



Application of Geospatial Technology with Information Management System in Decentralized Planning - A case study of Odisha Forestry Sector Development Project - II

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Odisha Forestry Sector Development Society

- OFSDS is an autonomous Society established under the Administrative Control of Dept. Of FE&CC, Govt. of Odisha to implement SFM projects...

Name of Projects	Period	Status
Odisha Forestry Sector Development Project Phase-I, JICA Assisted	2006-07 to 2014-15	Completed
Ama Jangala Yojana- Flagship Project of Govt. of Odisha	2016-17 to 2021-22	Completed
Odisha Forestry Sector Development Project Phase-II	2017-18 to 2026-27	Ongoing
OFSDS-OMBADC Livelihood Project	2021-22 to 2025-26	Ongoing
Ama Jangala Yojana – Extension Project	2022-23 to 2024-25	Ongoing

Objectives of Projects ...

Twin Objectives...

- Forest Restoration through Sustainable Forest Management with community participation
- Promotion of Sustainable Livelihood of forest fringe dwellers through inter-sectoral convergence.

Coverage at a glance...(OFSDS)

35 DMUs, 26 Districts

6016 VSS + 10 EDC

1833 nos. of VSS cum IGA Facilitation Blds

Total Assigned Area 3.67 Lakhs Ha

No. of HH 5.68 lakhs

No. of SHGs, CIGs & PoPs 21,273

CBT 12,944 nos., People 4.09 lakhs, Themes 22



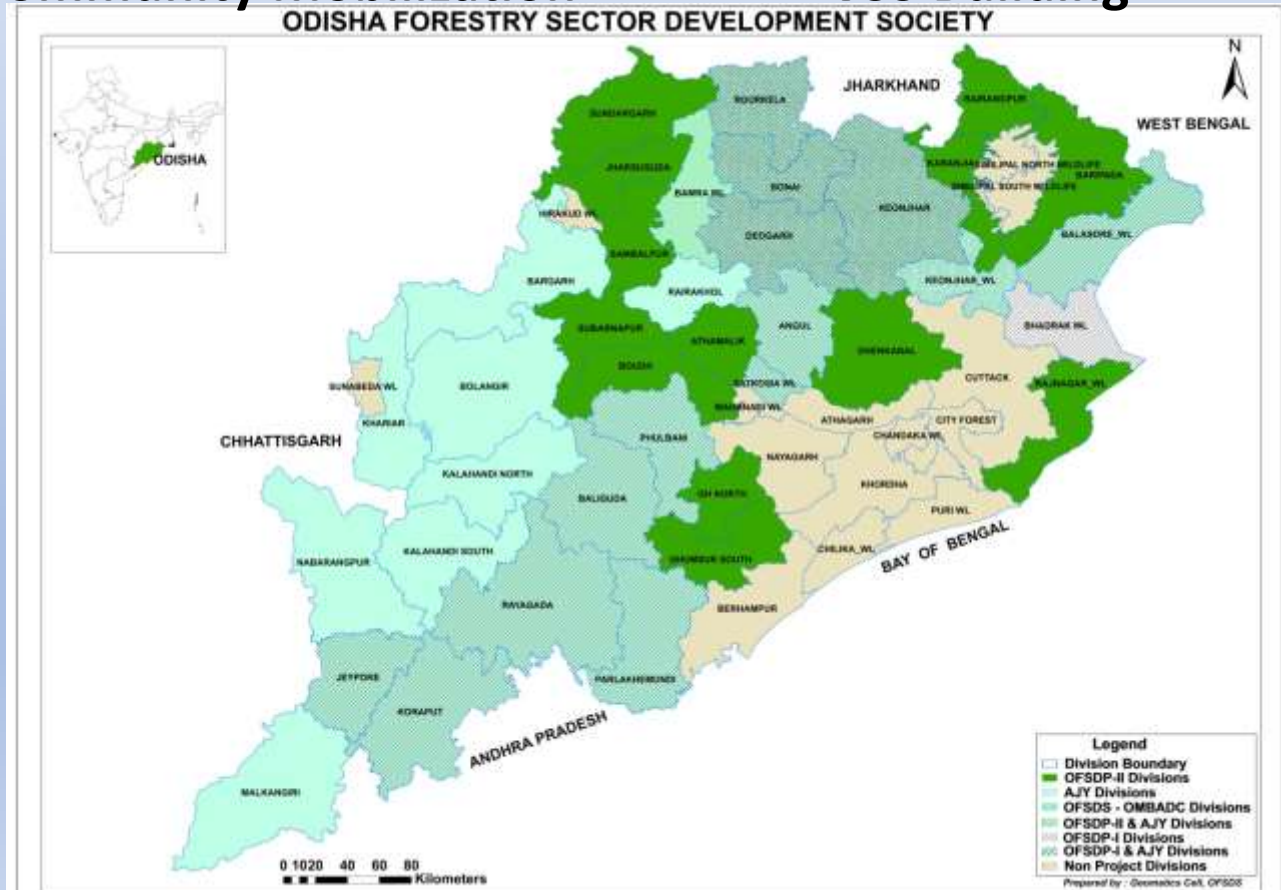
CBT on Sal Leaf Plate Making



Community Mobilization



VSS Building



Community Based SFM

Initiatives

Microplanning • 6362 no.

Treatment Area • 2.88 lakh Ha.

ANR • 2.81 lakh Ha.

AR • 7291 Ha.



Survey and Demarcation



SMC- LBCD



SMC- Staggered Trenches



SMC- LBCD



AR Plantation, AJY



AR Plantation, OFSDP II

Broad Themes of OFSDP II



**SUSTAINABLE
FOREST
MANAGEMENT
THROUGH
COMMUNITY
PARTICIPATION**

**LIVELIHOOD
IMPROVEMENT
THROUGH
INTERSECTORAL
CONVERGENCE**

**EXPERIMENTS
IN
BIODIVERSITY
CONSERVATION**



- IDENTIFICATION OF INTERVENTION VILLAGES BASED ON FOREST DENSITY AND DEMOGRAPHY
- SITE SELECTION (SELECTION OF VSS)
- ONE PERMANENT STRUCTURE OF VSS

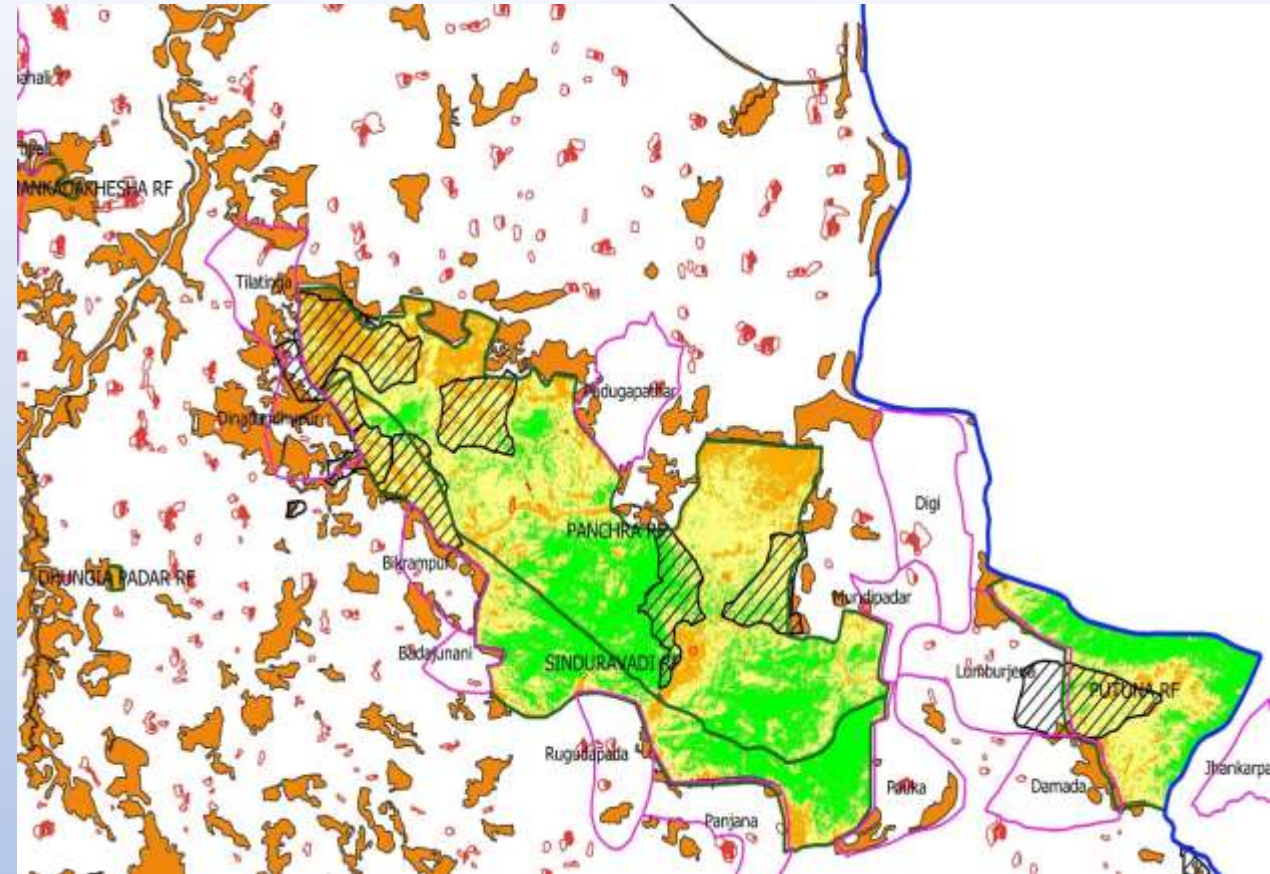
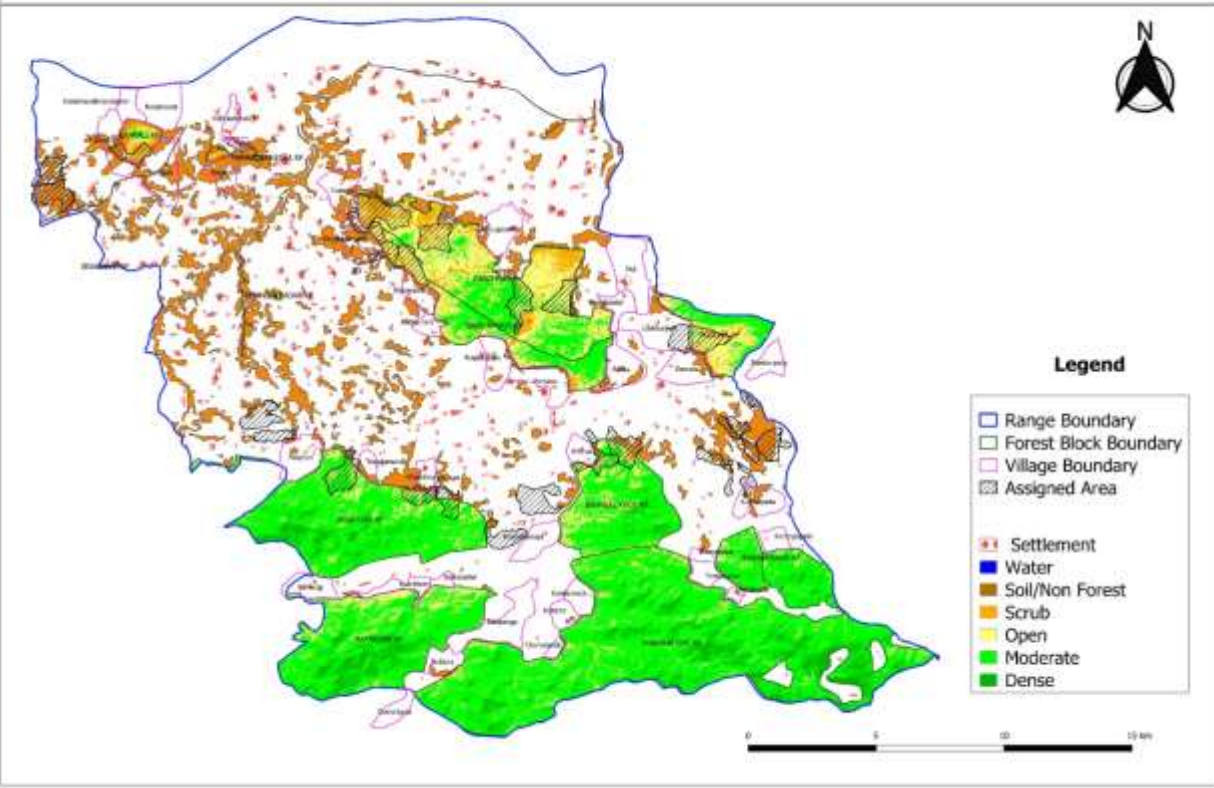


- SURVEY AND DEMARCATION
- RECOGNISANCE SURVEY



- CHECKING OF CORRECTNESS
- PILLAR POSTING

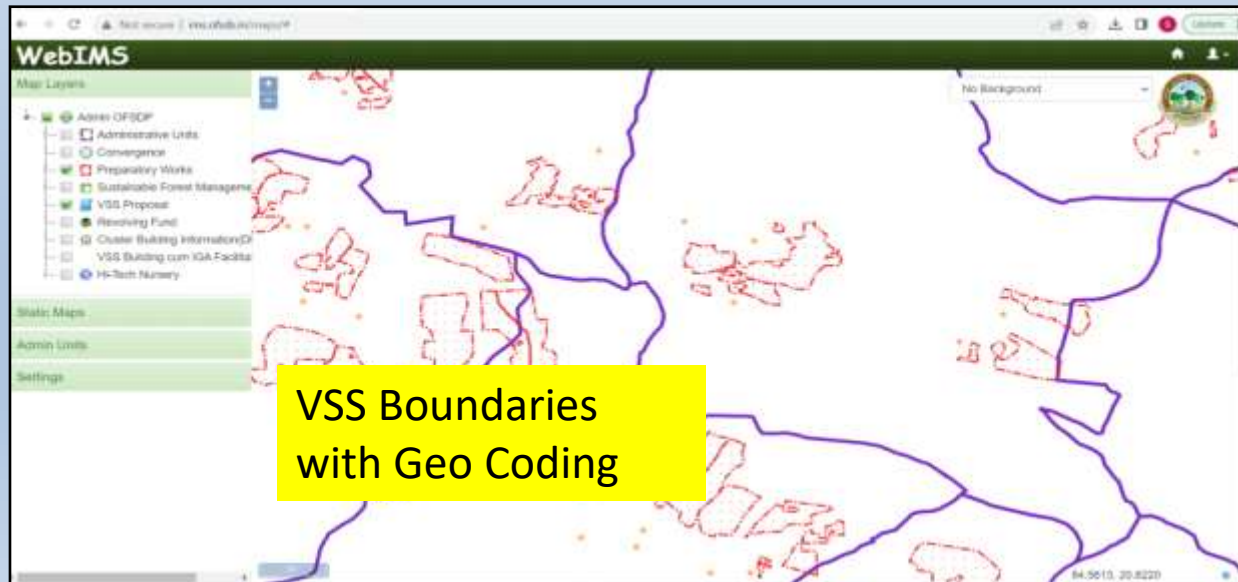
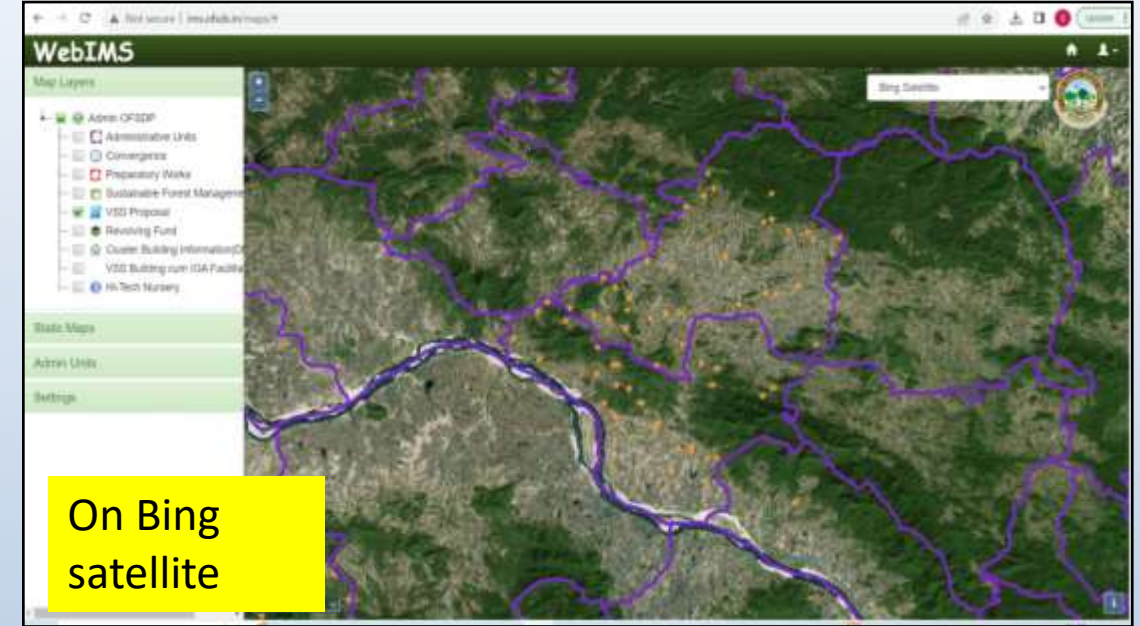
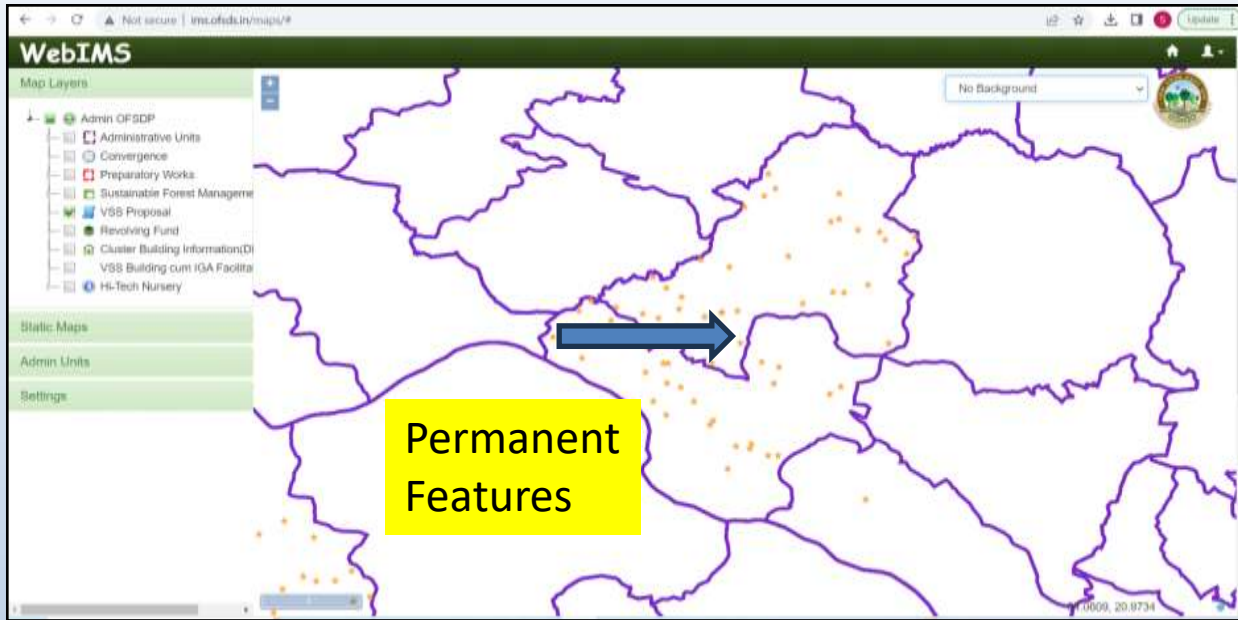
Availability of Sites for Plantation-Manmunda FMU



THE PROCESS

- Range Map superimposed on Forest Density Map and village cadastral map
- Identification of potential VSS adjacent to degraded forest areas
- List of potential villages sent to field for ground truthing and acceptance by community
- Uploading of GPS coordinates
- Final list of VSS

Processes of VSS mapping





CAPACITY BUILDING OF MASTER TRAINERS

COMMUNITY BASED GEO MAPPING

- **Preparation of Pre activity Maps for the Community**

- **Community inputs are used with satellite images. Geomatic cell of OFSDP-II has a major role to play**

- **Various interventions are planned and finalised for the next 10 years**

- **Mid Term review of Micro plan : Revisit of the micro plans where the performance of all activities and next five-year planning is done**

- **Extensive training for revisit of the Microplanning**

CHANGE DETECTION (FOREST SURVEY OF INDIA criteria vis-à-vis PROJECT criteria)

FSI CRITERIA

Canopy Density Classes (in %)	Description
0-10	Scrub
10-40	Open
40-70	MDF
>70	Very Dense

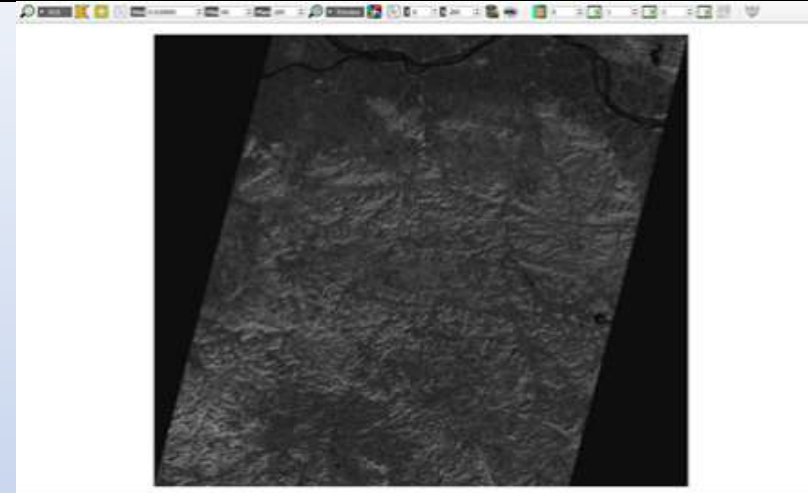
PROJECT CRITERIA

Canopy Density Classes (in %)	Description
0-10	Scrub
10-20	Open-I
20-30	Open-II
30-40	Open-III
40-50	MDF-I
50-60	MDF-II
60-70	MDF-III
>70	Very Dense

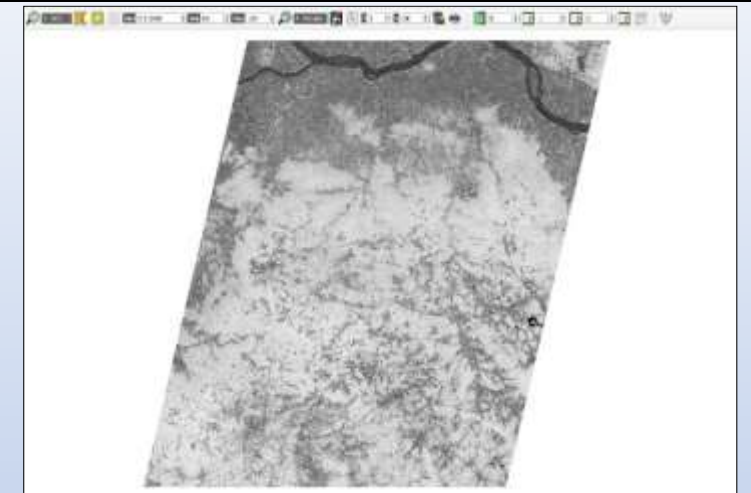
MAP PREPARATION WITH RS-GIS TECHNOLOGY -

FCD ANALYSIS BASED ON LISS IV IMAGES

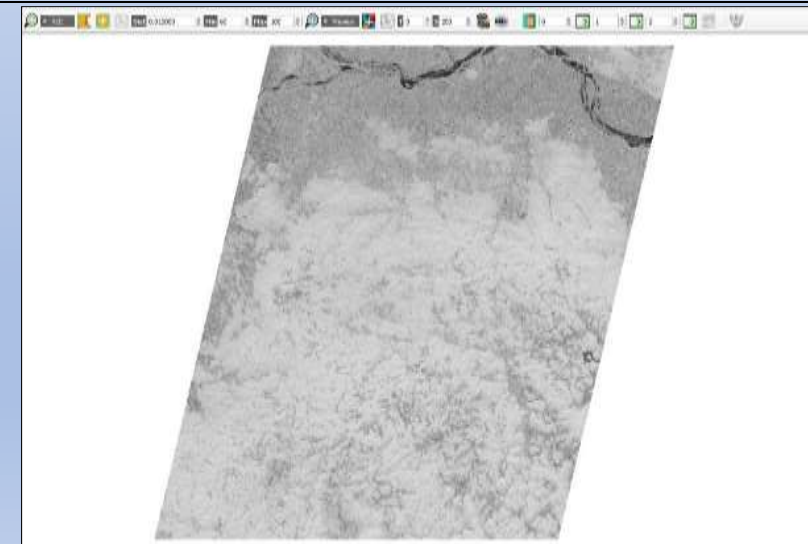
Evaluation of Advanced Vegetation Index of a satellite image



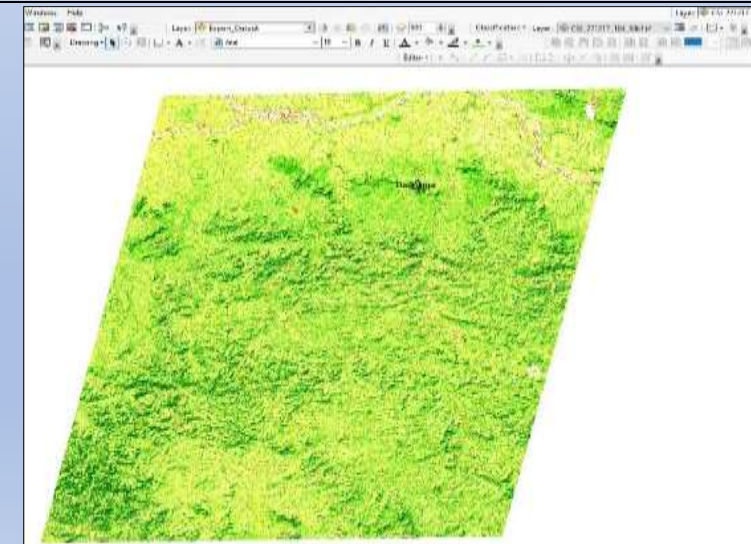
Evaluation of Bare Soil Index of a satellite image



Evaluation of Canopy Shadow Index of a satellite image



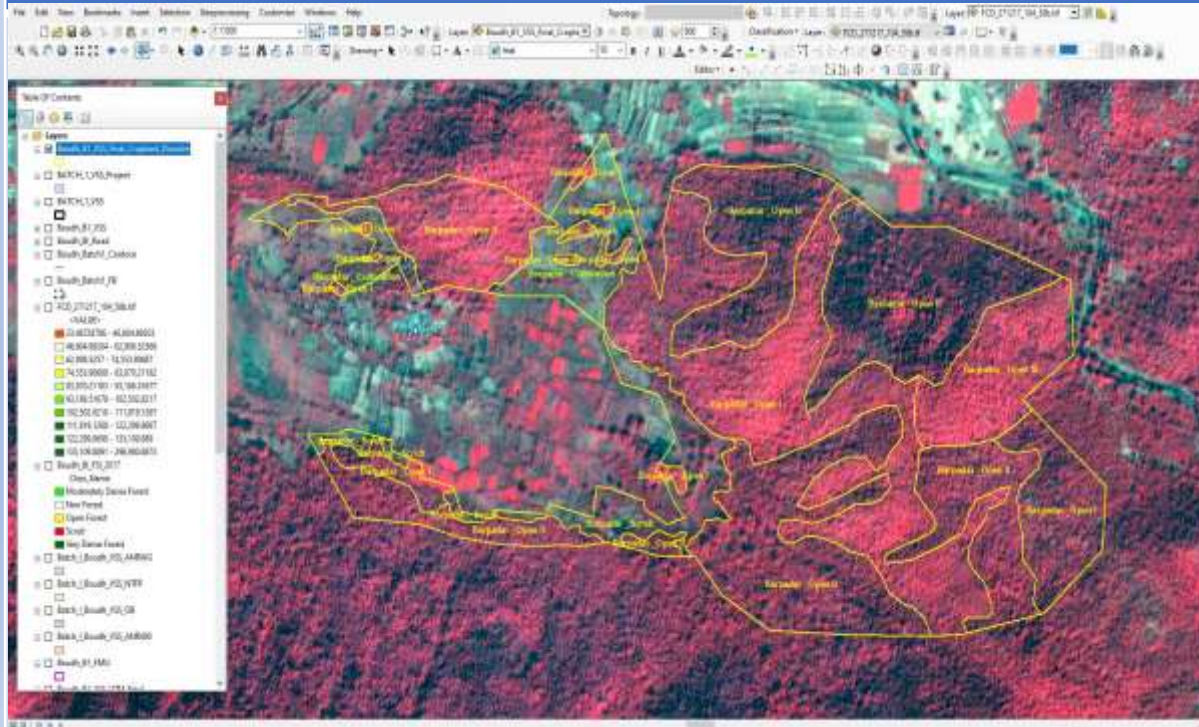
Generation of FCD map of the same area in QGIS



MAP PREPARATION - Digitization of VSS assigned area of the CARTOSAT I and LISS IV Pan sharpened merged images (Case of Dadranga VSS in Boudh DMU) 1:5000

Digitization of VSS assigned area of the CARTOSAT I and LISS IV Pan sharpened merged images (spatial resolution 2.5 mtr approx.). The case of BARAPADAR VSS in Boudh DMU is shown below

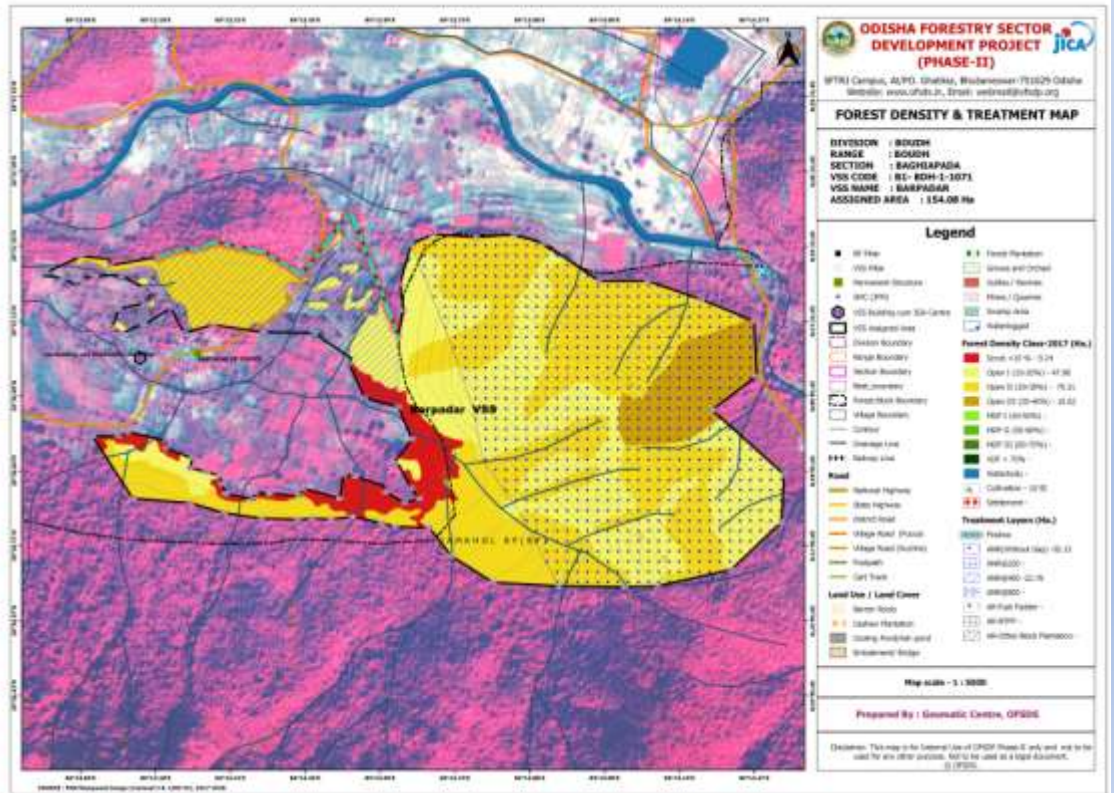
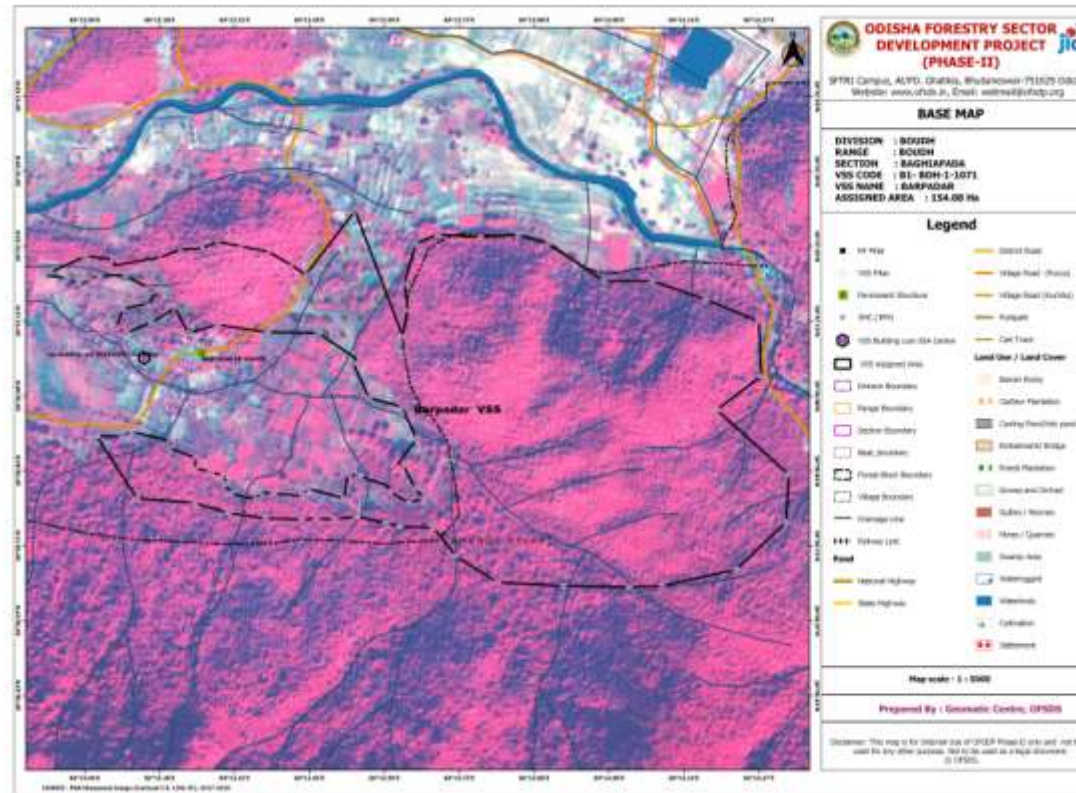
Utilization of Google earth satellite imageries for digitization.



MAP PREPARATION – Preparation of Base map, Forest Density and Treatment maps(1: 5000)

Basemap of Barapadar VSS in Boudh DMU

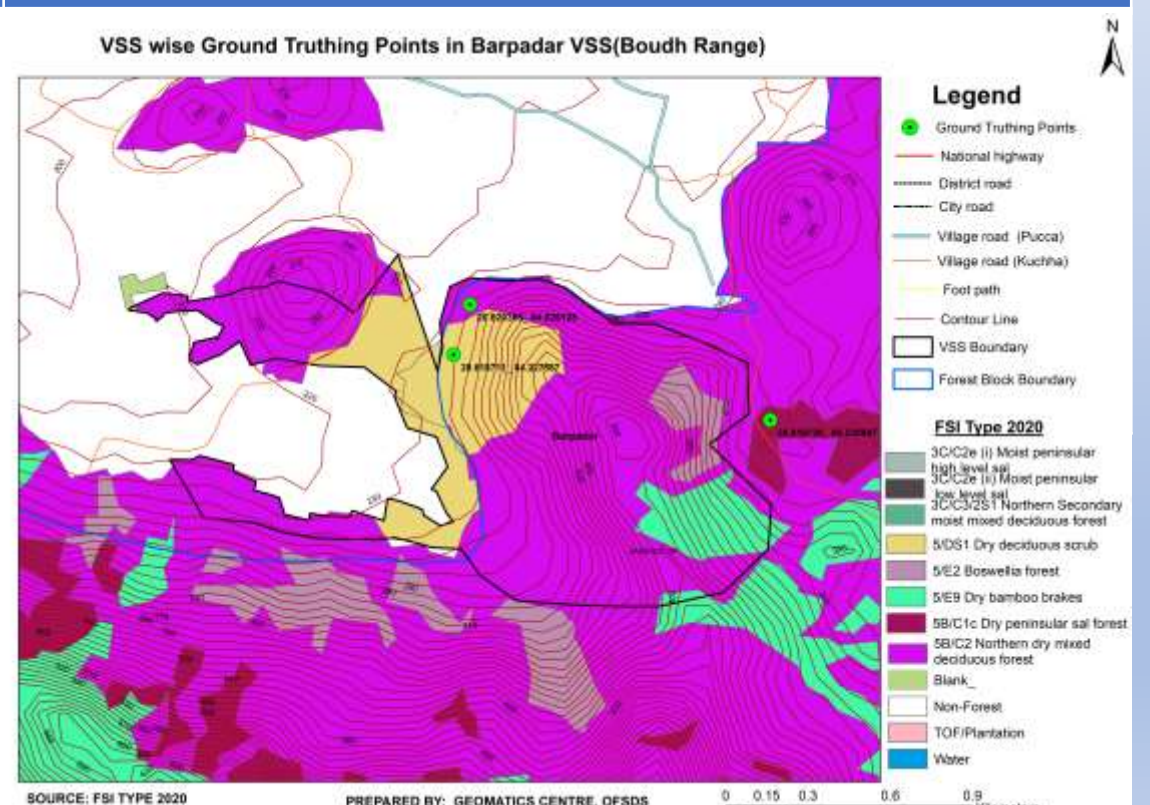
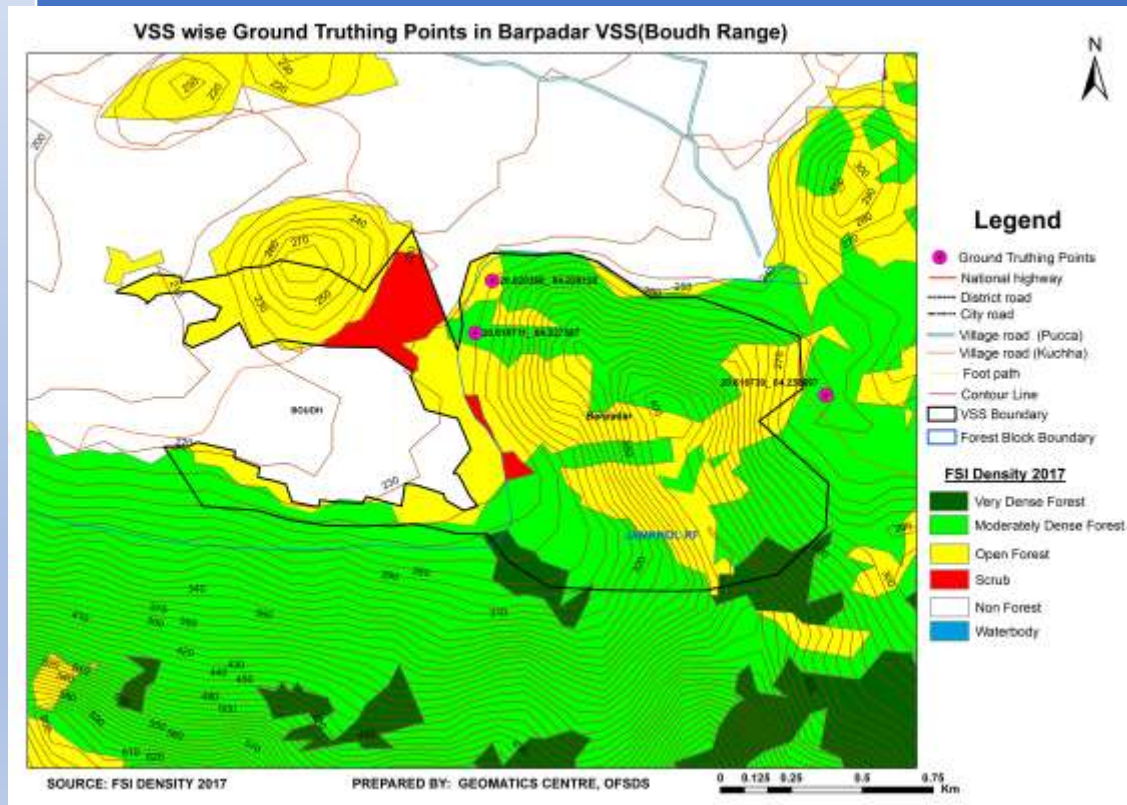
Forest Density and Treatment Map of Barapadar VSS in Boudh DMU



MAP PREPARATION – GROUND TRUTHING OF MAPS- Contours for SMC Measures

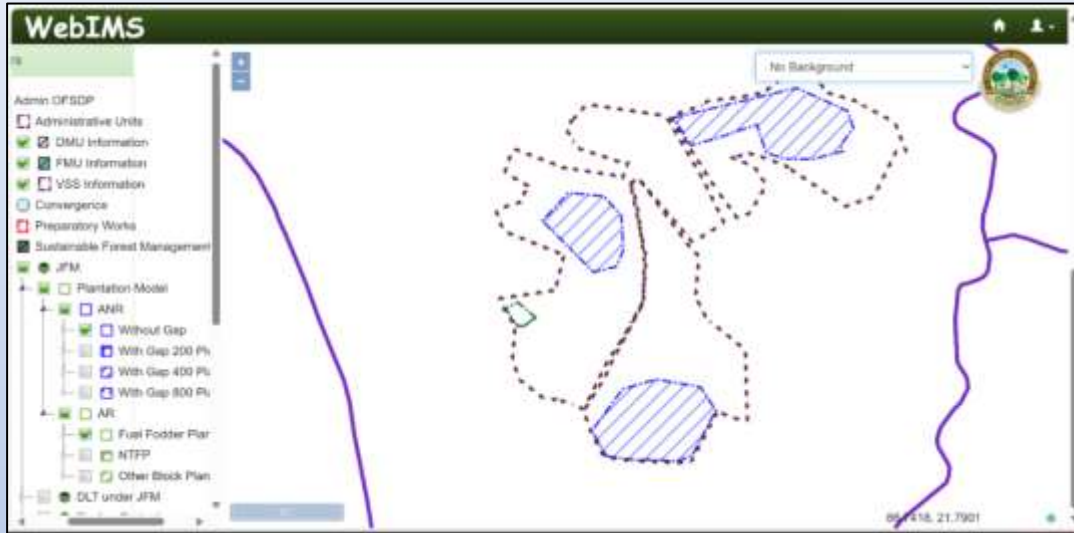
Ground truthing of density in Barpadar VSS of Boudh DMU

Ground truthing of forest type in Barpadar VSS in Boudh DMU



WebMIS based monitoring of project activities (Map based and Bing Satellite based)

WEB BASED MONITORING OF PROJECT ACTIVITIES

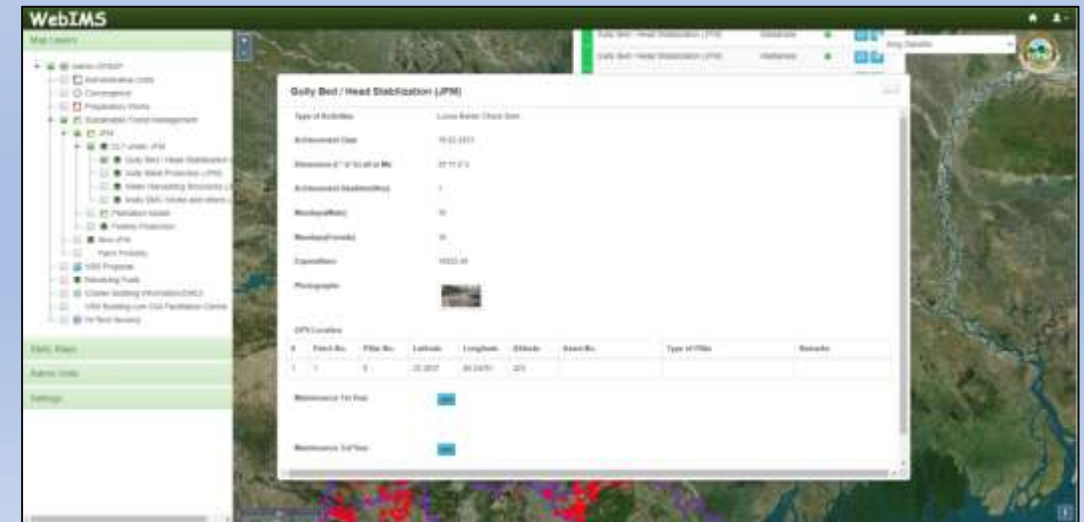


BING SATELLITE BASED MONITORING OF ACTIVITIES



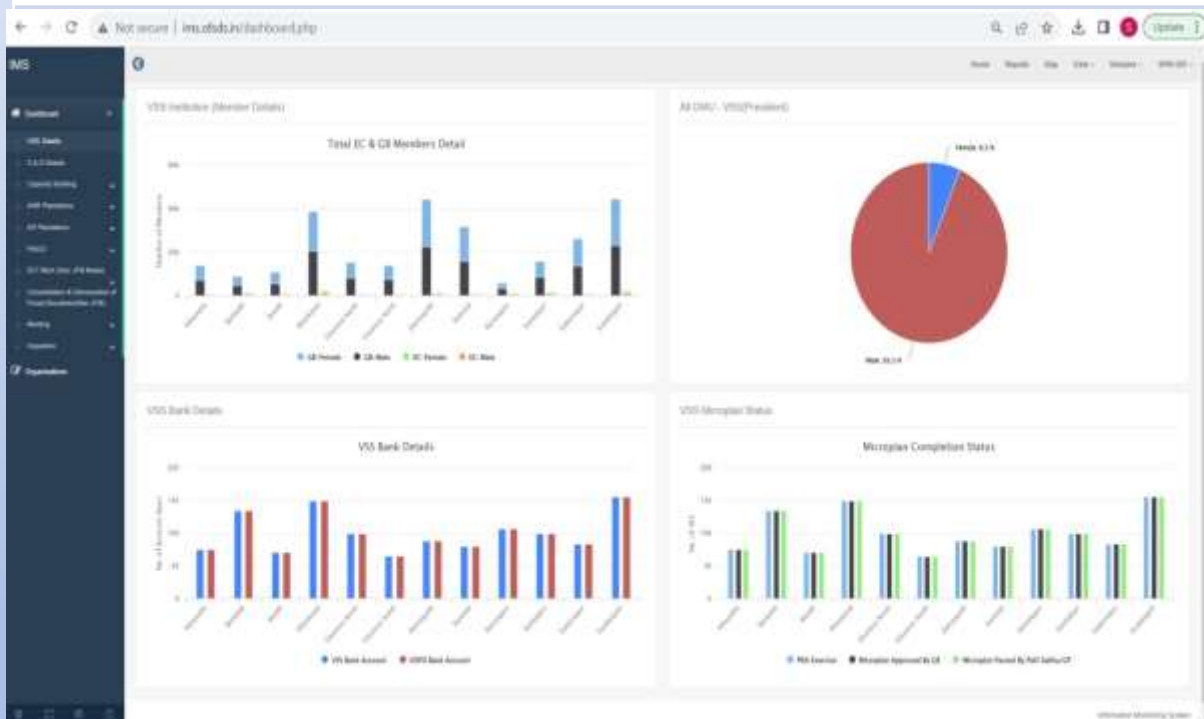
WEB IMS MONITORING OF INDIVIDUAL STRUCTURES

- Maps boundary with IMS utility created with live entries for the map information
- Map boundaries are prepared simultaneously with the community involvement



IMS LINKED FIELD DATA

DASHBOARD OF MIS BASED DATA MANAGEMENT



GENERATION OF MONTHLY REPORTS AFTER VALIDATION

Report Title: PB-1) Monthly Process on ANR (Without Ge Plantation)
 Progress Report for the Period: JAN 2017 to APR 2023 (Batch: 01)

Sl NO	Name of DMU	Name of PBU	Approved VSS	No. of VSS Work Taken	Year of Operation (No Yr)	Target(%)	Gr. Upload Area(%)	Opening Balance				During the month			
								Area Achievement (%)	No of Right/Lamp out	Clearing Material Collected in GR	Man-days Generated	Expenditure Incurred (%)	Area Achievement (%)	No of Right/Lamp out	Clearing Material Collected in GR
1	Aravali	Aravali	20	16	0	80	47.115520304	0	0	0	0	0.00	29	565	2412
2	Dudhga	Dudhga	22	7	0	32	281.222118265	0	0	0	0	0.00	28	1205	420
3	Dudhga	Karjala	24	11	0	46	245.5221427305	0	0	0	0	0.00	24	1254	613
4	Dudhga	Dudhga	20	20	0	100	100.000077139	0	0	0	0	0.00	10	522	120
5	Dudhga	Dudhga	25	21	0	84	325.547088742	0	0	0	0	0.00	30	522	120
6	Dudhga	Muggala	25	10	0	40	251.277879563	0	0	0	0	0.00	20	1618	644
7	Dudhga	Dudhga	20	9	0	45	206.022104264	0	0	0	0	0.00	30	47	1019
8	Dudhga	Dudhga	20	20	0	100	100.000049502	0	0	0	0	0.00	10	232	200
9	Dudhga	Dudhga	20	20	0	100	100.000022189	0	0	0	0	0.00	10	2415	100
10	Dudhga	Dudhga	20	9	0	45	252.2555223117	0	0	0	0	0.00	21	152	60

Monitor

What : Indicators
for Drivers of
deforestation and
forest
degradation

Reporting

To whom: VSS/
FMU/DMU/PMU

Verify

How: Field
verification
parameter

Continual
monitoring
by the
community-
based
institutions
(VSS)

By VSS
Community



NURSERY ACTIVITIES



AFFORESTATION



SMC MEASURES



FIRELINE ACTIVITIES



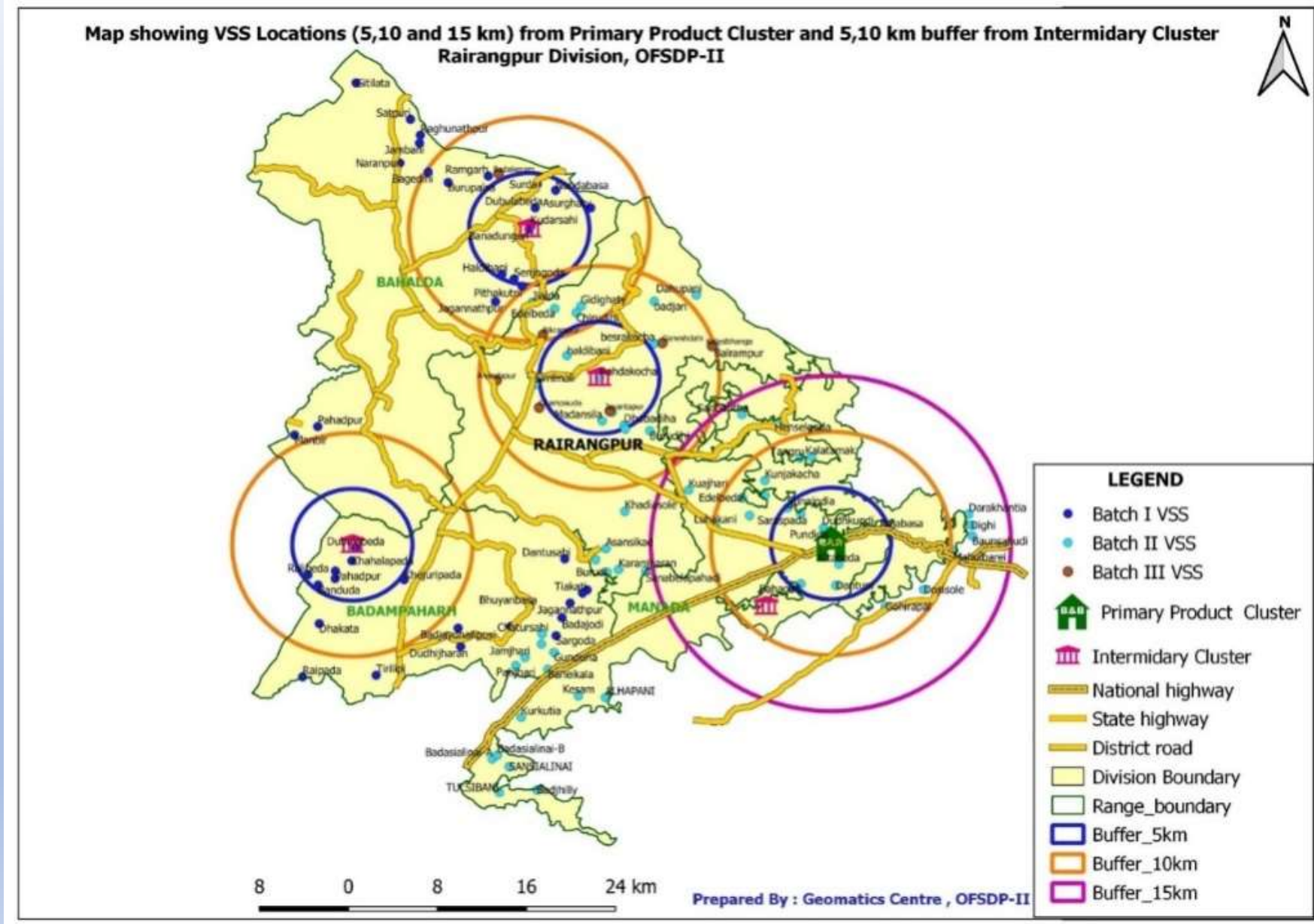
CONSOLIDATION ACTIVITIES



VSS BUILDINGS



PLANNING AND IMPLEMENTATION OF LIVELIHOOD INITIATIVES- Cluster Mapping





Thank You!

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