ICFRE Initiatives on REDD+

Dr. T.P. Singh

Assistant Director-General

Biodiversity and Climate Change

Indian Council of Forestry Research and Education,

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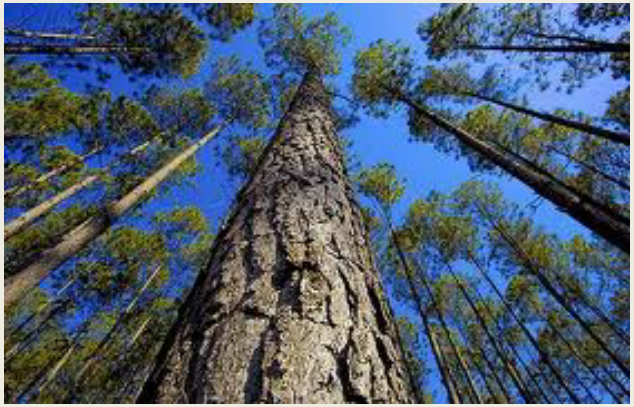
IGNFA Dehradun

Global Forest Carbon



- Global forest covers around 30 per cent of the Earth's land surface
- Hold a significant standing stock of global carbon
- Total carbon content stored in forests is more than the amount of carbon in the entire atmosphere.

(Source: UNFCCC)

Deforestation and Degradation

- **Deforestation**, conversion of forests for other activities
- **Degradation** is reduction in density class and biomass
- Contribute globally to approximately 20 per cent of annual greenhouse gas emissions (UNFCCC)
- Reducing and/or preventing deforestation and degradation is a good mitigation option

Recognition of REDD

2005: UNFCCC Conference of the Parties (COP)- 11 at Montreal

- Talks on reducing emissions from deforestation in developing countries began
  - Proposal on the issue by Papua New Guinea and Costa Rica.
- Countries recognized the importance of **Deforestation and Degradation** in relation to addressing climate change

REDD+ under UNFCCC

- COP 11 Montreal (2005)
- COP 12 Nairobi
- COP 13 Bali
- COP 14 Poznan
- COP 15 Copenhagen
- COP 16 Cancun
- COP 17 Durban
- COP 18 Doha
- COP 19 Warsaw
- Lima (2014)
- Paris (2015) – Finalized

REDD +

- **Decision 1/CP.16 (2009) of Cancun Agreement defines Scope of REDD+**

  (a) Reducing emissions from deforestation

  (b) Reducing emissions from forest degradation

  (c) Conservation of forest carbon stocks

  (d) Sustainable management of forests

  (e) Enhancement of forest carbon stocks

Finalized under Paris Agreement on Post 2020 Climate Change Scenario

Cancun Forestry Decisions

REDD plus activities to be implemented in Three Phases:

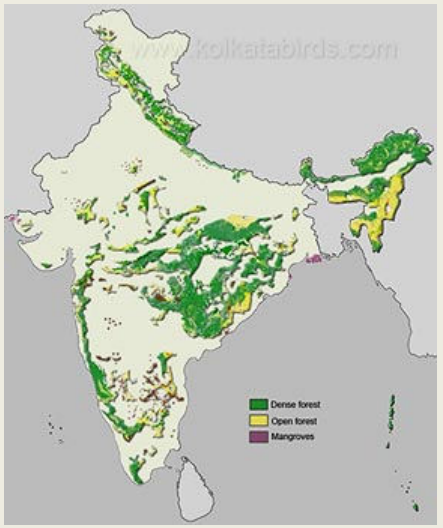
1. **Development of national strategies or action plans, policies and measures**

2. **Implementation of national strategies and action plans through results-based demonstration activities**

3. **Evolving into results-based actions that should be fully measured, reported and verified (MRVable) alongwith Safeguards**

MRV

- Measurement of Carbon Stocks
  - Reference levels/Baselines
  - Change in Stocks
- Reporting to UNFCCC/Voluntary Markets
- Verification
  - By independent agencies



Needed for Benefit Transfer to communities

Benefit sharing

Incentivize the communities for protection and conservation of natural forests

Equitable sharing of finances with the communities that conserve carbon

Financing REDD+ Benefits

Multilateral / Bilateral funding

kfW, NoRAD, World Bank, UN REDD etc.

Resources like Green India Mission (GIM)

Carbon Market mechanism

Non market mechanisms and non carbon benefits – Discussions going on

Safeguards

Environmental

That actions are consistent with the conservation of natural forests and biological diversity, ensuring that the (REDD+) actions are not used for the conversion of natural forests

Why Environmental Safeguards

- Conversions of Natural Forests to Plantations
- Biofuel Crops
- Displacement of deforestation and degradation to areas of high biodiversity

Social Safeguards

- Respect for the knowledge and rights of **indigenous peoples** and members of **local communities (ILCs)**
- The full and effective participation of relevant stakeholders, through **Free Prior Informed Consent (FPIC)**

Why Social Safeguards

Risks of REDD+ to ILCs

- Loss of traditional territories
- Restrictions on land and forest rights
- Lack of Equitable benefit sharing
- Loss of traditional knowledge

Safeguards Information Systems (SIS)

Provide information on how safeguards for REDD+ activities are addressed and respected

- Keep stakeholders informed
- Build confidence among stakeholders
- Provide a learning platform for continuous improvement

Tools to improve governance

Roadmap for REDD+ in India

- Phase 1 – National Strategy and Action Plan Development (MoEF&CC)
- Phase 2 – Readiness and Initial Action

Overlapping

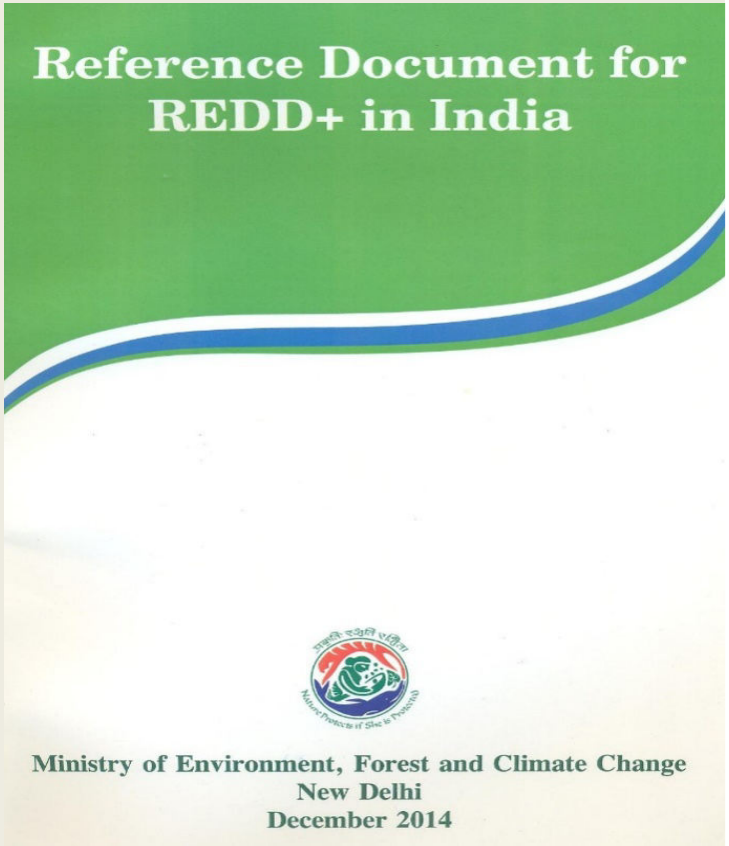
- Phase 3 – Countrywide Implementation

Reference document for REDD+ in India:

The document based on the existing knowledge available on the subject and roles and responsibilities of different departments, institutions, civil society and local communities

Necessary guidance and framework for REDD+ implementation, covering:

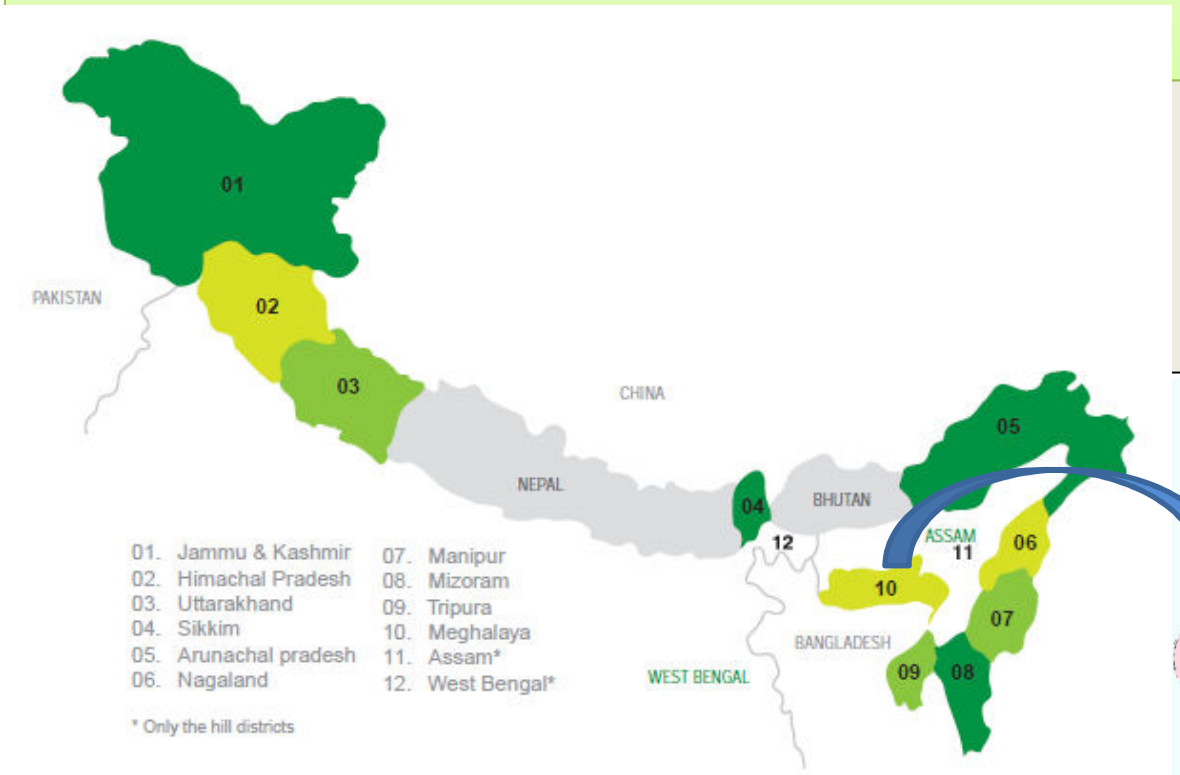
- National forest reference level,
- Safeguards,
- MRV mechanism,
- capacity building, and
- Identification of research gaps



Meghalaya Project (1st REDD+ in India)

A REDD+ pilot project in the East Khasi Hills in Meghalaya

Community Forestry International (CFI) and the Mawphlang community working together since 2005 to preserve a 17000 Hectare area in the Umiam basin watershed region



Other Projects under implementation

- Uttarakhand REDD+
  - ICFRE and Uttarakhand Forest Department
- Collaborative Pilot between ICFRE and ICIMOD
  - Eastern Himalayas
  - In India, Nepal, Bhutan and Myanmar
- FOREST PLUS of USAID
  - MoEF, ICFRE Institutes and FSI
  - 4 Landscapes (in HP, MP, Sikkim and Karnataka)
- World Bank-GEF Project
  - ESIP
  - To start this year

ICFRE Project in Uttarakhand

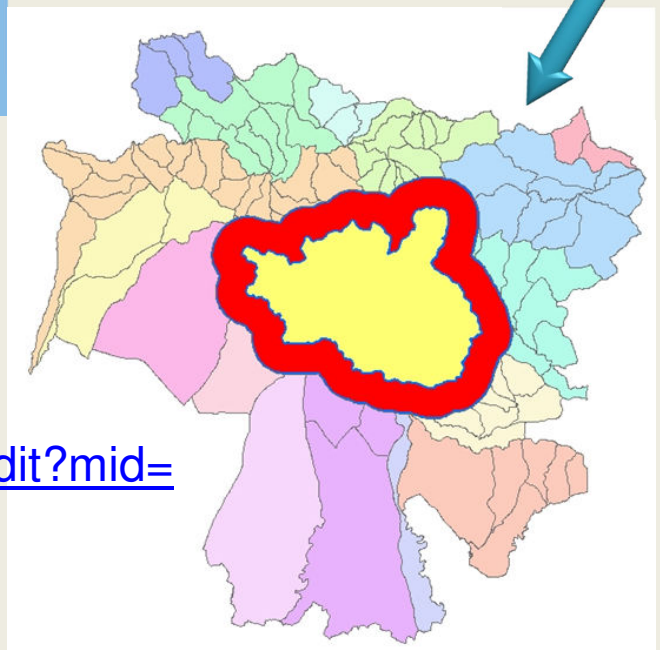
The Project is implemented in 60,000 Ha. *of Nainital District* with funding from CAMPA, Uttarkhand Forest Department

***Kosi* Watershed – Kalsa Gola sub-watershed**

Objectives of Pilot

- **Estimation of C status in the selected watershed**
- **Developing a transparent MRV system**
- **Developing an SIS**
- **Getting the project registered for carbon credits**
- **Capacity building of participating communities**

Uttarakhand REDD-plus Project



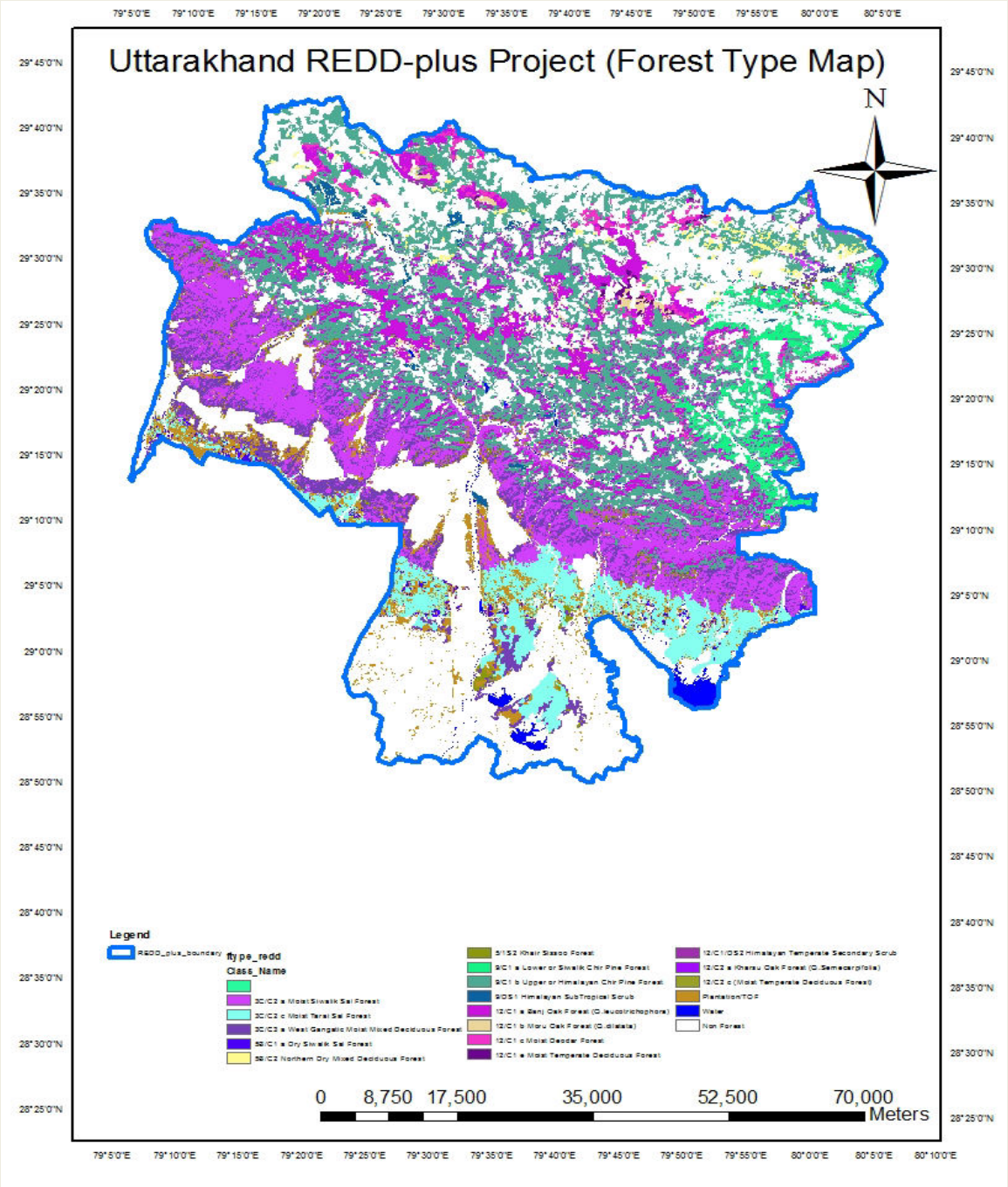
Open Hyperlink to visualize on the Google maps

https://www.google.com/maps/d/edit?mid=z0L5HyZm_EEo.kjeTiKG-dEOQ

Uttarakhand REDD-plus Project Profile

District	Total Forest Area(ha)	Total Area(ha)
Kalsa Gola (Project Area)	**45856**	**61194**
Leakage Area	53226	69167
Reference Area	250124	423532
Project Zone	349206	553893

Forest sub-Types - 16
3C/C2 a Moist Siwalik Sal Forest
3C/C2 c Moist Tarai Sal Forest
3C/C3 a West Gangatic Moist Mixed Deciduous Forest
5B/C1 a Dry Siwalik Sal Forest
5B/C2 Northern Dry Mixed Deciduous Forest
5/1S2 Khair Sissoo Forest
9/C1 a Lower or Siwalik Chir Pine Forest
9/C1 b Upper or Himalayan Chir Pine Forest
9/DS1 Himalayan SubTropical Scrub
12/C1 a Ban Oak Forest (*Q.leucotrichophora*)
12/C1 b Moru Oak Forest (*Q.dilatata*)
12/C1 c Moist Deodar Forest
12/C1 e Moist Temperate Deciduous Forest
12/C1/DS2 Himalayan Temperate Secondary Scrub
12/C2 a Kharsu Oak Forest (*Q.Semecarpifolia*)
12/C2 c (Moist Temperate Deciduous Forest)



Methodology for the Project

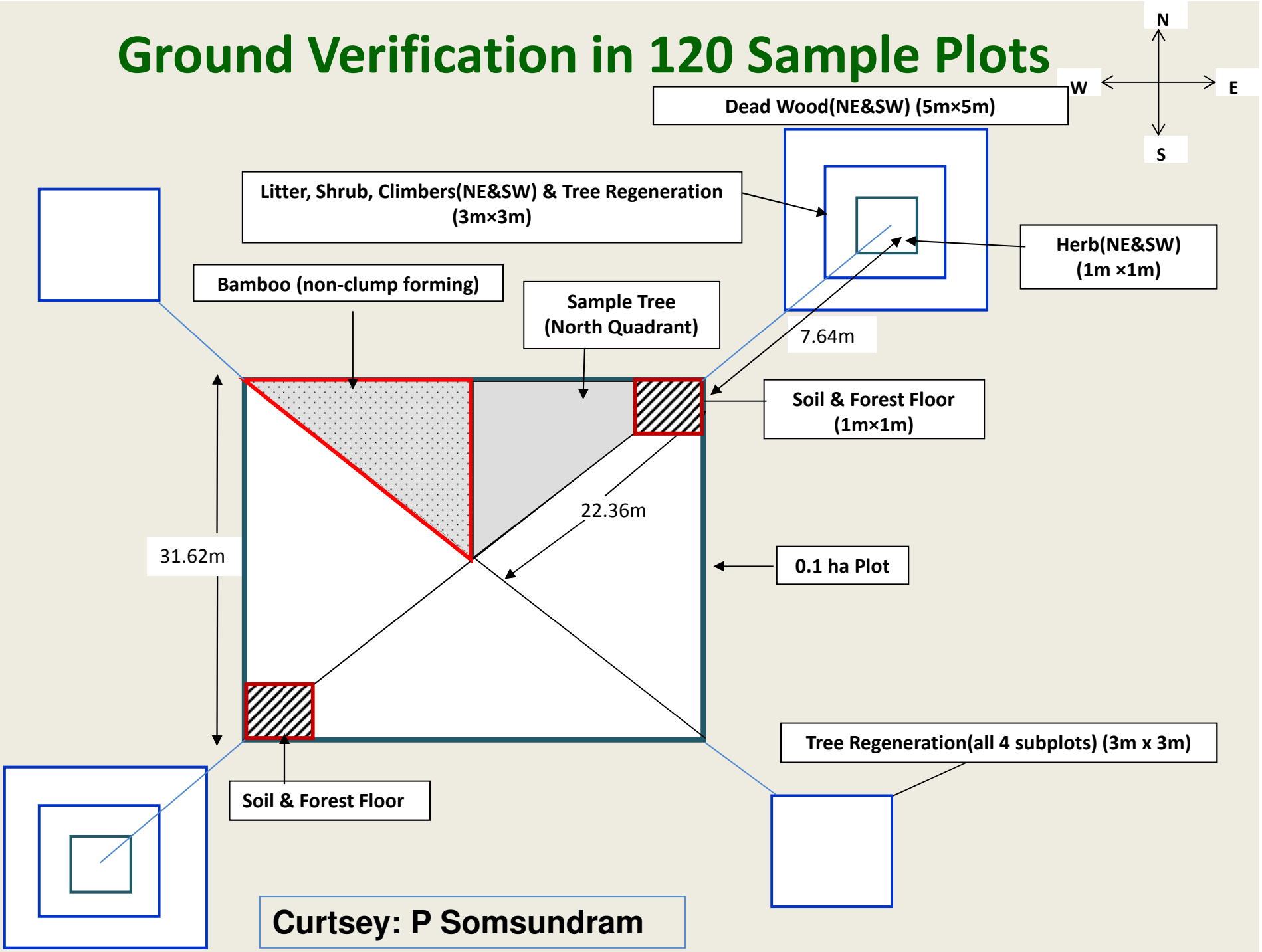
- From Voluntary market Standards
  - Verified Carbon Standard (VCS)
  - Carbon, Community and Biodiversity (CCB)

- VCS + CCB methodology followed
  - Captures both carbon and safeguards information
  - Credits fetch high value in C-market

LANDSAT Data used

Data/Task	**VM0006**
Remote Sensing imagery/resolution	≤ 30m
Remote Sensing/ imagery time series needs for reference area	Imagery from three time points used from the period 0-15 years prior to project start (2001, 2008 and 2015)

Ground Verification in 120 Sample Plots

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Marking of the Trees


Collection of Soil Sample
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Carbon Stock Status in Project Area : Kalsa Gola Sub Watershed

Forest Type	Mean Carbon Stock Density (t/ha)	Area (ha)	Carbon Stock (tonnes)	No of plots
Banj Oak Forest	191.89	12,763.70	2,449,165.72	36
Himalayan Chir Pine Forest	160.85	26,096.26	4,197,480.63	73
Kharsu Oak Forest	210.65	1.38	290.70	2
Moist Deodar Forest	**157.92**	158.52	25,033.76	2
Moist Siwalik Sal Forest	**248.30**	1,849.02	459,116.20	7
Moist Temperate Deciduous Forest	230.91	116.41	26,879.75	3

Socio-Economic Survey in 25 villages

Drivers of Degradation at Project Site

- Collection of fuelwood
  - For cooking and source of energy
  - For heating during winter months.
- Fodder collection for animals.
- Cattle Grazing in the Forest.
- Fire
- Collection of Understorey vegetation for livestock bedding and manuring.
- Encroachment in the forest.
- Illicit fellings

Fuel wood Collection

Parameter	Winter Season	Summer Season
	Mean ± Standard Error	Mean ± Standard Error
Quantity of Collection (Kg) / HH / Day	28.33 ± 0.50	24.26 ± 0.60
Time Spent (hr)	3.77 ± 0.07	3.41 ± 0.09
Distance Travelled (Km)	3.30 ± 0.12	3.00 ± 0.12

Collection of Fuelwood

Annual fuelwood consumption and carbon emission

Fuel wood Biomass consumption per HH/day	**Total no. of HH in the project area**	**Estimated biomass consumption/ year in the project area (Million Tonnes)**	**Total carbon loss due to fuel wood burning/year**
26.29kg	18458	26.29*18458 *365= 0.1771 Million Tonnes	0.1771*0.5 = 0.0885 Million Tonnes = 88,000 Tonnes / year = **1.5 Tonnes/ Ha/yr**

Fodder Collection

Parameter	Winter Season	Summer Season
	Mean ± Standard Error	Mean ± Standard Error
Quantity of Collection (Kg) / HH	26 ± 0.58	25.19 ± 0.60
Time Spent (hr)	3.20 ± 0.08	3.27 ± 0.21
Distance Travelled (Km)	2.84 ± 0.13	2.68 ± 0.11

Logging

Lopping of Oak Tree

Leaf Litter collection

Parameters	Winter Season	Summer Season
	Mean ± Standard Error	Mean ± Standard Error
Quantity of Collection (Kg/HH)	22.22 ± 0.59	21.23 ± 0.63
Time Spent (hr/d)	2.69 ± 0.07	2.97 ± 0.08
Distance Travelled (Km/day)	2.62 ± 0.09	2.67 ± 0.10

Fuelwood + Fodder + Leaf Litter = Carbon Loss of around 4 Tonnes / Ha / year

Measures to Address the Drivers of Degradation

- Improved Cook Stove and LPG can be provided to the community to reduce the usage of fuelwood hence addressing forest degradation.
- Plantation of fodder grasses.
- *Pirul* collection contributes reduction in fire incidence.
- Small water reservoirs can be prepared to store the rain water .
- Check Dam construction to control the flow of water and soil erosion.
- Appropriate Tool/implements can be provided to Van Panchayats to control the fire occurrence.

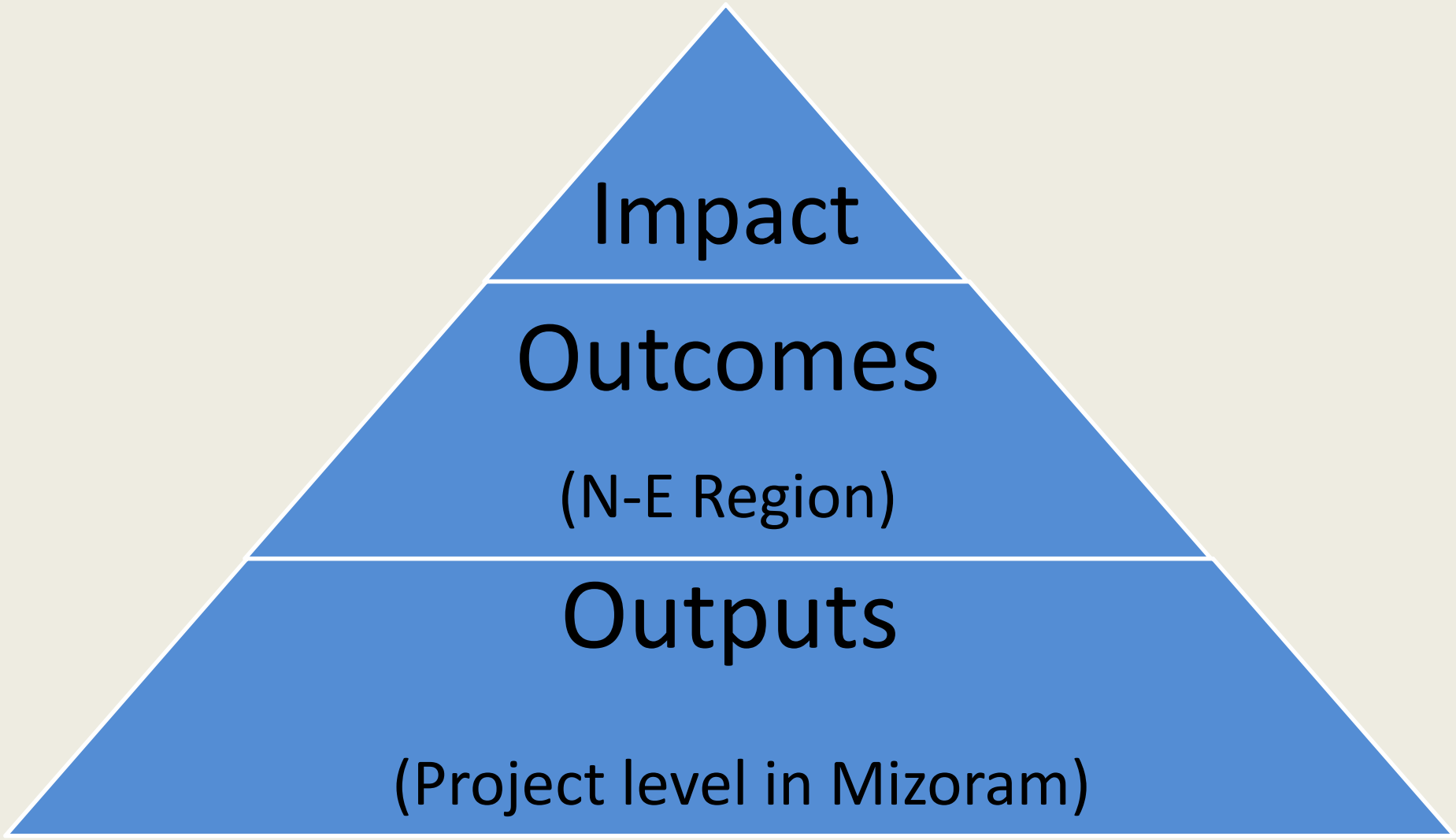
Next Steps in Project

- Preparation of PDD
  - as per VCS and CCB Guidelines
- Registration of the Project
- Validation
- Capacity Building of Department and communities
- Actual Activities in the field

ICIMOD-ICFRE REDD+ Project

- Part of Trans-boundary REDD+ Programme of ICIMOD in 4 countries
- Contiguous with other three countries: Nepal, Bhutan and Myanmar
- Improve capacity on REDD+ understanding in N-E Indian Himalayas
- Activities specifically focused on Mizoram

REDD+ Results Framework



Specific Project Objectives

- Establishment of South-south cooperation
- Exchange of experience and mutual learning for other three countries
  - MRV, SIS, Reference Levels (Regional)
- Development of Methods for calculating, modelling and forecasting carbon sequestration
- Preparation for REDD+ Readiness in North-Eastern India

Programme Outcomes

1. Enhanced capacity of development and implementation of REDD strategy and action plan at each level (community, State and National levels)

2. Improved understanding of scientific knowledge for precise estimation of carbon stocks

Programme Impact

- REDD+ action plans are integrated with national forest policy and institutional framework

- Effective and equitable implementation of REDD+
  - Which is environmentally sound, gender sensitive and socially inclusive

How to achieve these objectives?

- Project period from 2015-2019
- Funding of Euro 300,000 (Rs. 2.25 Crores) is granted to ICFRE by GIZ-Nepal through ICIMOD
- Detailed year – wise activities have been worked out
- Candidate State is Mizoram (*To begin with*)
- However, capacity building of all the North-Eastern States is envisaged

Activities completed in 2015

Two side events during December ‘15 at UNFCCC CoP21 in Paris

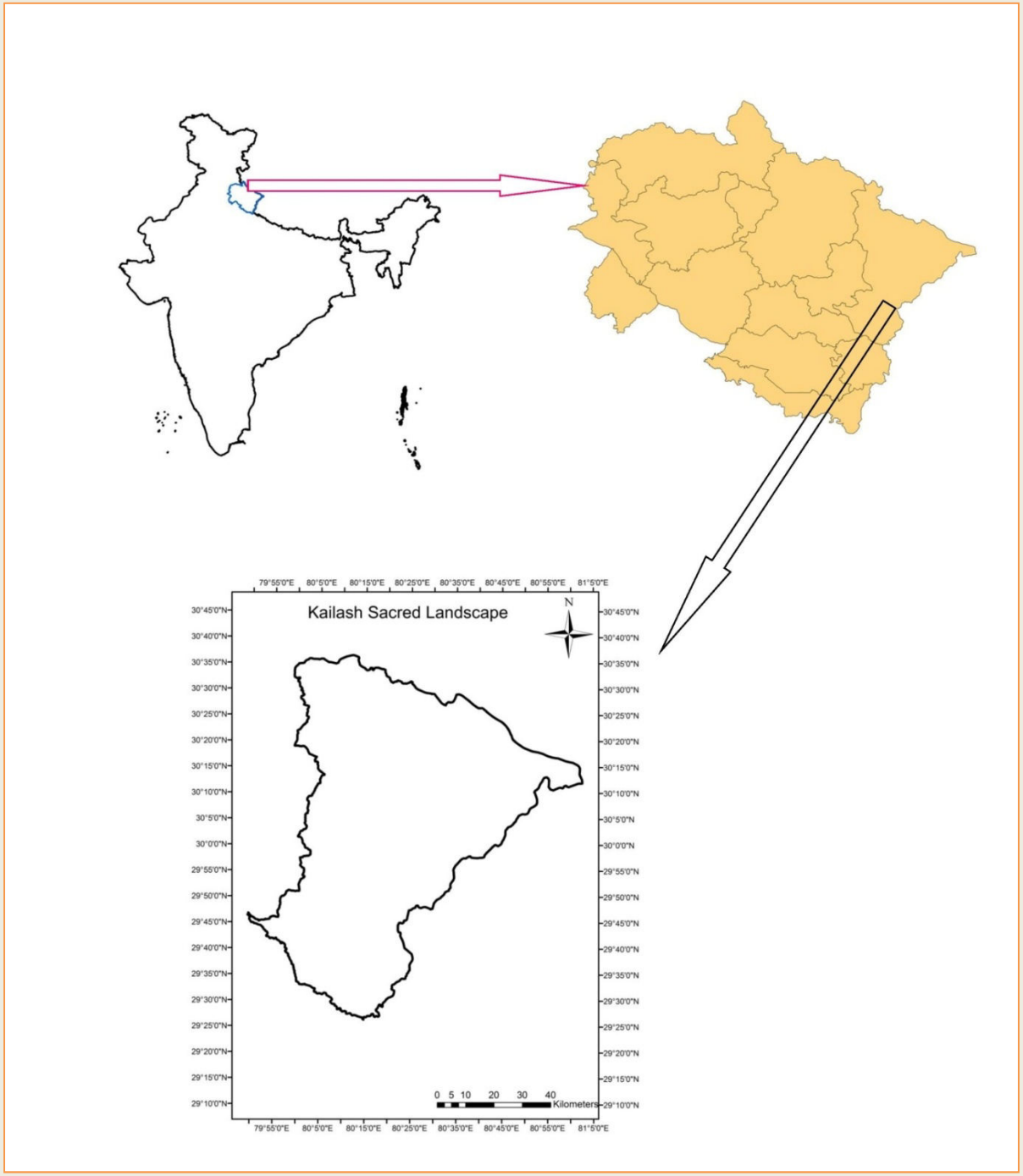
- REDD+ in Trans-boundary landscapes
- Mitigation and adaptation of climate change in Himalayan ecosystems

Activities completed so far

- Inception Workshop at Aizawl (28-29 Jan.)
  - Preliminary Site selection in Mizoram
- Stock taking review to understand REDD+ implementation in country
- National workshop to finalize National REDD+ Strategy – Dehradun
- Scoping study of REDD+ in Kailash Landscape of Uttarakhand Himalayas

Location of Kailash Sacred Landscape (KSL)

Disrict of Pithoragarh, and part of Bageshwar

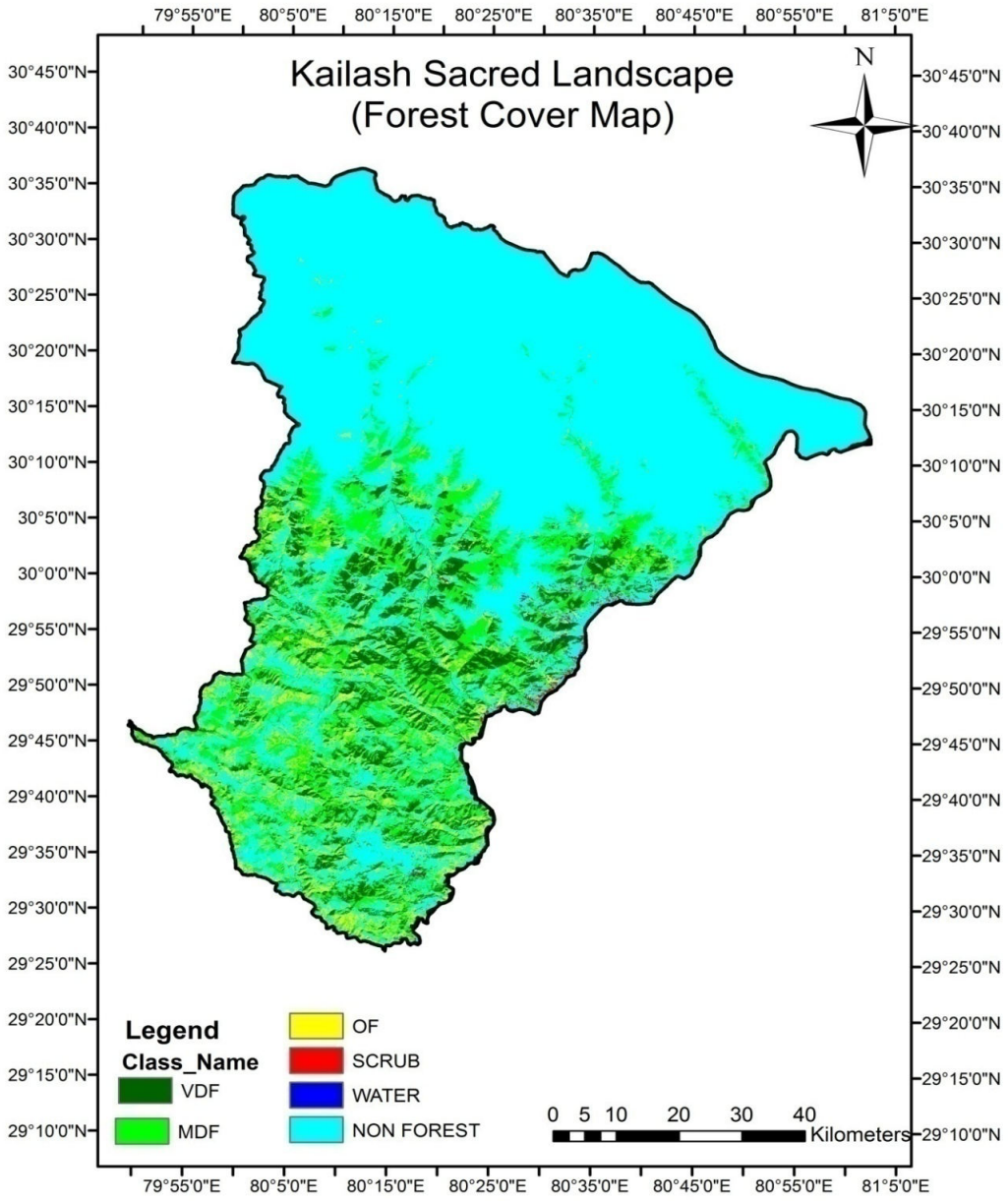


Kailash Sacred Landscape Visited

Landuse system (Agriculture and Forest) studied

Consultation at GBPNIHESD, Almora

Forest Cover Status mapped in KSL



Forest Class	Area (ha.)
Very Dense Forest	61672.20
Moderately Dense Forest	119476.92
Open Forest	46615.51
Scrub	2790.43

Carbon Stock Estimation in KSL

Forest Type Major Group	Density	Carbon Stock (t/ha)	Total area forest cover wise	Total Carbon (tonnes)
Tropical Moist Deciduous Forest	VDF	99.95	1320.09	131942.64
	MDF	82.53	1090.01	89958.72
	OF	55.34	730.90	40448.08
Tropical Dry Deciduous Forest	VDF	167.53	3849.52	644909.55
	MDF	152.64	3507.37	535365.45
	OF	66.59	1530.11	101890.02
Subtropical Pine Forest	VDF	155.76	16902.47	2632729.16
	MDF	120.57	13083.79	1577512.57
	OF	91.56	9935.74	909716.09
Montane Moist Temperate Forest	VDF	172.83	60646.09	10481463.97
	MDF	138.34	48543.54	6715513.53
	OF	94.27	33079.37	3118391.94
Subalpine & Dry Temperate Forest	VDF	181.34	7899.72	1432534.92
	MDF	152.69	6651.64	1015638.57
	OF	103.52	4509.64	466838.34
Alpine Scrub	VDF	202.34	4.02	812.75
	MDF	84.37	1.67	141.31

Consultation with local community at Village Naukina, Pithoragarh

Fodder Collection

Litter Collection

Fuel Wood Collection

Pine Needle (*Pirul*) Collection

Interventions/ Activities to address the drivers of Deforestation and Forest Degradation

- Improved Cook Stoves and Alternative Sources of Clean Energy.
- Grazing Control: Fodder Plantation
- Forest Fire Control: Participation of local youth
- Litter Collection: Encouragement of Vermicomposting
- Agricultural Practices: Improved variety, implements etc
- Cultivation of Medicinal Plants
- Eradication of Invasive Species
- Strengthening of *Van Panchayats*

Scoping Study submitted to ICIMOD

Activities planned till Dec ‘16

- Scoping study of promoting Bamboo plantation in addressing REDD+ Objectives (Mizoram)
  - Interface with National Bamboo Mission Project
- Provision of Solar Dryer for community based Turmeric grower SHGs
- Starting preparation of State REDD+ Action Plan for Mizoram and Uttarakhand
  - Experience of Uttarakhand REDD+ to be utilised

Activities planned contd..

- Formation of REDD+ Working Group with members from all N-E States and Uttarakhand
  - MRV
  - SIS

- Side Event on REDD+ Trans-boundary Project in India Pavillion at CoP-22 in Marrakesch, Morocco
  - In association with ICIMOD

Conclusion

- REDD+ offers is an innovative way to mitigate climate change in post 2020 scenario
- India needs to finalize REDD+ Strategy
- Pilot Programmes are offering good, and they need to be synergized
- Capacity building of stakeholders holds the key to successful implementation at all levels

Thanks