World Forum on
Urban Forests
Mantova 2018

PS_3.1_001_Changing people

Status of fringe forest management in rainfed areas of India and socio-economic assessment of fringe villages for Rural-Urban areas

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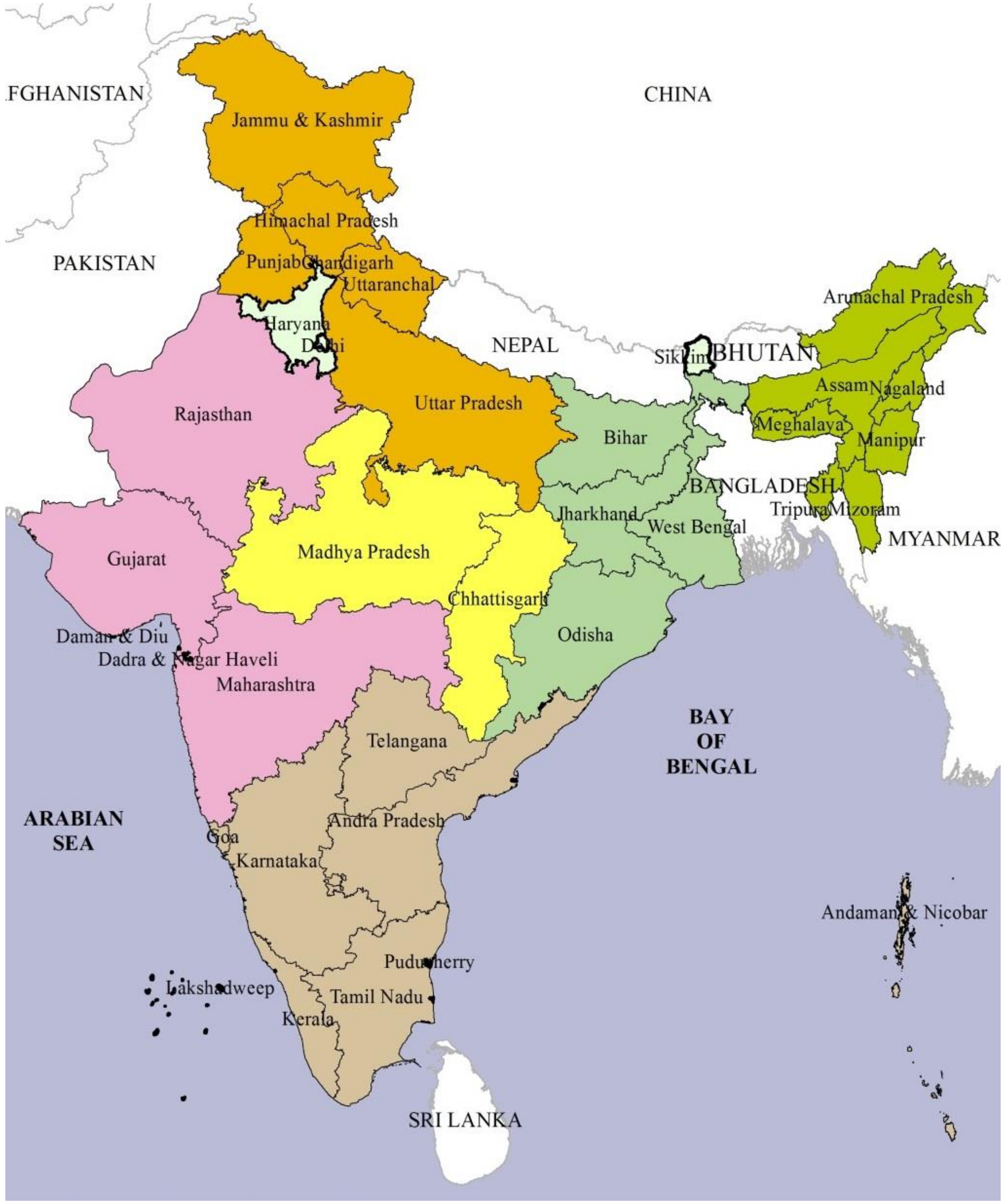
INDIAN COUNCIL OF FORESTRY RESEARCH AND EDUCATION

Introduction

This presentation is about outcome of a project title “**Forest Resource Dependence and Ecological Assessment of Forest Fringes in Rainfed Districts of India”** completed at ICFRE (Indian Council of Forestry Research & Education, Govt. of India)

Study Area

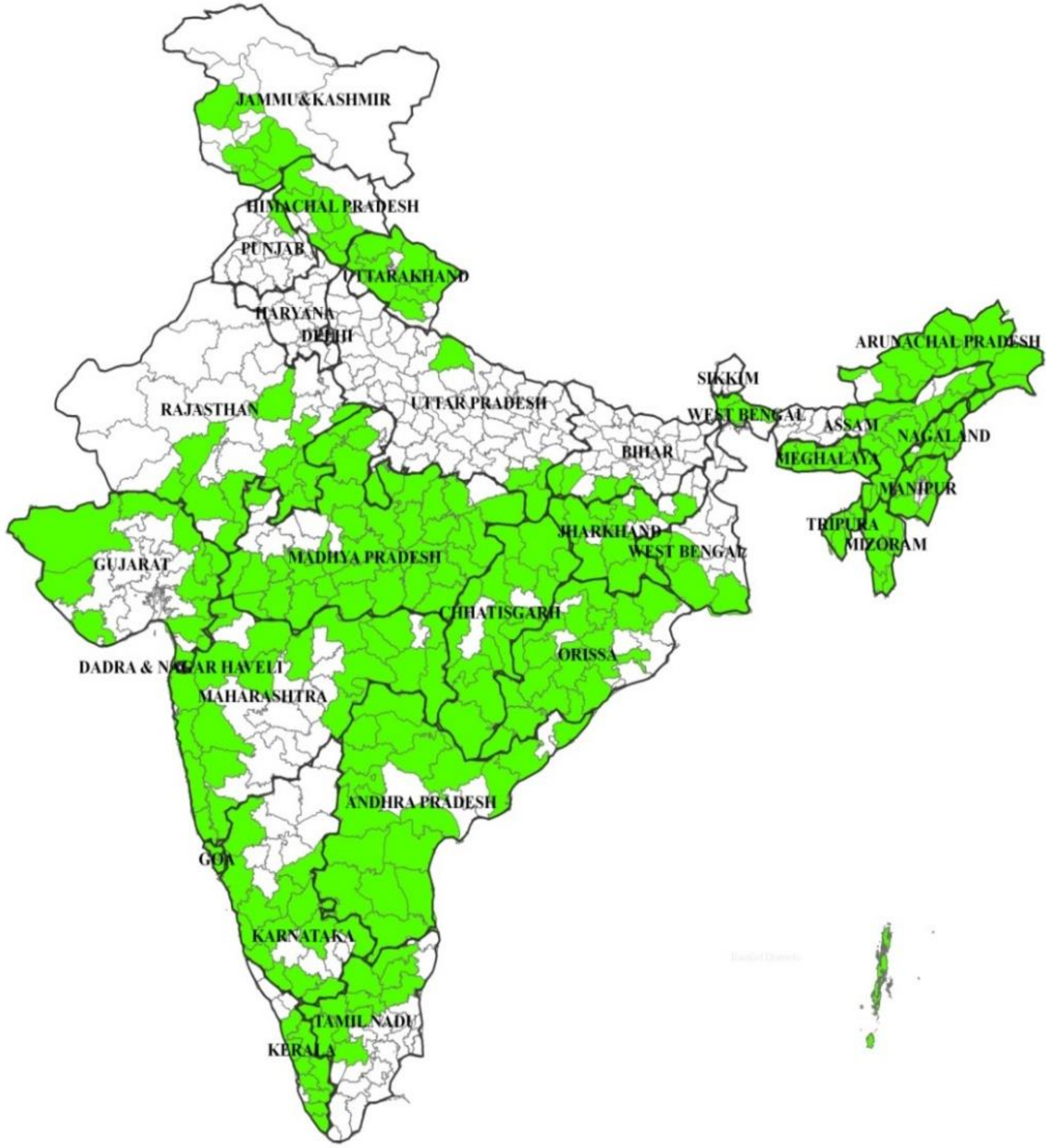

FGHANISTAN
CHINA
Jammu & Kashmir
Himachal Pradesh
PAKISTAN
Punjab
Chandigarh
Uttaranchal
Haryana
Delhi
NEPAL
Sikkim
BHUTAN
Arunachal Pradesh
Assam
Nagaland
Meghalaya
Manipur
Rajasthan
Uttar Pradesh
Bihar
BANGLADESH
Tripura
Mizoram
MYANMAR
Jharkhand
West Bengal
Gujarat
Madhya Pradesh
Chhattisgarh
Odisha
Daman & Diu
Dadra & Nagar Haveli
Maharashtra
Telangana
BAY
OF
BENGAL
ARABIAN
SEA
Goa
Andra Pradesh
Karnataka
Andaman & Nicobar
Puducherry
Lakshadweep
Tamil Nadu
Kerala
SRI LANKA

India

Out of 597 Districts, only 275 Rainfed Districts chosen for study

Provinces (States) : 27
Union Territory : 01
Administrative Districts : 275

DISTRIBUTION OF RAINFED STUDY DISTRICTS


JAMMU&KASHMIR
HIMACHAL PRADESH
PUNJAB
UTTARAKHAND
HARYANA
DELHI
RAJASTHAN
UTTAR PRADESH
SIKKIM
WEST BENGAL
ARUNACHAL PRADESH
ASSAM
NAGALAND
MEGHALAYA
BIHAR
MANIPUR
JHARKHAND
WEST BENGAL
TRIPURA
MIZORAM
GUJARAT
MADHYA PRADESH
CHHATISGARH
ORISSA
DADRA & NAGAR HAVELI
MAHARASHTRA
ANDHRA PRADESH
GOA
KARNATAKA
TAMIL NADU
KERALA

Study area shown in green

Components of Study

- **Identification of *forest fringe*** villages of India
- **Socio-economic study of *forest fringe* villages for Rural-Urban Areas**

What is **Fringe Forest**?
“1 km distance inside the forest from outer periphery of the forest was identified as fringe forest.”

What is **Forest Fringe Villages**?
“Villages lying within 1 km distance along the outer periphery of the forest boundary.”

What is **Rainfed Area**?
“Those geographic areas where crop production is exclusively dependent on rainfall .”

About

- The fringe forests are degrading greatly, this is so because the people living in these fringe villages belong to economically weaker section and lack basic amenities like roads, transportation etc.
- The lack of alternative livelihood opportunities leads to the heavy dependencies on forest resources and results in overexploitation of forest wealth. This leads to the shrinkage of forests and natural resources and extinction of many species to finally result in environmental degradation.
- India ranks first among the rainfed agricultural countries of the world in terms of both extent and value of produce. Rainfed regions account for 68% of the total net sown area in the country and are home to two-thirds of livestock and 40 percent of human population. Although the ecological, social and economic importance of the fringe forests is widely recognized yet, the data especially on socioeconomic aspects of forest fringe villages and communities living there is meagre.
- In-depth understanding of the fringe forest areas and the communities depending on these forests will help decision makers and managers of forests to undertake meaningful interventions. This study will provide an inventory for creating the future scenario and determination of the ecology of the area.

Information Generated by this Study

- Extent and distribution of forestlands
- Number and names of forest fringe villages
- Forest cover density in fringe forests
- Forest types in fringe forests
- Areas supporting open, moderately dense and dense forests
- Tree density and height and girth of trees
- Regeneration status of the major species
- Importance Value Index of the forest species
- Community structure and species diversity of plants

Socio-economic status of forest fringe communities at Village level and at Household level including

- Infrastructural facilities
- Road connectivity
- Drinking water availability
- Electricity connection
- Distance between fringe village and nearest town
- Distance between household and forest Ownership of dwellings
- Religion diversity
- Community structure
- Age –group structure
- Literacy & Educational Status
- Occupation status

- Marital status
- Gender ratio
- Income
- Social participation
- Household Accessories
- Agricultural implements
- Land Holdings
- Crop profile
- Livestock composition
- Grazing pattern
- Fodder- Source and species
- Fuelwood- Source and species
- Energy consumption

Methodology

Steps involved in the Study

- Design of sampling for survey by **FRI** with assistance from **Forest Survey of India**
- Developing field forms and questionnaire for survey by FRI
- Field survey by institutes of ICFRE across the country
- GIS implementation work by FRI
- National Data portal development for data entry and Compilation by FRI
- Compilation of findings and synthesis of reports by FRI

Selection of sample villages for survey

Number of sample villages for survey were calculated by adopting following formula :

$$n = \left(\frac{CV(Y) * t}{\epsilon}\right)^2$$

where CV = Coefficient of variation
Y = Character under study
t = Confidence Interval
ε = Margin of Error

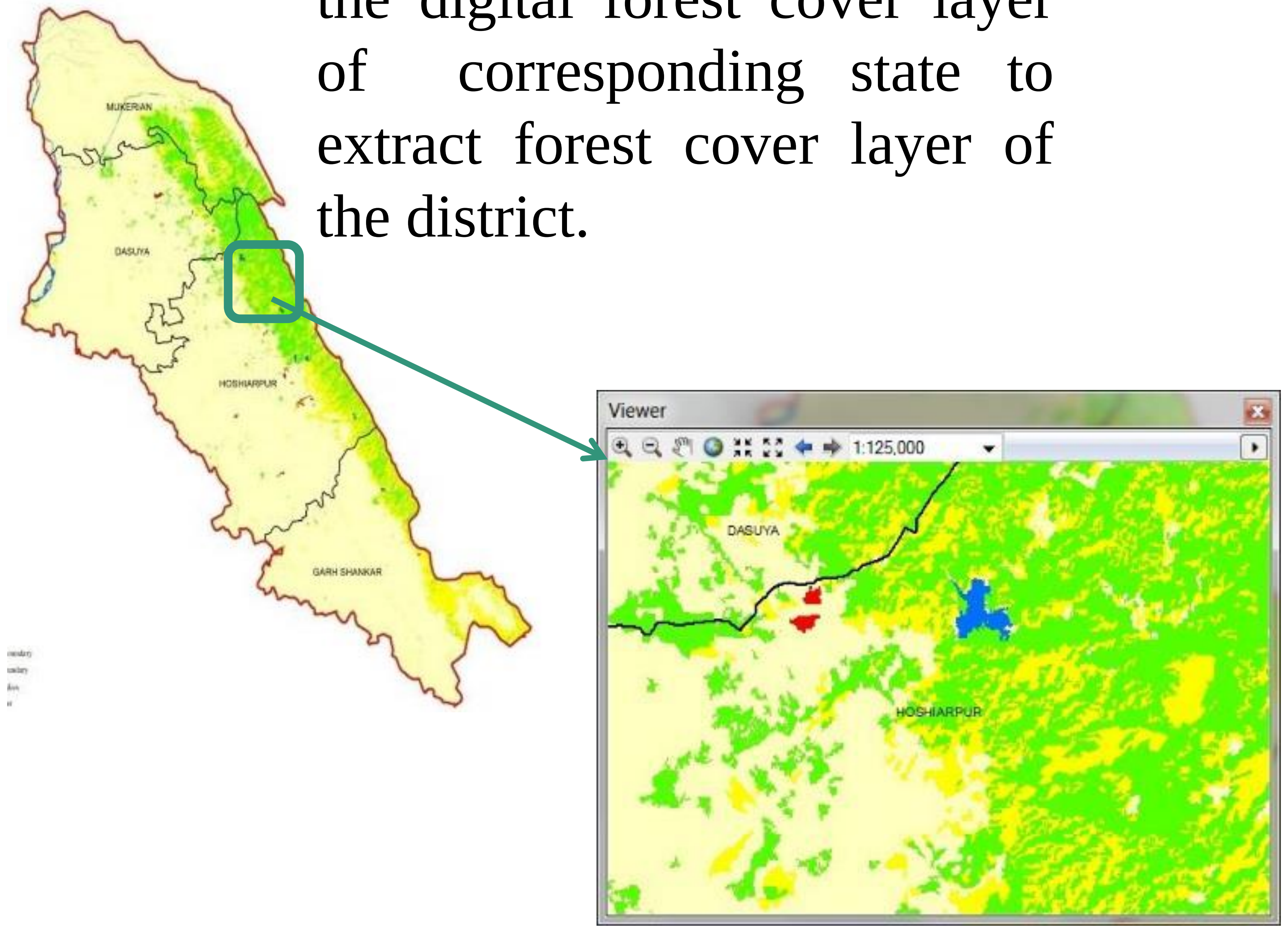
For calculating the sample size of the villages, mean and standard deviation was provided by FSI, Dehradun for calculating the CV.

Selection of sample for Socio Economic survey

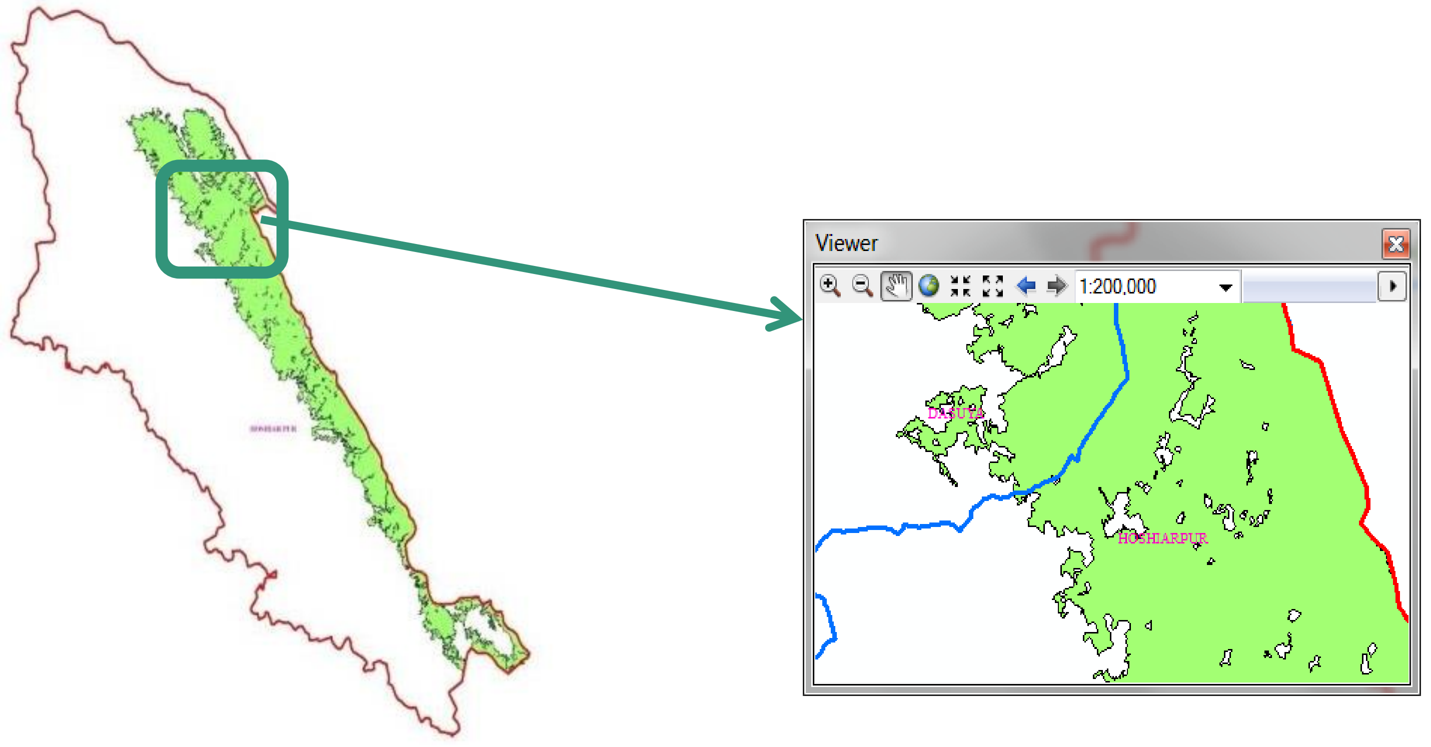
- The first sampling unit i.e. villages within each districts was stratified based on the population of the villages available in the population census (NSSO).
- Stratified random sampling design was adapted for the survey.
- The first stage sampling units were the villages and the second stage sampling units were the households.
- The households were categorized in three groups based on their economic status i.e. ‘Affluent’, ‘Less-affluent’ and ‘Others’. Thereafter 12 households from each village were selected from all the groups.

GIS mapping Work of Study Area

The shape file of the district boundary was overlaid on the digital forest cover layer of corresponding state to extract forest cover layer of the district.


MUKERIAN
DASUYA
HOSHIARPUR
GARH SHANKAR
Viewer
1:125,000
DASUYA
HOSHIARPUR

- ❑ The raster layer of forest cover was converted to vector format.
- ❑ All vector limits for forest categories were dissolved to generate shape files of forest cover only.


Viewer
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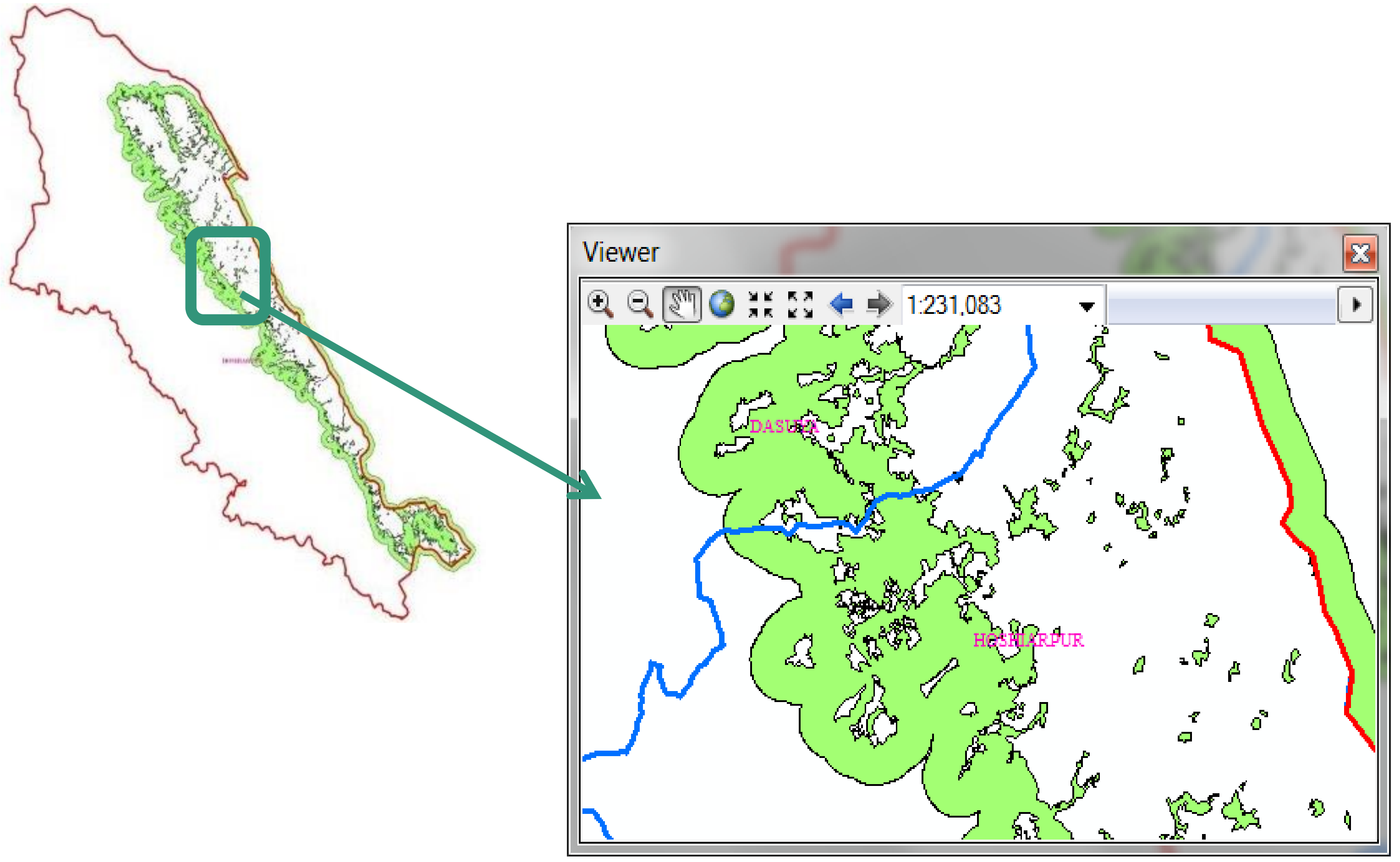
DASUYA
HOSHIARPUR

Then **1 km buffer** was generated on the forest boundary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HOSHIARPUR

Output of GIS Mapping was useful in

- Identification of forest fringe villages
- Identification of fringe forests
- Information on forest cover density and forest types of fringe forests
- All essential maps used in the report

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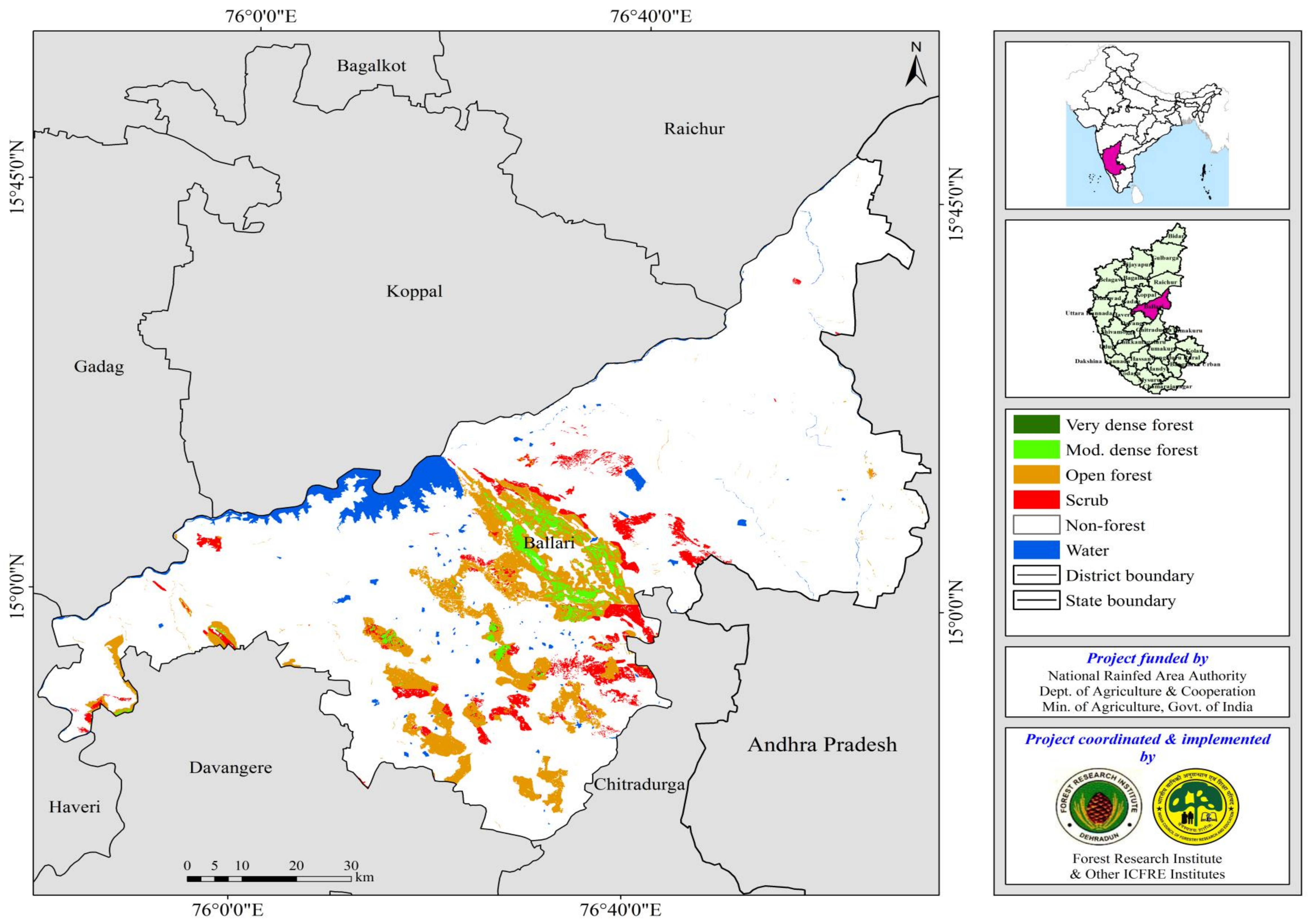
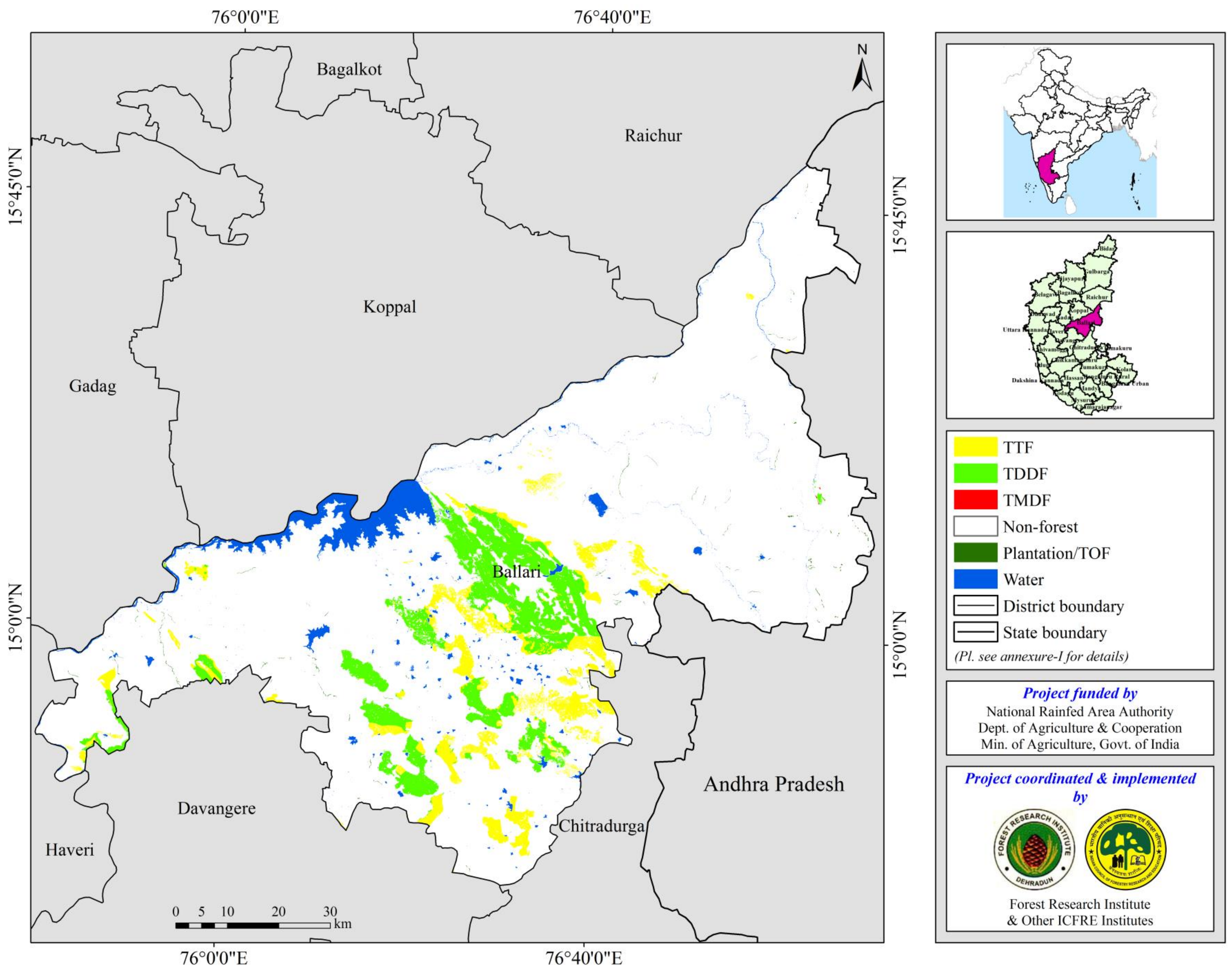
GIS Output: Maps Generation

Forest Cover Map



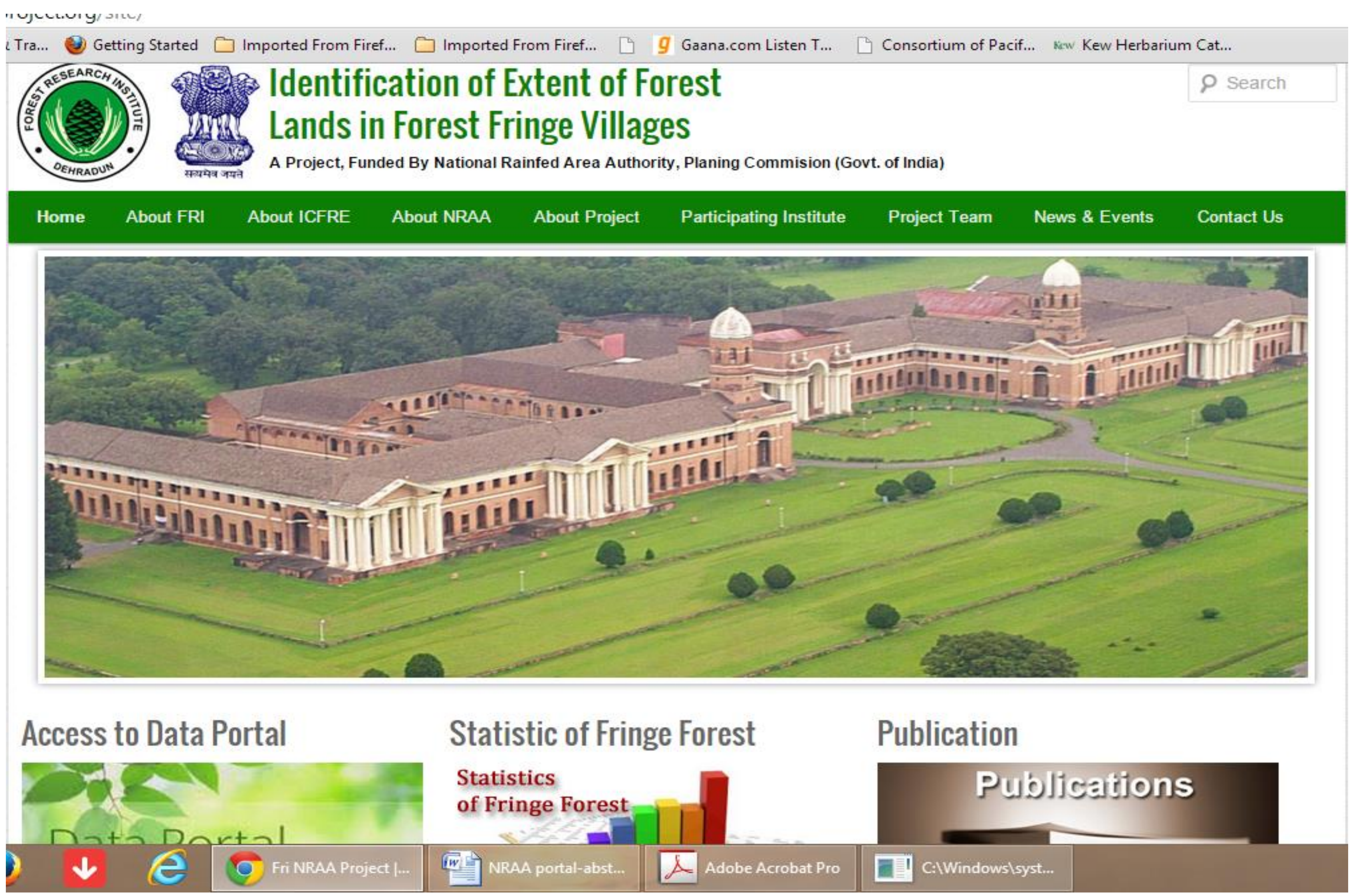
76°0'0"E
76°40'0"E
15°45'0"N
15°0'0"N
N
Bagalkot
Raichur
Koppal
Gadag
Ballari
Andhra Pradesh
Davangere
Haveri
Chitradurga
0 5 10 20 30 km
Very dense forest
Mod. dense forest
Open forest
Scrub
Non-forest
Water
District boundary
State boundary
Project funded by
National Rainfed Area Authority
Dept. of Agriculture & Cooperation
Min. of Agriculture, Govt. of India
Project coordinated & implemented by
Forest Research Institute
& Other ICFRE Institutes

Forest Type Map



76°0'0"E
76°40'0"E
15°45'0"N
15°0'0"N
N
Bagalkot
Raichur
Koppal
Gadag
Ballari
Andhra Pradesh
Davangere
Haveri
Chitradurga
0 5 10 20 30 km
TTF
TDDF
TMDF
Non-forest
Plantation/TOF
Water
District boundary
State boundary
(Pl. see annexure-I for details)
Project funded by
National Rainfed Area Authority
Dept. of Agriculture & Cooperation
Min. of Agriculture, Govt. of India
Project coordinated & implemented by
Forest Research Institute
& Other ICFRE Institutes

National Data Portal



Tra... Getting Started Imported From Firef... Imported From Firef... Gaana.com Listen T... Consortium of Pacif... Kew Herbarium Cat...

Search

Identification of Extent of Forest Lands in Forest Fringe Villages

A Project, Funded By National Rainfed Area Authority, Planing Commision (Govt. of India)

Home | About FRI | About ICFRE | About NRAA | About Project | Participating Institute | Project Team | News & Events | Contact Us

Access to Data Portal

Statistic of Fringe Forest

Publication

FOREST RESEARCH INSTITUTE DEHRADUN
सत्यमेव जयते
Data Portal
Statistics of Fringe Forest
Publications
Fri NRAA Project |...
NRAA portal-abst...
Adobe Acrobat Pro
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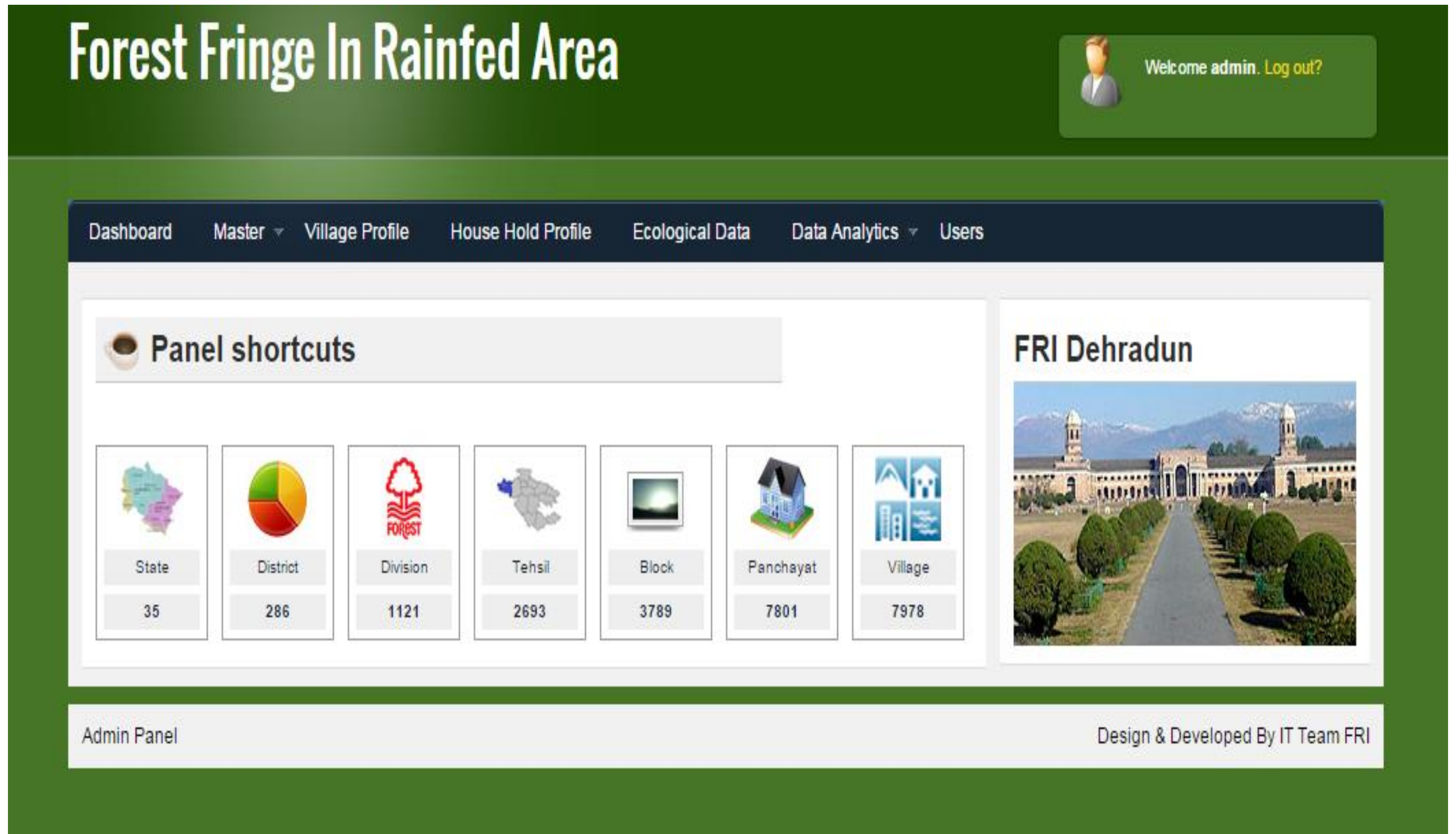


Forest Fringe In Rainfed Area

Welcome admin. Log out?

Dashboard | Master | Village Profile | House Hold Profile | Ecological Data | Data Analytics | Users

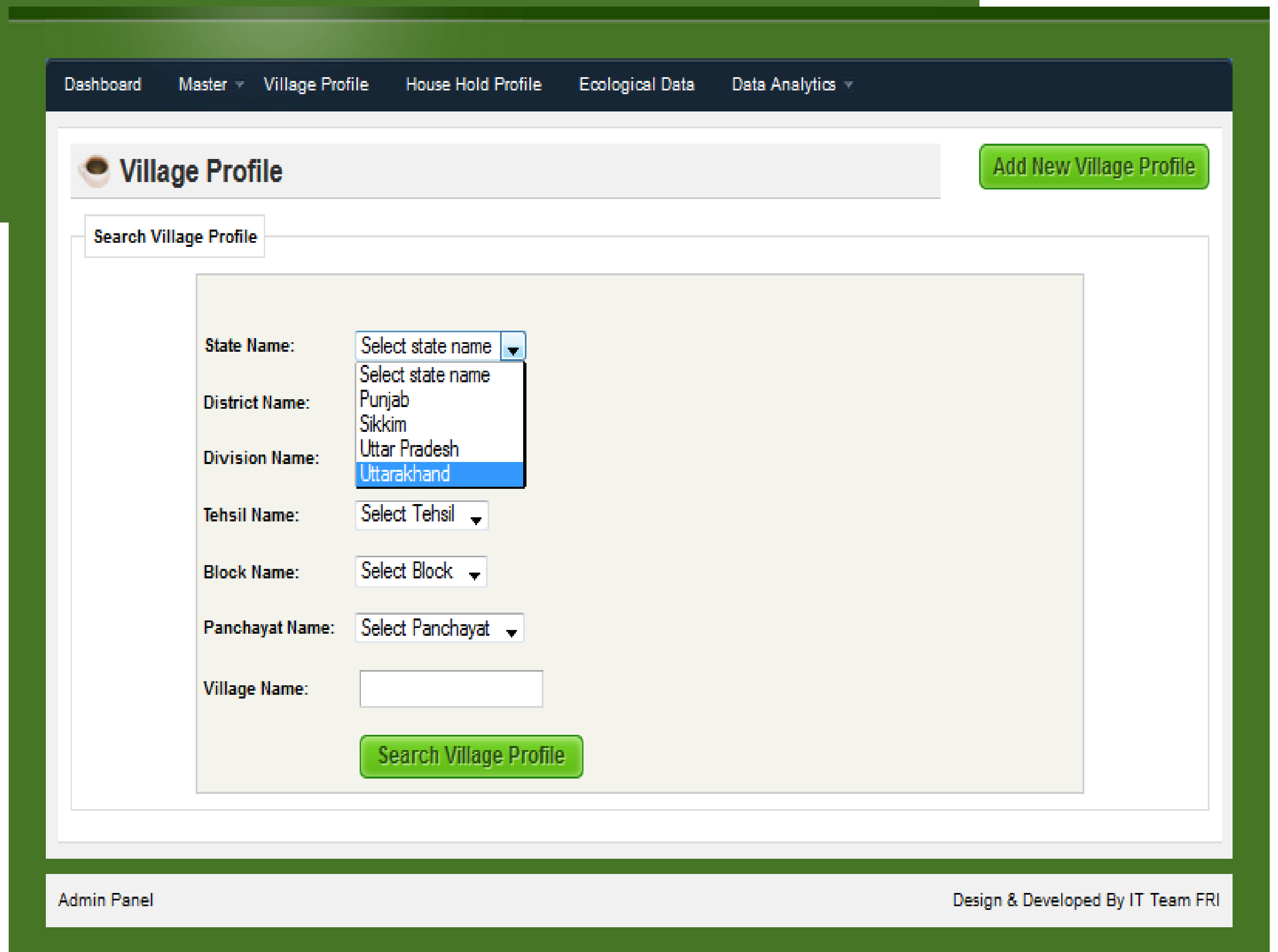
Panel shortcuts

State	District	Division	Tehsil	Block	Panchayat	Village
35	286	1121	2693	3789	7801	7978

FRI Dehradun

Admin Panel

Design & Developed By IT Team FRI



Dashboard | Master | Village Profile | House Hold Profile | Ecological Data | Data Analytics

Village Profile

Add New Village Profile

Search Village Profile

State Name: Select state name
- Select state name
- Punjab
- Sikkim
- Uttar Pradesh
- Uttarakhand

District Name:

Division Name:

Tehsil Name: Select Tehsil

Block Name: Select Block

Panchayat Name: Select Panchayat

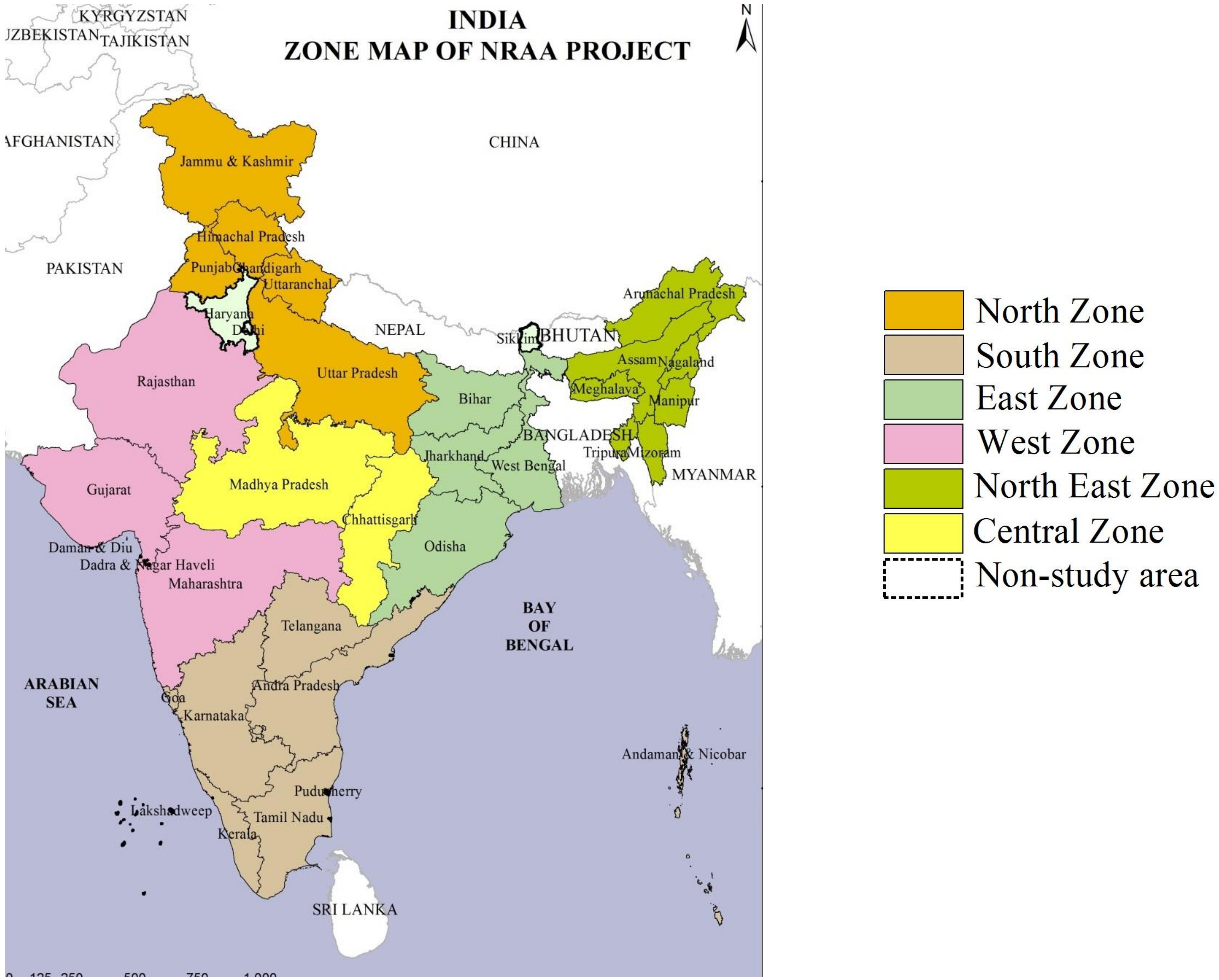
Village Name:

Search Village Profile

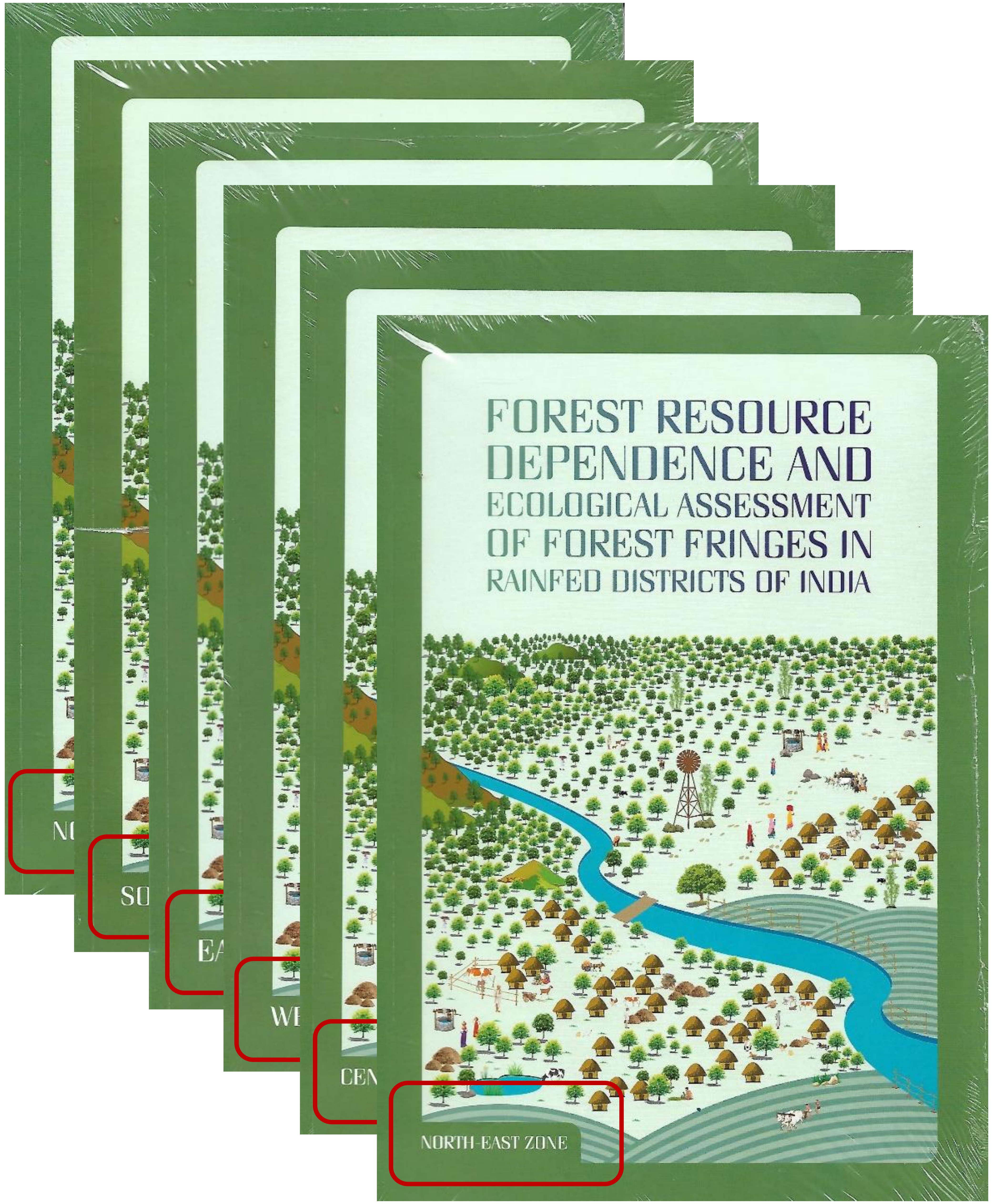
Admin Panel

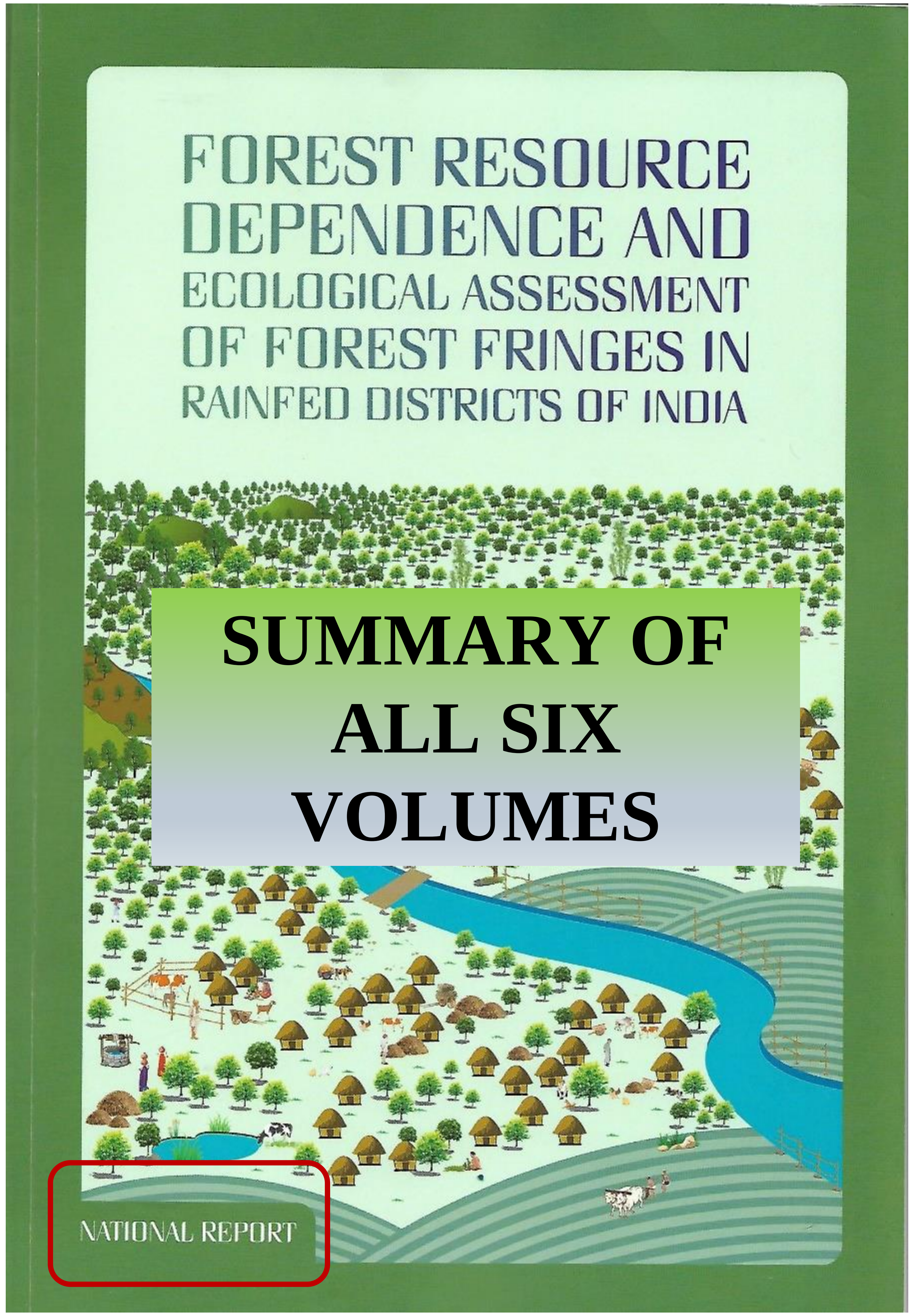
Design & Developed By IT Team FRI

Volumes of report: zone wise distribution


INDIA
ZONE MAP OF NRAA PROJECT
N
KYRGYZSTAN
UZBEKISTAN
TAJIKISTAN
AFGHANISTAN
CHINA
PAKISTAN
NEPAL
BHUTAN
BANGLADESH
MYANMAR
SRI LANKA
ARABIAN SEA
BAY OF BENGAL
Jammu & Kashmir
Himachal Pradesh
Punjab
Chandigarh
Uttaranchal
Haryana
Delhi
Rajasthan
Uttar Pradesh
Sikkim
Arunachal Pradesh
Assam
Nagaland
Meghalaya
Manipur
Tripura
Mizoram
Bihar
Jharkhand
West Bengal
Gujarat
Madhya Pradesh
Chhattisgarh
Odisha
Daman & Diu
Dadra & Nagar Haveli
Maharashtra
Telangana
Andra Pradesh
Goa
Karnataka
Puducherry
Tamil Nadu
Kerala
Lakshadweep
Andaman & Nicobar
0 125 250 500 750 1,000
🟧 North Zone
🟫 South Zone
🟩 East Zone
🟪 West Zone
🟩 North East Zone
🟨 Central Zone
⬚ Non-study area

Volumes of report: zone wise distribution


FOREST RESOURCE DEPENDENCE AND ECOLOGICAL ASSESSMENT OF FOREST FRINGES IN RAINFED DISTRICTS OF INDIA
NORTH-EAST ZONE


FOREST RESOURCE DEPENDENCE AND ECOLOGICAL ASSESSMENT OF FOREST FRINGES IN RAINFED DISTRICTS OF INDIA
NATIONAL REPORT

SUMMARY OF ALL SIX VOLUMES

Glimpse of field photographs

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Outcome of the Study on Socio economic assessment of Rural-Urban Fringe forest

- Forest fringe villages of rural-urban areas and its **socio economic status** have been identified through this study.
- **Dependency** of the forest fringe community upon forests, its extent and the kind of forest resources being exploited were identified.
- Findings will help in screening and prioritizing the project implementation areas for developmental projects for **forest fringe communities in rainfed districts.**
- Ample amount of data has been generated for **27 States and 1 UT of India** from which lot of information, idea and knowledge can be accumulated for forest managers and policy planners.
- This study will lead to plan better **urban forestry interventions and its Socio-economic impact** in India

Thank You