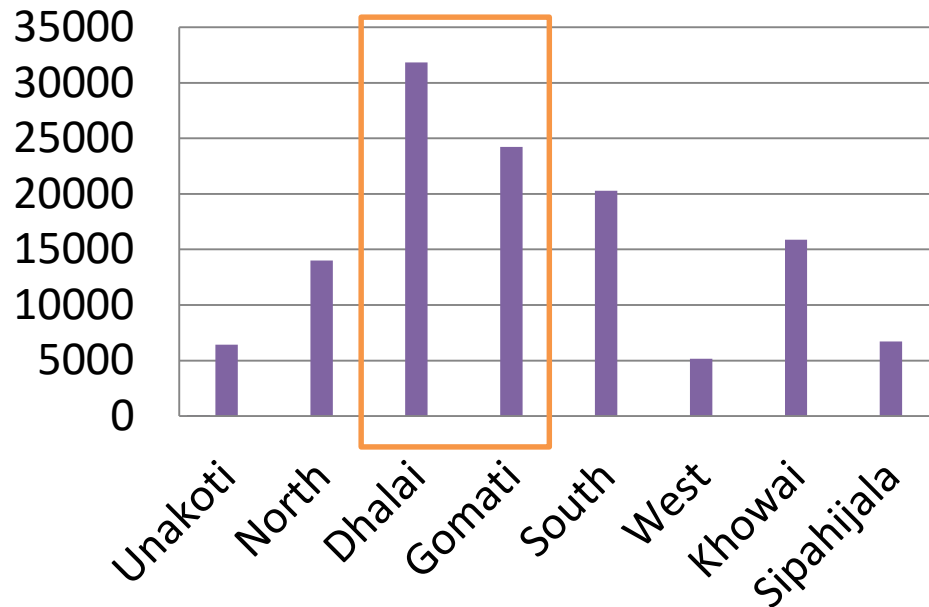


# FRA IMPLEMENTATION

- Tripura is an agrarian state .
- Pioneer State to implement FRA started in 2008.
- FRA aims to generate livelihood opportunities and conserve forests for the forest dependent tribal population.
- 90% of the rights, in the study area, were vested by 2009 .
- Focus on vesting Individual Forest Rights. Average Size of IFR 1.3 Ha
- Land rights recognised only for the scheduled tribe in the study area.
- Large immigrant population residing in the forest areas, some residing since 1971 or earlier.
- Intensified conflict between other forest dweller and Scheduled Tribes

# FRA IMPLEMENTATION

Number of IFR vested



No. of titles distributed	122,583 (IFR-122,528& CFR-55)
% of claims rejected	34.36%
claims pending	949

Source:MoTA 2017



IFR TITLE HOLDER

# FRA IMPLEMENTATION FOR LIVELIHOOD SECURITY

## BENEFIT SCHEMES FOR IFR HOLDERS

- As per Rule 16 of the FRA amended rules 2012: Convergence of benefit schemes and projects with IFR to provide long term benefit to the right holder

- Increase productivity and generating employment
- Put economy of IFR holders in a sustainable growth pattern.
- Maintenance of ecological balance

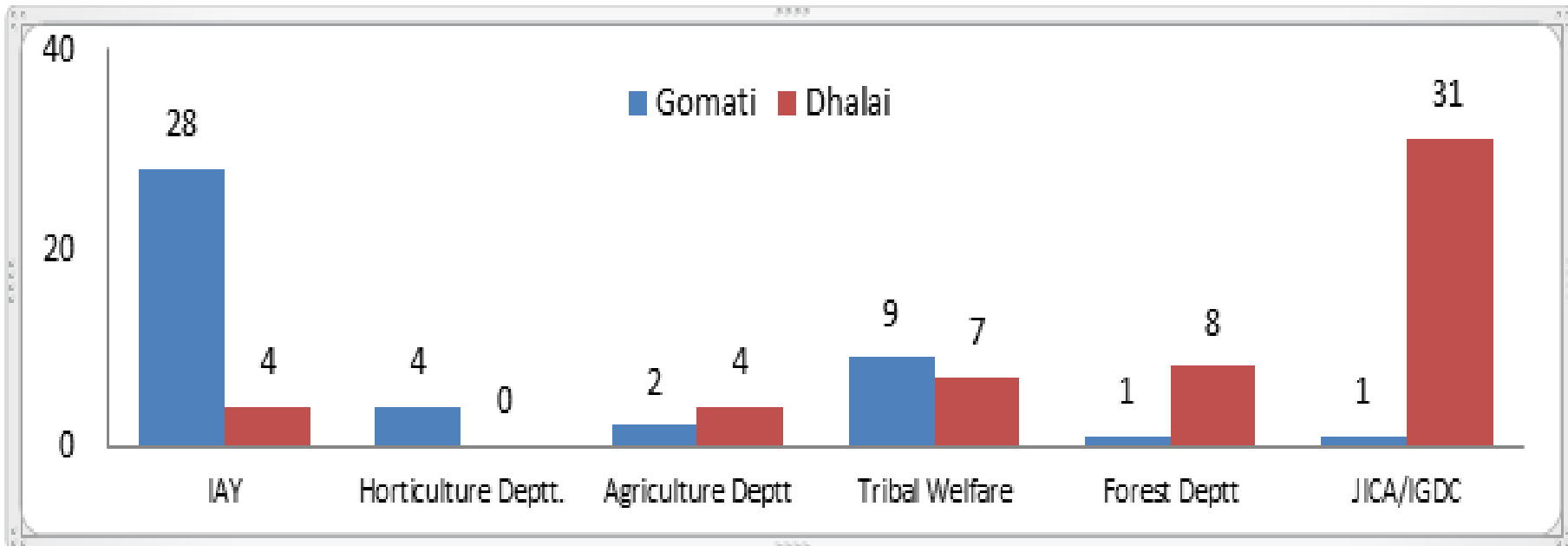
- The benefits include :
- Agriculture activities:  
Improved seed varieties.
- Plantation activities like Rubber plantation, Tea Plantation, Bamboo plantation etc.
- Other activities:
  - Animal rearing
  - Medicinal plants
  - Pisciculture
  - Housing
  - Horticulture
- NTFP Value Addition activities
  - Broom making
  - Incense sticks making

- Government line departments
- Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA)
- Tripura-Japan International Cooperation Agency Project (JICA)
- Indo-German Development Cooperation project (IGDC)



# BENEFIT SCHEMES FOR RIGHT HOLDERS

- Land development of IFR is dependent on distribution of benefit schemes
- Household coverage in study area : Dhalai : 71% of the households  
Gomati 40 % of the households.
- Schemes are distributed on the basis of priority list prepared by the Village council.
- The distribution of schemes is highly biased.
- Bilateral Project: More takers for IGDC project than JICA project



# BENEFIT SCHEMES IMPLEMENTED



**Agroforestry plantation**



**Mixed crop plantation**



**Assistance for house building under IAY**



**Bamboo Incense Sticks**



**Forest Department Nursery**



**Latex from Rubber Plantations**

# RESEARCH OBJECTIVES

To develop framework of parameters and assess the Socio-Economic Conditions of the IFR holding households .

To assess the change in land use and the vegetation conditions of on the IFR vested.

To understand the relationship between the socio-economic conditions of IFR holders and vegetation conditions on IFR.



# **SOCIO-ECONOMIC ASSESSMENT OF THE IFR HOLDER**

# SOCIO-ECONOMIC CONDITIONS

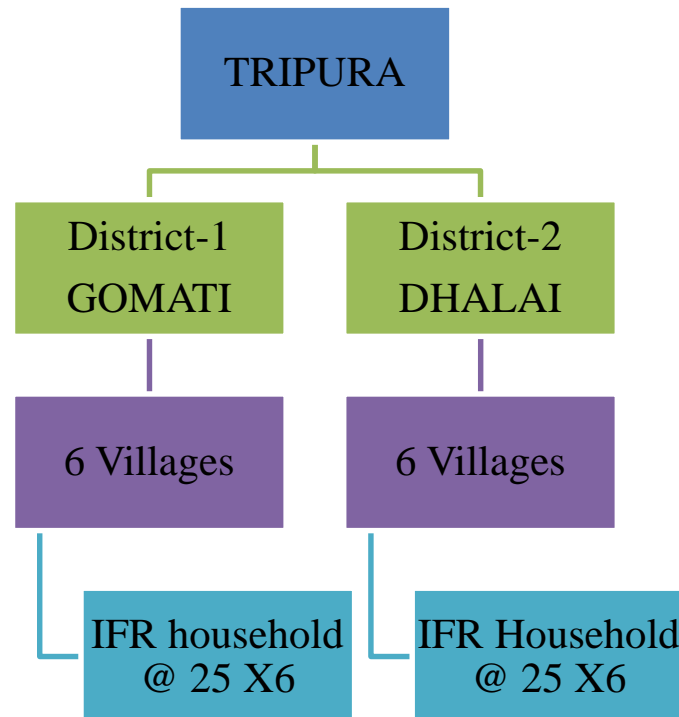
- Industrial Sector in Tripura is highly under-developed
- High Literacy rate of 87.8% (2011 Census)
- Tribals in Tripura are cultivators (37%) and marginal farmers (26%) and Rice is the major cultivation crop(91% of cultivated area)
- Shifting Cultivation or Jhoom remains an important source of Income, as only 27% of the land is cultivable due to hilly terrain and Forest.
- Tribals favour mono culture Rubber plantation, making Tripura the second largest producer of rubber in the country ( 37,277 million tonnes/yr (2015))
- Over 100 species of Bamboo, contributing 6% of bamboo sticks, used for making incense sticks in India.
- The state has favourable climatic conditions for cultivating various fruit and horticultural crops and medicinal plants etc.

# METHODOLOGY FOR STUDYING SOCIO-ECONOMIC CONDITIONS

- Time period 2014-2016.
- 300 households

## GOMATI DISTRICT

- District formed in 2012
- 32% of the land is cultivable
- Literacy rate 83%
- All 6 villages are Tribal dominant village



## DHALAI DISTRICT

- Socio-economically backward district
- Shifting cultivation widely practiced
- Literacy rate 74%
- All 6 villages are tribal dominant

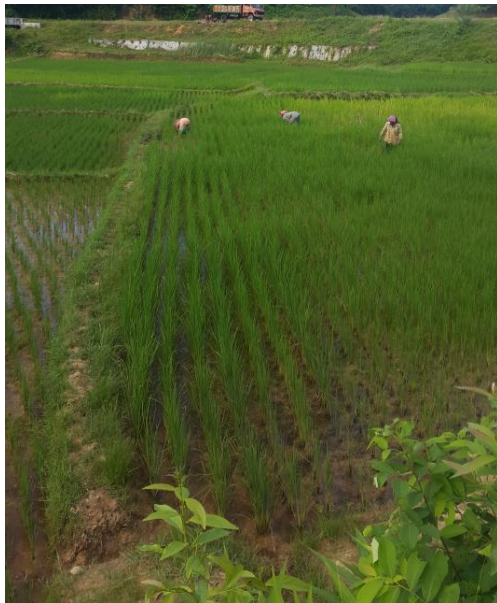
## DATA COLLECTION

Questionnaire Survey, Participatory appraisal, Focused group discussion



# IFR HOUSEHOLD OCCUPATION

- **AGRICULTURE**
- Dependency on Agriculture 60% of households in Gomati
- Shifting cultivation in Dhalai is over 50%



- **RUBBER PLANTATION** popular choice on IFR
- 20% households completely dependent on it.

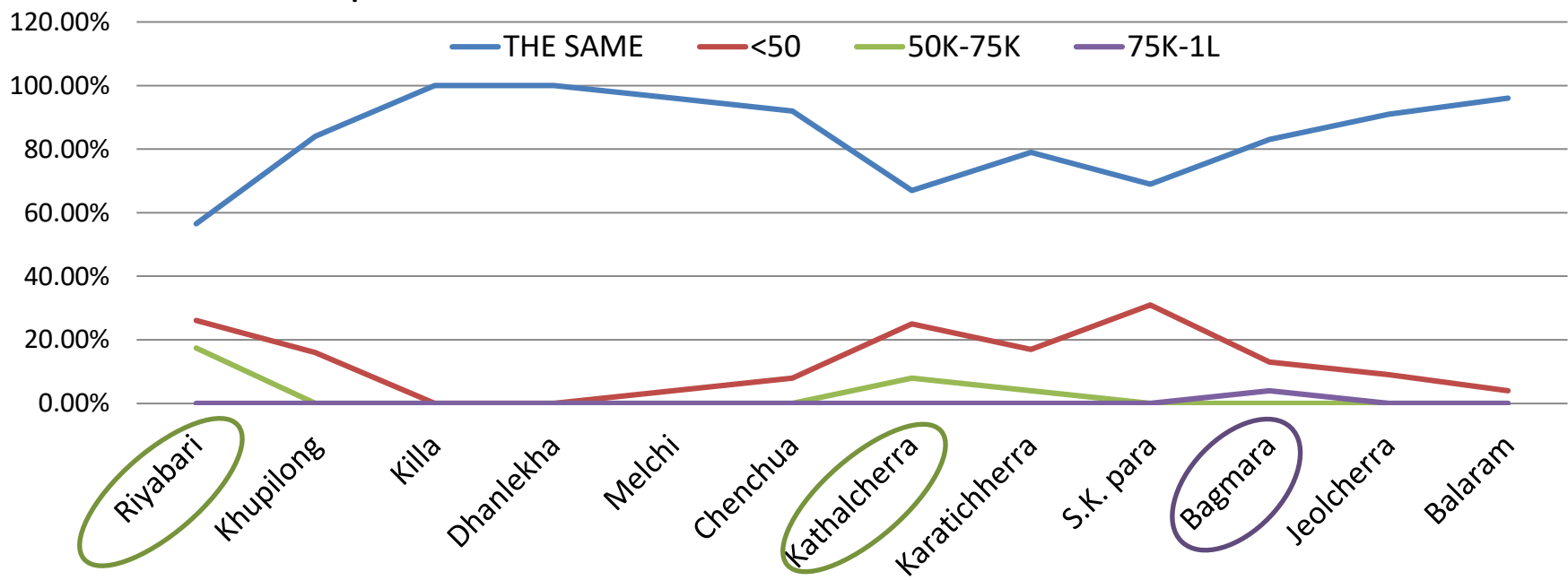


- **AGROFORESTRY/ HORTICULTURE** has shown an upward trend.
- Assistance scheme of the Govt. department, JICA project and IGDC.



# IMPACT ON HOUSEHOLD INCOME AFTER FRA

- No significant change in income for 60% of the households in all villages
- Increase not observed in income because
  - land given is not under cultivation
  - the new plantations have not started yielding crop
  - Engaged in traditional cultivation (shifting cultivation)
- Increase of Rs 50,000-100,000 p.a. (USD 700-1500) is observed due to manly mature rubber plantation



# METHODOLOGY FOR DEVELOPMENT OF SOCIO-ECONOMIC FRAMEWORK

## Selection of Socio-economic parameters and indicators

### Types of Indicators

Descriptive Indicators

Indicators for livelihood improvement

Indicators for socio-economic development

Development of PARAMETERS AND INDICATORS

Finalizing questionnaire: through FGD, interviews, pilot testing

Scoring of households in each village ( 4 point scale)

Principle Component Analysis

Composite Score for Each village and Classification



Scheme of classification	Class status
$>\mu+sd$	Very Good
$\mu$ to $(\mu+sd)$	Good
$(\mu-sd)$ to $\mu$	Fair
$<\mu-sd$	Bad

# SOCIO-ECONOMIC PARAMETERS & INDICATORS

Parameter: 8 Indicators: 30

NO.	SOCIO ECONOMIC PARAMETER	INDICATOR DESCRIPTION
P1.	Size of the ILR Household	Average number of people residing/sleeping in the household per village
P2.	Stability of household structure	Type of a household structure and presence of basic amenities.
P3	Land holding under FRA	Size of IFR as vested under FRA
P4	Annual earning of the IFR holding household	Household income per annum (based on market price of the forest produce or salary/wages in case of employment)
P5	Benefit schemes of various government line departments or other projects availed by the IFR holding household.	-The number of benefit schemes available - Benefit scheme successfully implemented by the IFR households in the village
P6	Diversification of Income generating sources	a. Number of households involved in occupation based on IFR given under FRA: Includes agroforestry, horticulture, bamboo and rubber plantations b. Number of households involved in agriculture based occupation: includes plough based cultivation and shifting cultivation. c. Number of households involved in other wage based occupation: includes employment through MGNREGA and other private employment sources
P7	Literacy Rate	literacy rate of all the households in the village
P8	Involvement in Social organisation	Members of the households participate actively in one or more of village organisations for forest management and governance (Panchayat/village council, Van Suraksha Samiti, Joint forest Management Committee, Self Help groups etc.) and NGOs

# ASSESSMENT OF SOCIO-ECONOMIC CONDITIONS

Name of Village		P1 (0.862)	P2 (0.885)	P3 (0.526)	P4 (0.909)	P5 (0.448)	P6.a. (0.227)	P6.b. (0.707)	P6.c. (0.838)	P7 (- 0.777)	P8 (0.216)	Composite Score (X)	Socio- economic condition
Khupilong	G	2.586	1.77	1.052	1.818	0.896	0.454	2.121	0.838	-2.331	0.432	9.636	good
Killa	G	2.586	0.885	1.052	1.818	0.448	0.227	1.414	0.838	-1.554	0	7.714	good
Riyabari	G	1.724	0.885	0.526	0.909	0	0.227	0.707	0	-2.331	0	2.647	bad
Melchi	G	0.862	0.885	0.526	0.909	0.896	0.454	0.707	0	-2.331	0	2.908	bad
Chenchua	G	1.724	0.885	0.526	0.909	0.448	0.227	1.414	0.838	-2.331	0.216	4.856	Fair
Dhanlekha	G	1.724	0.885	0.526	0.909	0.448	0.227	1.414	0	-2.331	0.216	4.018	Fair
Bagmara	D	2.586	1.77	0.526	1.818	0.448	0.454	2.828	1.676	-1.554	0.216	10.768	very good
Balaram	D	1.724	0.885	0.526	0.909	0.896	0.227	1.414	0.838	-2.331	0	5.088	Fair
Jeolcherra	D	2.586	1.77	1.578	1.818	0.896	0.227	1.414	1.676	-0.777	0	11.188	very good
SK para	D	2.586	1.77	0.526	1.818	0.896	0.908	2.121	0.838	-0.777	0	10.686	very good
Karaticherra	D	2.586	0.885	0.526	0.909	0.448	0.908	2.121	0.838	-2.331	0.216	7.106	Fair
Kathalcherra	D	2.586	1.77	0.526	1.818	0.896	0.227	1.414	0.838	-1.554	0.216	8.737	good

# ASSESSMENT OF SOCIO-ECONOMIC CONDITIONS

Village Name	Assessment of Socio Economic condition	Reason
1. Bagmara(D) 2. Jeolcherra(D) 3. SK para(D)	Very Good	<ul style="list-style-type: none"> <li>• <u>Higher income</u>: mainly from agriculture and/or Rubber plantations</li> <li>• <u>Larger land holdings</u> under IFR</li> <li>• <u>Successful implementation</u> of benefit schemes</li> </ul>
1. Khupilong(G) 2. Killa (G) 3. Kathalcherra(D)	Good	<ul style="list-style-type: none"> <li>• <u>Lower earning</u> from IFR land</li> <li>• <u>Minimum involvement</u> in Social organisation</li> <li>• <u>Fewer households</u> availing benefit schemes</li> </ul>
1. Chenchua (G) 2. Dhanlekha (G) 3. Balaram (D) 4. Karaticherra(D)	Fair	<ul style="list-style-type: none"> <li>• <u>Low household income</u></li> <li>• No involvement in Social organisation</li> </ul>
1. Riyabari (G) 2. Melchi (G)	Bad	No Benefits schemes given, No involvement in social organisation and low on occupation and income





# **LAND USE CHANGE & ASSESSMENT OF VEGETATION ON IFR**

# FOREST IN TRIPURA AFTER FRA

- Two major forest types, Evergreen forest and moist deciduous forest(mixed deciduous forest and Sal-dominant deciduous forest) interspersed with bamboo and cane forest.
- The rich forest cover has decreased by 164km<sup>2</sup> due to the shifting cultivation, rubber plantation and development activity. (FSI, 2017)
- This land use change can be seen through satellite Images (2006-2015):
  - a decrease of 15.7% in evergreen forest and 34.5% decrease in forest plantation
  - agriculture cropland & plantation increased by 27%
  - Shifting cultivation increased by 40%

Aim of FRA was to recognize the existing land rights . However due to hurried implementation with no verification a lot of forest plantations and forest areas were vested as IFR, resulting in loss of forest cover.

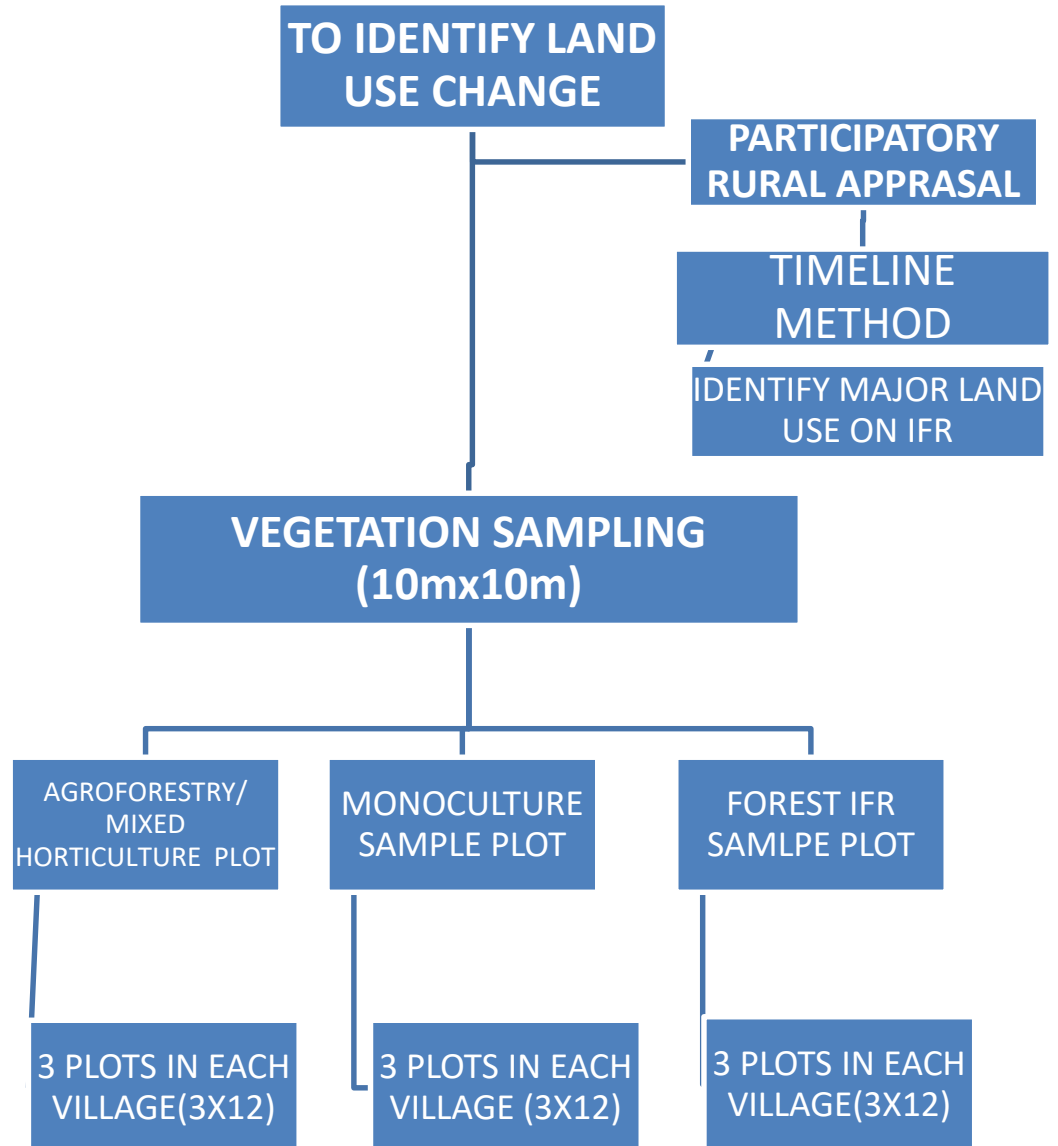
# METHODOLOGY FOR ASSESSMENT OF IFR

- Time period 2015-2016.
- **108 Vegetation sample plots**



## PARAMETERS STUDIED

1. BASAL AREA ( $\text{m}^2/\text{ha}$ )
2. BIOMASS PRODUCTION (tones/ha)
3. PLANT SPECIES DIVERSITY (Shannon Weiner Index)
4. TREE DENSITY (Trees/ Ha)





# IDENTIFIED LAND USE ON IFR



1. RUBBER PLANTATION



2A.AGROFORESTRY PLANTATION



2B. HORTICULTURE PLANTATION

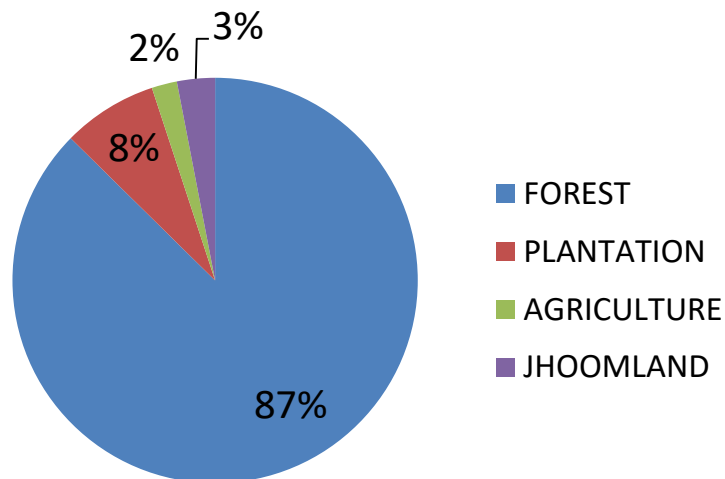


3. NATURAL FOREST

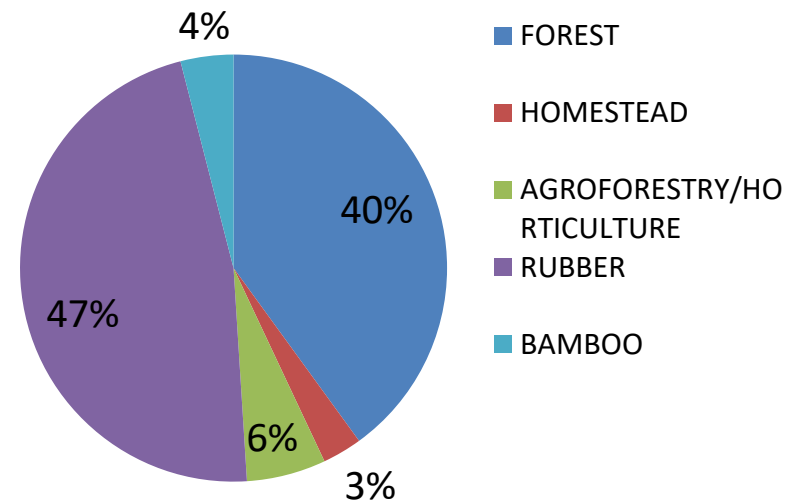
# CHANGE IN LAND USE -GOMATI

- Before implementation 87% IFR was under forest cover
- 47 % Forest area converted to other land use
- Rubber plantations on IFR rose to 47%
- Horticulture/agroforestry plantation 6% IFR

**A. GOMATI- IFR LAND USE BEFORE FRA IMPLEMENTATION**



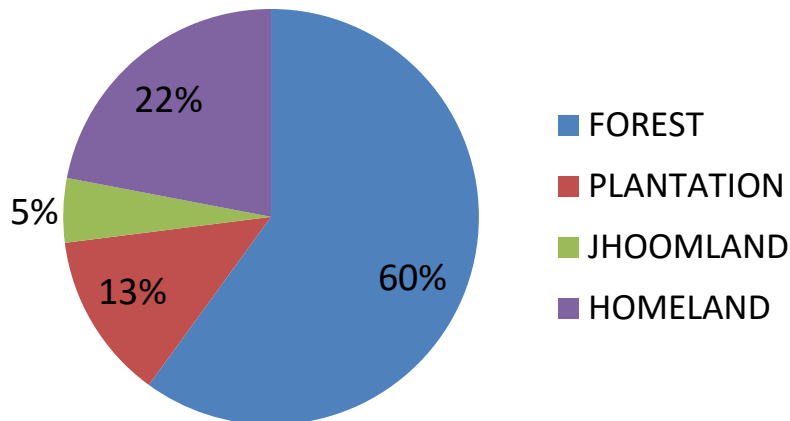
**B. GOMATI-LAND USE CHANGE SINCE FRA IMPLEMENTATION**



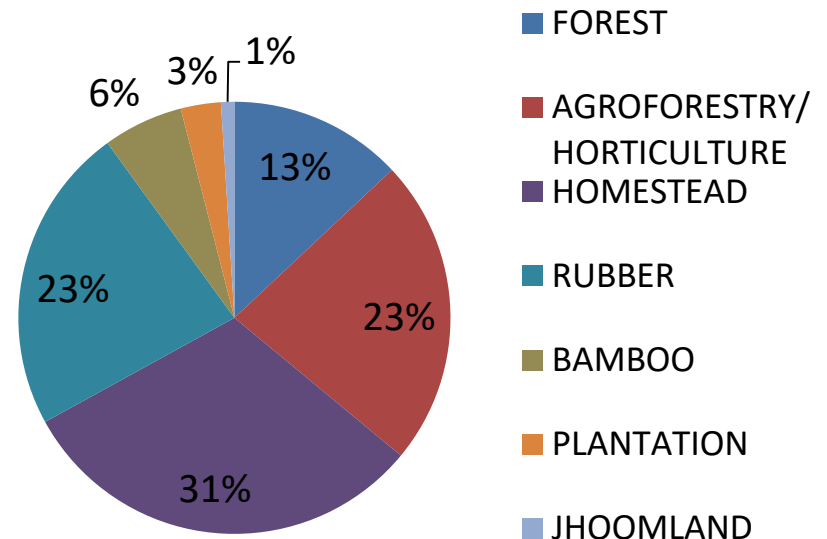
# CHANGE IN LAND USE-DHALAI

- Before implementation of FRA 60% of IFR was under forest cover
- After FRA forest reduced to 13%
- After FRA Maximum land use is under homesteads used for habitation
- Rubber plantations and agroforestry/horticulture plantations are on 23% each of the IFR.

**A. DHALAI: IFR LAND USE BEFORE FRA IMPLEMENTATION**



**B. DHALAI: LAND USE CHANGE SINCE FRA IMPLEMENTATION**





# IFR VEGETATION INDEX

VILLAGE		BA	Score	BP	Score	PSDI	Score	TD	Score	Composi te Score (Y)	Vegetation condition
Khupilong	G	7.67	1	102.37	1	1.45	1	1056	0	3	Bad
Killa	G	6.35	1	92.09	1	1.32	0	1489	2	4	Bad
Riyabari	G	16.42	1	157.69	1	1.79	3	1344	2	7	Good
Melchi	G	14.85	1	147.47	1	1.69	3	1411	2	7	Good
Chenchua	G	14.74	1	146.76	1	1.61	2	1444	2	6	fair
Dhanlekha	G	34.95	2	278.55	2	1.51	2	1333	2	8	very good
Bagmara	D	30.97	2	252.57	2	1.24	2	1111	1	7	good
Balaram	D	29.65	2	243.96	2	1.33	1	1911	3	8	very good
Jeolcherra	D	86.24	3	612.97	3	1.57	2	1256	1	9	very good
S.K. Para	D	52.50	3	392.97	3	1.32	0	1111	1	7	good
Karaticherra	D	6.21	1	91.16	1	1.60	2	1078	1	5	Fair
Kathalcherra	D	3.93	1	76.26	1	1.56	2	1111	1	5	Fair

# ASSESSMENT OF VEGETATION CONDITIONS ON IFR

VILLAGE NAME	ASSESSMENT OF VEGETATION	REASON
1. Dhalekha (D) 2. Balaram(D) 3. Jeolcherra (D)	Very Good	<ul style="list-style-type: none"> <li>• High Scores on Diversity Index.</li> <li>• Higher Tree Density</li> <li>• Mixed horticulture Plantation with bamboo</li> <li>• <b>Rich forest cover still present on forest IFR</b></li> </ul>
1. Riyabari (G) 2. Melchi (G) 3. Bagmara (D) 4. S.K. Para (D)	Good	<ul style="list-style-type: none"> <li>• High scores Diversity Index</li> <li>• Large number of mature rubber plantations</li> <li>• Few IFR under forest cover</li> </ul>
1. Chenchua (G) 2. Kathalcherra (D) 3.Karaticherra (D)	Fair	<ul style="list-style-type: none"> <li>• Medium Diversity index</li> <li>• Newer Mixed plantation with rubber in Gomati village</li> <li>• Areas under forest cover degraded</li> </ul>
1. Khupilong (G) 2. Killa (G)	Bad	<ul style="list-style-type: none"> <li>• Lower Scores on all parameters.</li> <li>• A few , horticulture and agroforestry plantations</li> <li>• Areas under forest cover are degraded.</li> </ul>



# **Relationship between the Socio Economic conditions index and vegetation index**

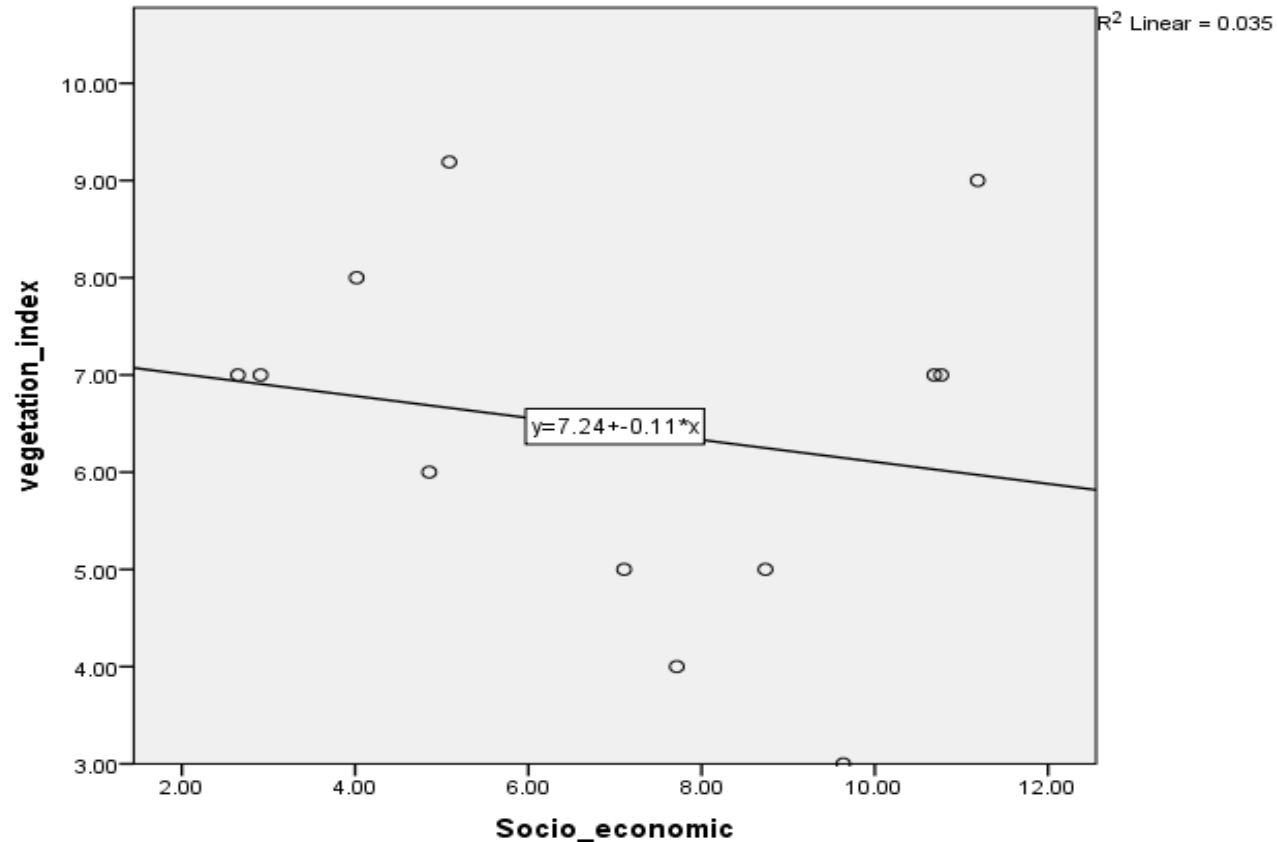
# LINEAR REGRESSION ANALYSIS

Relationship between Dependent Variable “Vegetation Index (Y) and Independent Variable “Socio-economic Index” (X)

$$Y = 7.24 + (-11) X$$

(4.971)\* (-0.59).....t value for the statistic \* Significant at  $p=0.05$

Name of Village	(X)	(Y)
Khupilong	9.636	3
Killa	7.714	4
Riyabari	2.647	7
Melchi	2.908	7
Chenchua	4.856	6
Dhanlekha	4.018	8
Bagmara	10.768	7
Balaram	5.088	8
Jeolcherra	11.188	9
SK para	10.686	7
Karaticherra	7.106	5
Kathalcherra	8.737	5



# LINEAR REGRESSION ANALYSIS

- The relationship, a **weak negative correlation, ( $r=-0.186$ )**, existed between the socio-economic conditions of households (X) and vegetation index (Y) of the IFR in the 12 villages.
- **INFERENCE : As socio-economic conditions improve there is a small likelihood of compromising the vegetation cover.**
- But only 3.5% ( $R^2$ ) of variation in vegetation condition can be accounted for by the socio-economic parameters
- Indicates there are other related parameters (social, institutional, cultural, ecological) that can affect the vegetation condition on IFR.

**CONCLUSION:** FRA implementation is in the **“gestation period”** (Springate-Bagkinski & Blaikie, 2007) and requires interventions not limited to socio-economic improvement.

**Requires:** institutional development at the village level, explore avenues for collaboration with NGOs, sustainable land development and clarity on access and entitlements to successfully alleviate livelihood and improve environment conditions.



# **CONCLUSION & RECOMMENDATION**



# CONCLUSION

## FRA IMPLEMENTATION

- Focus only on Individual forest rights
- Lack of enterprise development.
- Lack of post distribution monitoring

## SOCIO ECONOMIC CONDITIONS

- Small land holding not sufficient to support households
- Low awareness and Lack of participation in social organization.
- High literacy rate but lack of opportunities for skill development & capacity building

## ECOLOGICAL CONDITIONS

- Only a few takers for alternate sustainable practices, shifting cultivation widely practiced
- No incentive for long term land development- high rate of switching between schemes.

# RECOMMENDATIONS

- **Increase focus on development of community based governance:** Through implementation of community forest rights
- The state government to aid in **the capacity building and knowledge enhancement** of the tribals regarding :
  - the provisions of the Act,
  - their responsibility regarding forest governance and management
  - And towards alternate sustainable livelihood options
- **Enterprise development:** Explore sustainable commercial use of, Bamboo sp., horticulture crops (like pineapple) and medicinal plants.
- **Completion of the recognition process and gather base-line data** and thereafter increase focus on **more inclusive and holistic monitoring** that includes post implementation institutional changes, land use change, economic and social development, cultural changes etc.



# THANK YOU

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