



# Western Ghats Sentinel Landscape

## Forest and Agroforest Mosaics of the Western Ghats (India)

C. Garcia, S. Setty, G.Devagiri, P.M Aubert, S.Tomar  
Sentinel Landscapes – July 2014



# Overview

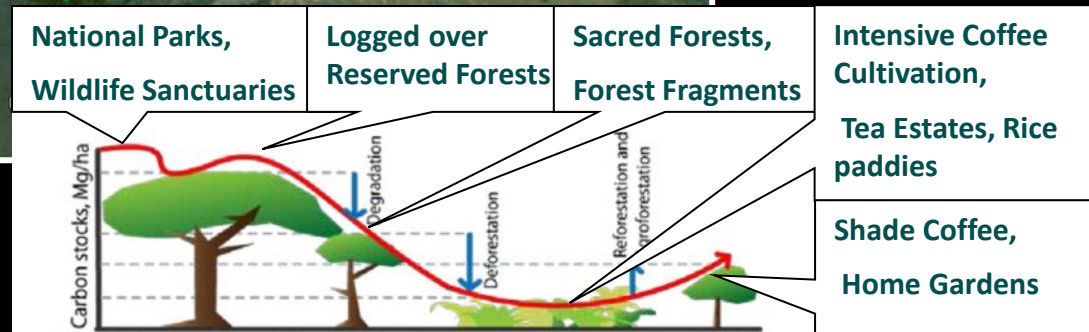
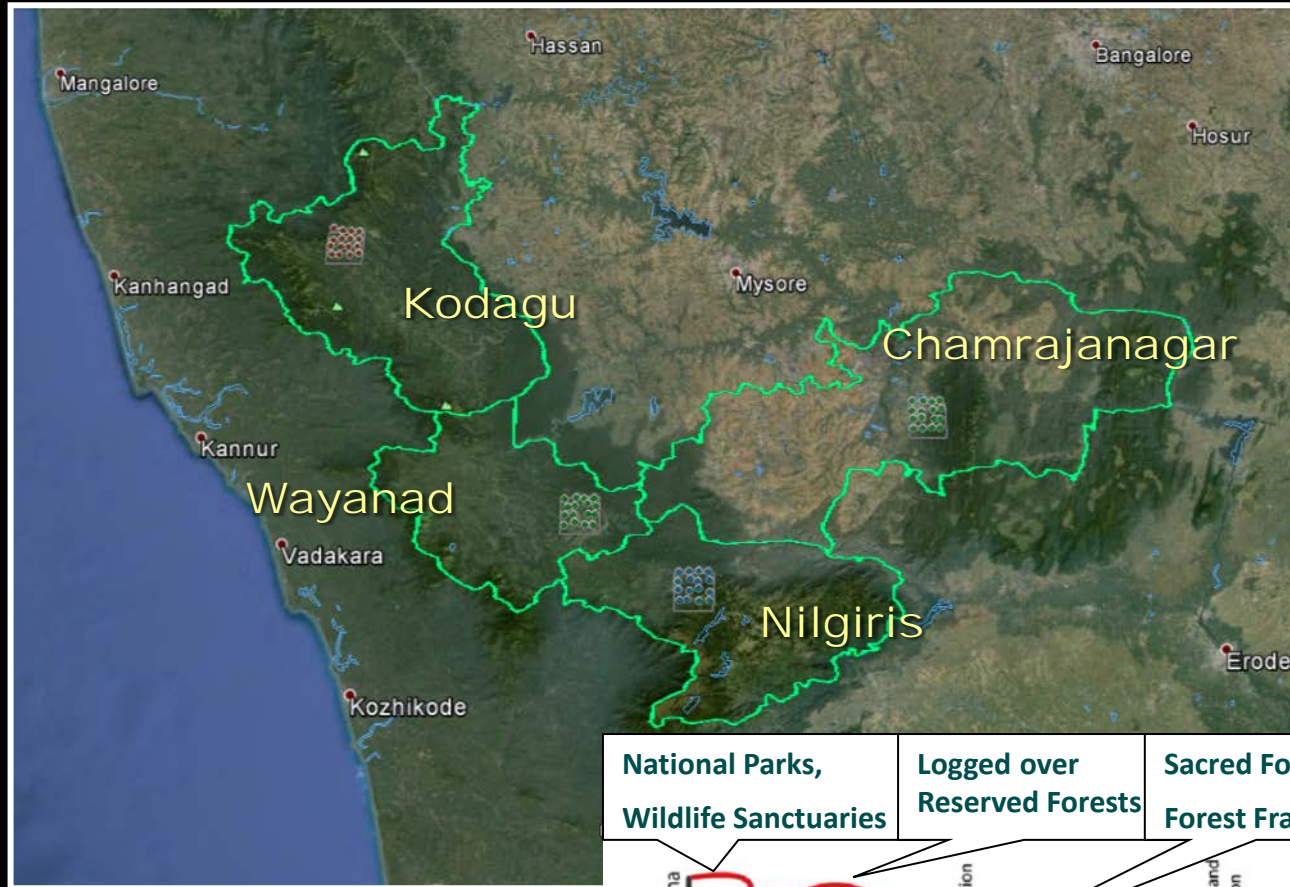


# Overview



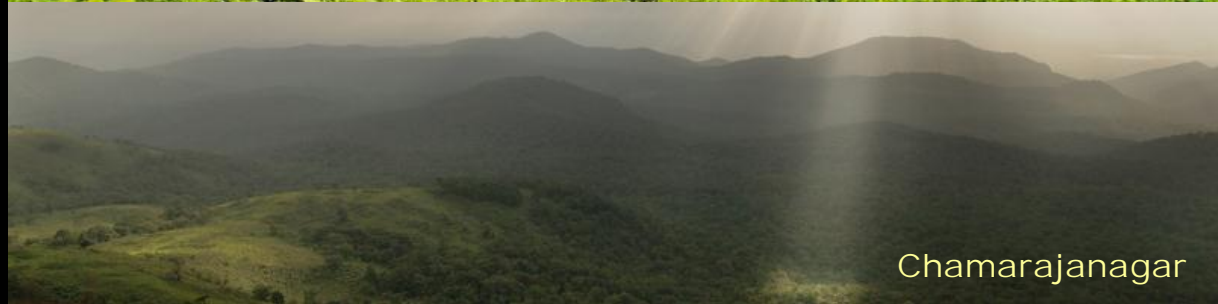
- The Western Ghats stretches 160 000 km<sup>2</sup>, and sustain over 245 million people that receive their water supply from the rivers originating in the region.
- The mountain range is a UNESCO World Heritage, and biodiversity hotspot.
- The forest cover is highly fragmented.
- Infrastructure development and agroforestry are the main drivers of change.

# The Western Ghats SL

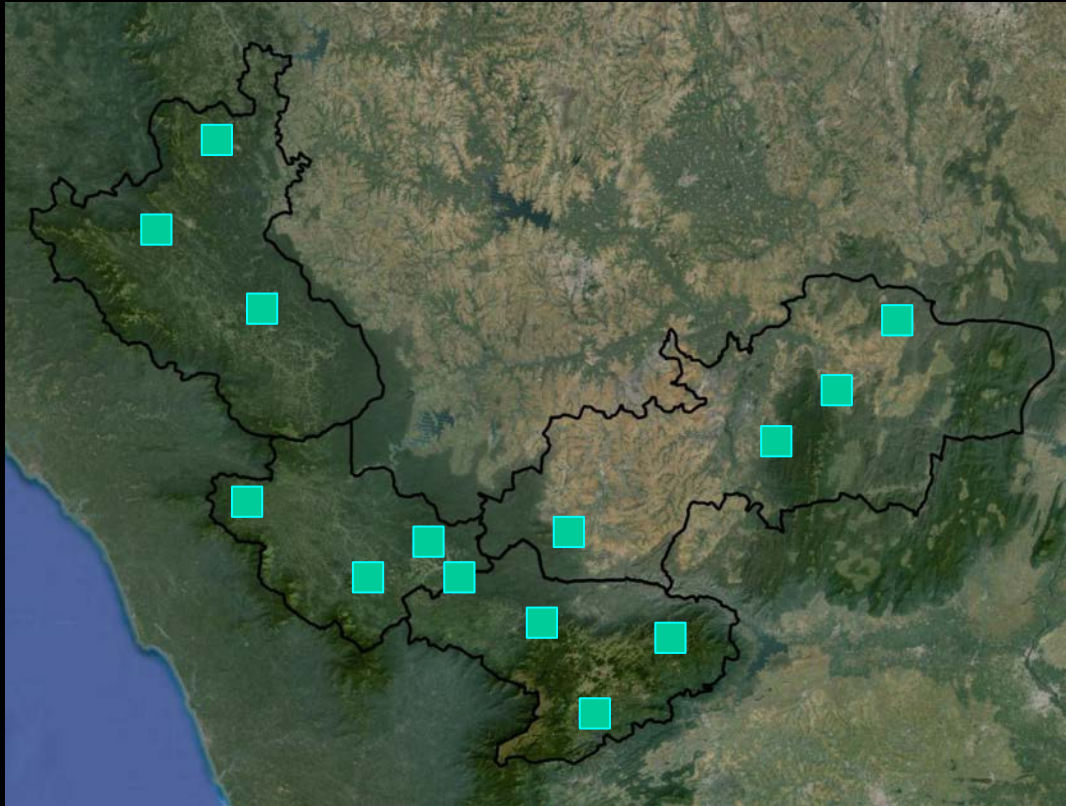


# The WGSL

Landscapes dominated by agroforestry systems, with forest fragments and large tracts of state controlled forests.



# WGSL Site Selection



- 14 candidate sites
- 4 sites chosen in discussion with local partners:
  - One site per district
  - Representative of forest/agroforestry dynamics
  - Presence of partners on site
  - Avoiding transboundary sites

# WGSL Sites



# Kodagu

- Forests, agroforestry and rice cultivation equally represented in the landscape.
- Complex, shade grown coffee agroforestry systems
- Small holdings (<2 ha) represent 58% of the holdings and 22% of the coffee area.
- Complex tenure system with over 39 land rights
- Human density 135 hab/km<sup>2</sup>, Tribal population 8,41%
- Female literacy rate: 72,26%





# Chamarajanagar

- Area of interest: Biligirirangana Temple (BRT) Hills
- Land sparing scenario: 52% of the area under protected area (including Tiger Reserves).
- Soliga tribal settlements claiming rights over forest land and forest resources.
- Density 200 hab/km<sup>2</sup>, Tribal population 11%
- Female literacy rate: 42,48 %



# Wayanad

- Highest human density: 380 hab/km<sup>2</sup>,
- Tribal population: 17,43%
- Female literacy rate: 80,72 %
- Landscape Mosaic with cash crops-based agroforestry systems: pepper, cardamom, coffee & tea.
- High proportion of Teak plantations in State controlled forests



# Nilgiris

- Population density: 300 hab/km<sup>2</sup>
- Tribal communities including Toda, Badaga, Kota, Irular and Kurumbas – 3,72% of the population
- Female literacy rate: 71,64
- Range of mountains with at least 24 peaks above 2,000 metres.
- Tea-dominated landscape, and diverse horticultural systems

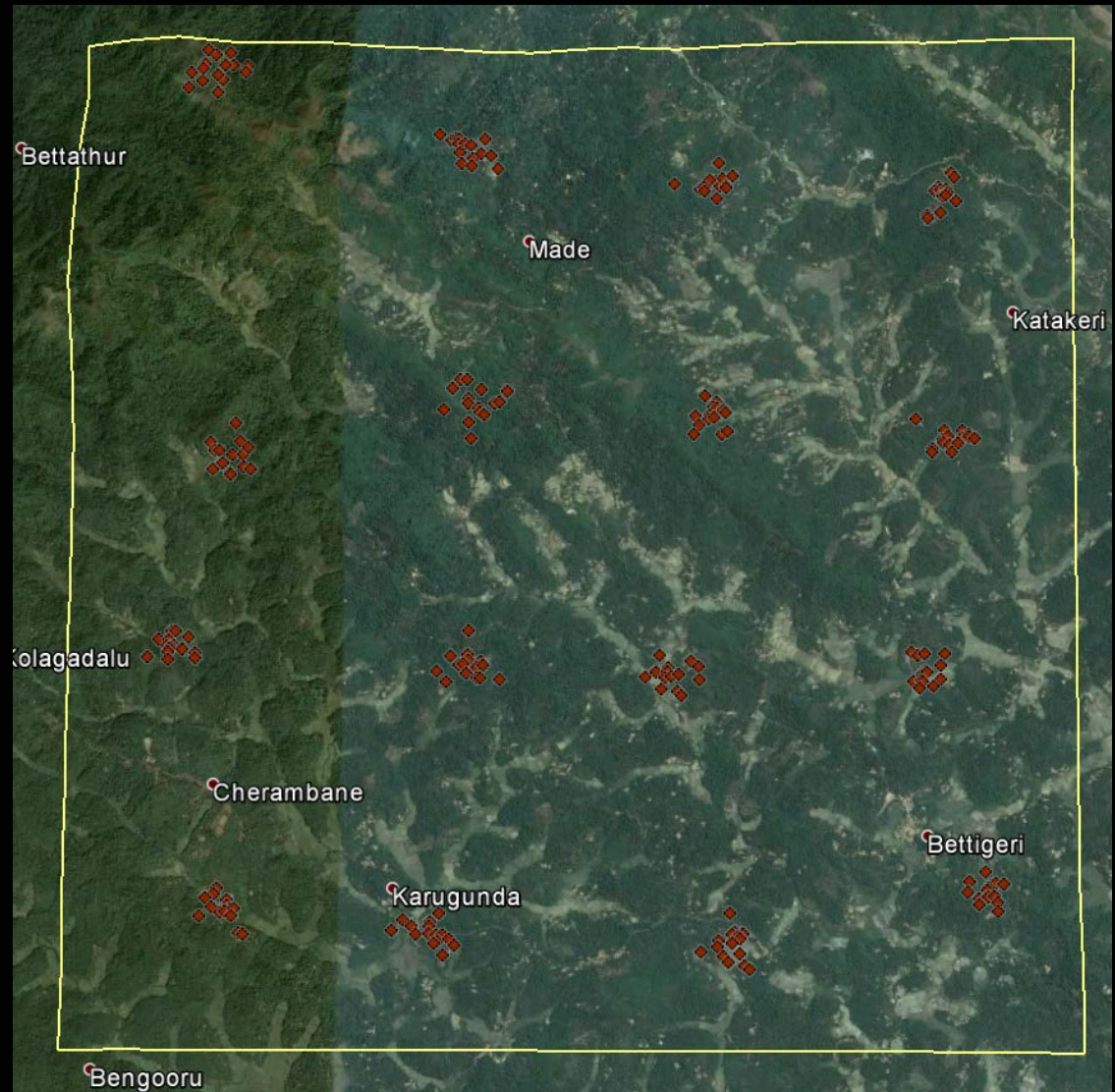


# WGSL Baseline – Village selection

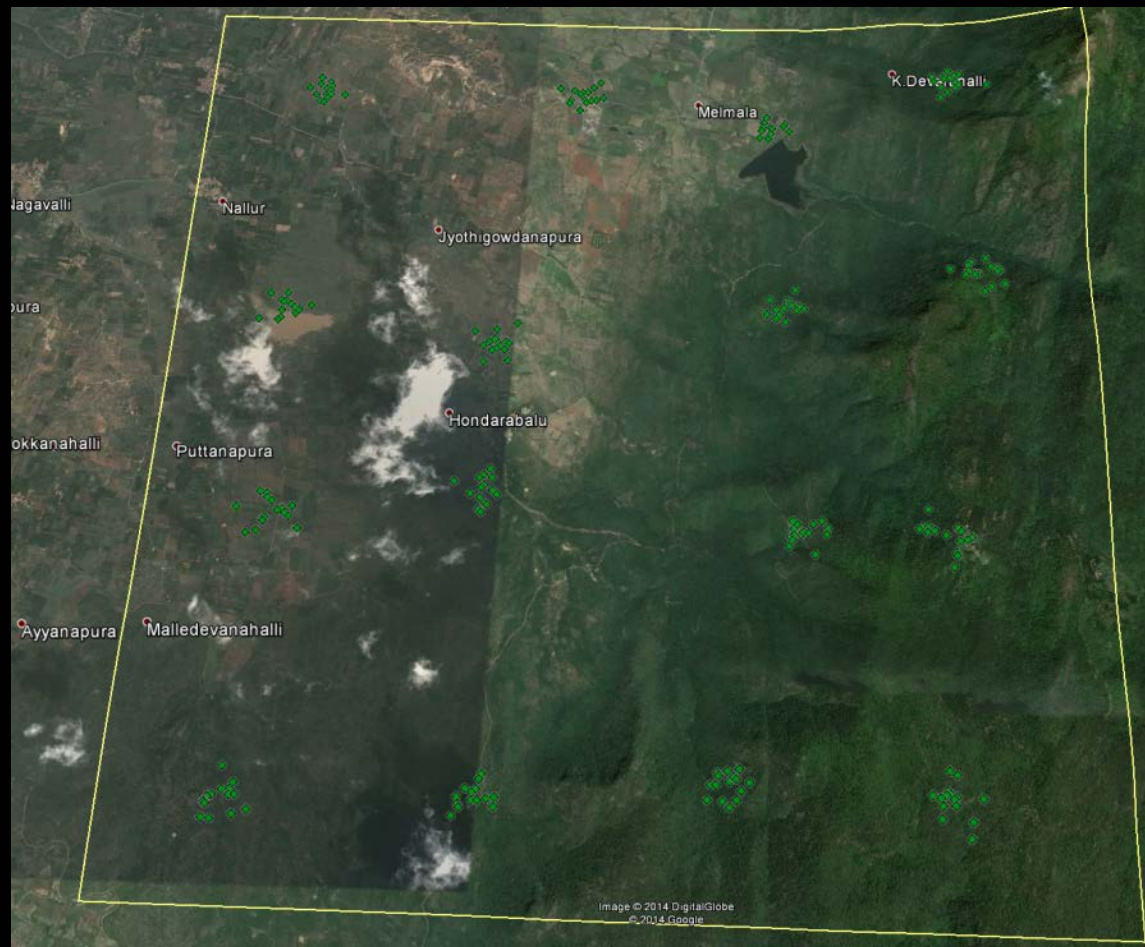
- Initial listing of villages with census data – 2011,
- Visit to Panchayat Offices, knowledge of partners
- Location of villages within or near the site
- Criteria for selection: Caste and Tribe composition



# Kodagu



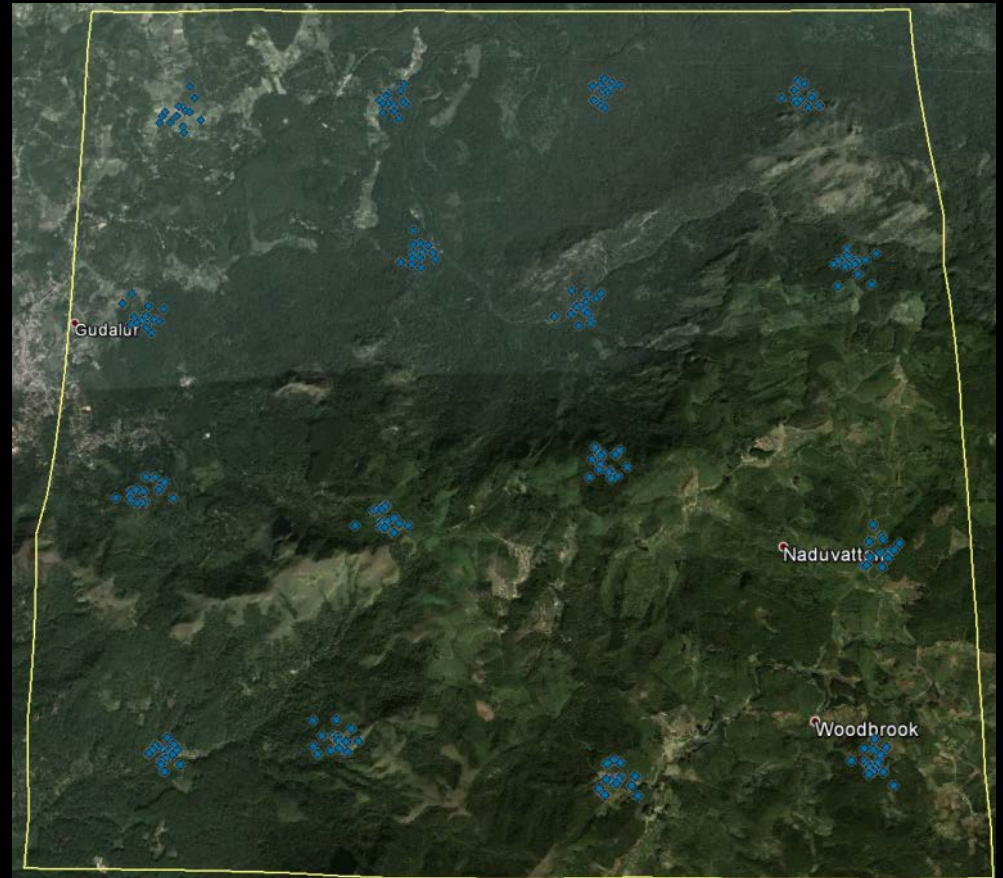
# Chamarajanagar



# Wayanad



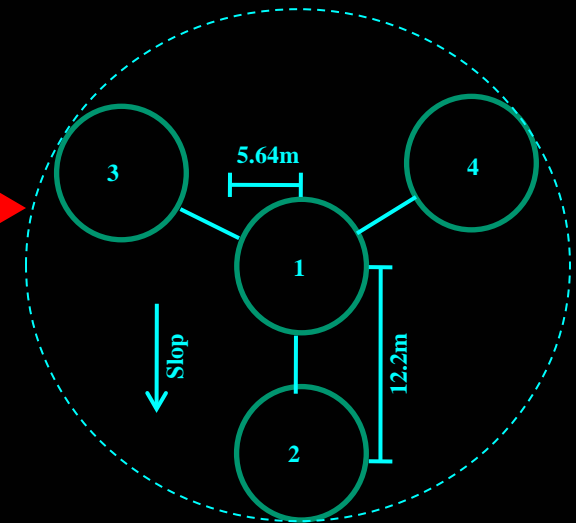
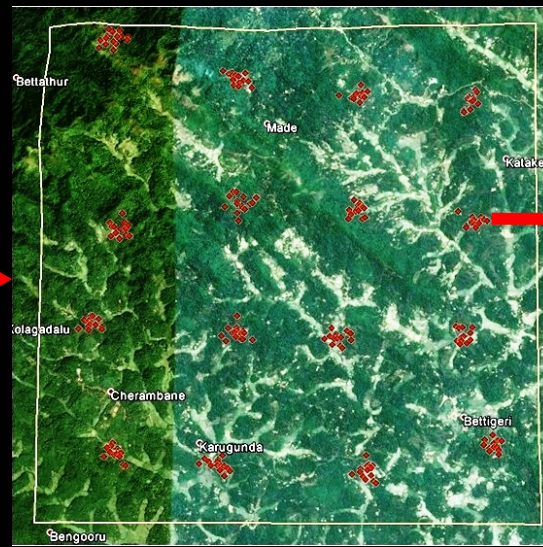
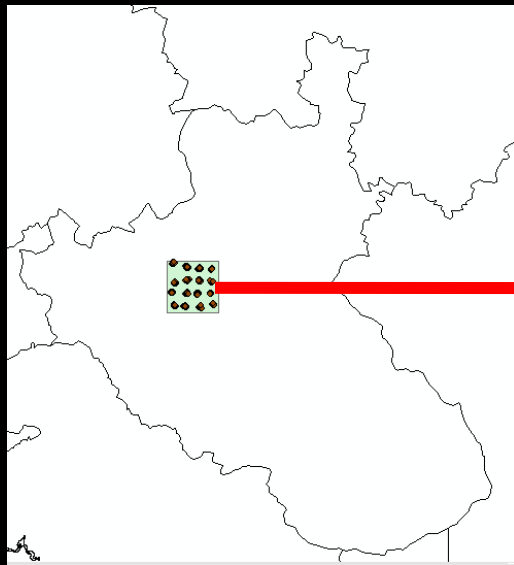
# Nilgiris





# LDSF PROGRESS – June 2014

- **Site name** : **Madikeri (Kodagu district)**
- **No. of Clusters** : **16 (15 Completed)**
- **Sample plots** : **160 (150 Completed)**
- **Total samples collected** : **Top: 150, Sub: 150, CM: 150**





**FALLOW LAND**



**PADDY FIELD**



**CARDAMOM**



**COFFEE AGROFOREST**

**Land use systems  
observed during  
LDSF  
(Kodagu site)**



**NATURAL FOREST**

## **IMPACT ON HABITAT**

Tree cutting

Alien vegetation

Weeding

Habitations

Fire





**LDSF TEAM  
IN THE FIELD**



# The Team

Methods  
group



SL Coord. 2014  
S. Tomar  
(ICRAF)



SL Coord. 2013  
C. Garcia  
(CIRAD)



VHHS Leader –  
S. Setty  
(ATREE)



LDSF Leader –  
G. Devagiri  
(UAHS,S)



IM Leader –  
PM. Aubert  
(AgroParisTech)



VHHS Team



LDSF Team