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 km², 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

Kodagu
Chamrajanagar
Wayanad
Nilgiris

National Parks, Wildlife Sanctuaries
Logged over Reserved Forests
Sacred Forests, Forest Fragments
Intensive Coffee Cultivation,
Tea Estates, Rice paddies
Shade Coffee, Home Gardens
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/km², 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/km², Tribal population 11%
- Female literacy rate: 42.48%
Wayanad

- Highest human density: 380 hab/km²,
- 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/km²
- 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
Land use systems observed during LDSF (Kodagu site)

Impact on Habitat

Tree cutting  Alien vegetation  Weeding  Habitations  Fire
LDSF TEAM
IN THE FIELD
The Team

- **SL Coord. 2013**
  - C.Garcia (CIRAD)

- **SL Coord. 2014**
  - S.Tomar (ICRAF)

- **VFHS Leader**
  - S.Setty (ATREE)

- **LDSF Leader**
  - G.Devagiri (UAHS,S)

- **IM Leader**
  - PM.Aubert (AgroParisTech)

**Methods group**