

# Brief introduction of TERI

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# The Energy and Resources Institute (TERI)

- Not-for-Profit Research Institute
- Established in 1974 by TATA Group of Companies
- Six Pillars of our research
  - Environmental Biotechnology
  - Energy
  - Sustainable Infrastructure
  - Water Waste and Natural Resources
  - Sustainable Agriculture
  - Climate and Air

# Natural Resources and Climate (NRC)

Provide scientific knowledge & solutions through evidences of air pollution, climate change and their impacts, by involving ecological process, technology, institutions and policy initiatives.

Spearheads research in providing innovative and resource efficient solutions for management of water resources, waste resources and bioresources

**Key focus areas:** Climate, Air, Water, Forestry & Biodiversity, Waste management

## Divisions under NRC Programme

1. Earth Science and Climate Change (ESCC)
2. Land Resources (LR)
3. Environment & Waste Management (EWM)
4. Water Resources (WR)

# Earth Science and Climate Change (ESCC) Division

## A. Center for Global Environment Research

**Vision & Focus:** *To enhance and improve the knowledge of different processes that lead to climate change, their impacts and vulnerability to different sectors and livelihoods and also to assess the adaptive policy making.*

**Thematic Areas:** Mitigation, Adaptation, Finance, and Cooling

## B. Centre for Environmental Studies (CES)

**Vision and focus:** To study the environmental dimensions of various economic activities and resource-use patterns and explore strategies to mitigate the adverse effects.

**Thematic Areas:** Air quality monitoring, Emission inventories, Air quality modelling, Impact assessments. Developing air quality management plans for urban and regional scales, Air pollution health linkage studies, Linking air pollution and climate change, Urban and rural indoor air quality, Awareness and sensitization

## C. Center for Climate Modelling

### Vision & Focus

**"To build climate modeling skills to improve understanding of regional variability and changes and their links to policy".**

**Focus:** *The group aspires to address the knowledge gaps in climate change science and develop better understanding of climate variability at various spatial and temporal scales in an effort to effectively link climate science to policy research.*

## Project verticals

### Research

- ✦ Air-Sea interaction and coupling under climate variability
- ✦ Diurnal variability of Indian summer monsoon rainfall
- ✦ Multi-temporal variability in climate and weather extremes over India
- ✦ Resource Efficiency and Circular Economy

### Services

- ✦ Climate projections at regional scale under IPCC scenarios.
- ✦ Climate Risk assessment specific to various sectors.
- ✦ Climate Impact assessment

### Outreach/Training

- ✦ Research schools
- ✦ Training workshops
- ✦ Stakeholder training sessions
- ✦ Climate Tool

# Land Resources Division

Centre for Biodiversity & Ecosystem Services (CBES)

Centre for Forest Mngmt. & Governance (CFMG)

Centre for Sustainable Land Management (CSLM)

## Carbon Finance

- Developing voluntary carbon market projects for **agroforestry plantations** in **Punjab, Gujarat and Uttar Pradesh**
- Developing voluntary carbon market projects for **4 Tiger Reserves** namely **Dudhwa**, Uttar Pradesh; **Pench**, Maharashtra; **Sunderbans**, West Bengal and **Periyar**, Kerala
- Developing voluntary carbon market project for **25 Van Panchayat's** in **Uttarakhand**

## Capacity Building

- Assessment of 5 pool of carbon stock of forest ecosystem for forest personnel
- Developing Foreign Module for IFS probationer's in Australia and Laos

## Valuation of Ecosystem Service

- Assess the Ecosystem Services of Rangelands & determine the cost of Rangeland degradation, deforestation & desertification in Saudi Arabia
- Assess the Ecosystem Services of Delhi Zoological Park and

State of Unity in Kevadiya, Gujarat (**Recently Completed**)

## Landscape Restoration

- Understanding the role of shifting cultivation for Sust. Devlp. in Northeast India
- Rehabilitation & Greening of Mines (Red Mud, Bauxite, Lignite, Limestone)

## Policy & Advocacy

- Development of Forest Governance Model in context of Community Forest Resource Rights and exploring linkages with Panchayati Raj Institutions
- Assessment of implementation of RFCTLARR Act, 2013 in Jharkhand, Odisha, Chhattisgarh, Assam & MP.

## Monitoring & Evaluation

- Haryana CAMPA Project, Odisha Forestry Sector Development Project, Watershed Management Projects in Uttarakhand and Himachal Pradesh



# Sustainable Buildings





# Green Rating for Integrated Habitat Assessment

Tool to facilitate design, construction, operation of a green building ,and in turn ....measure "greenness" of a building in India

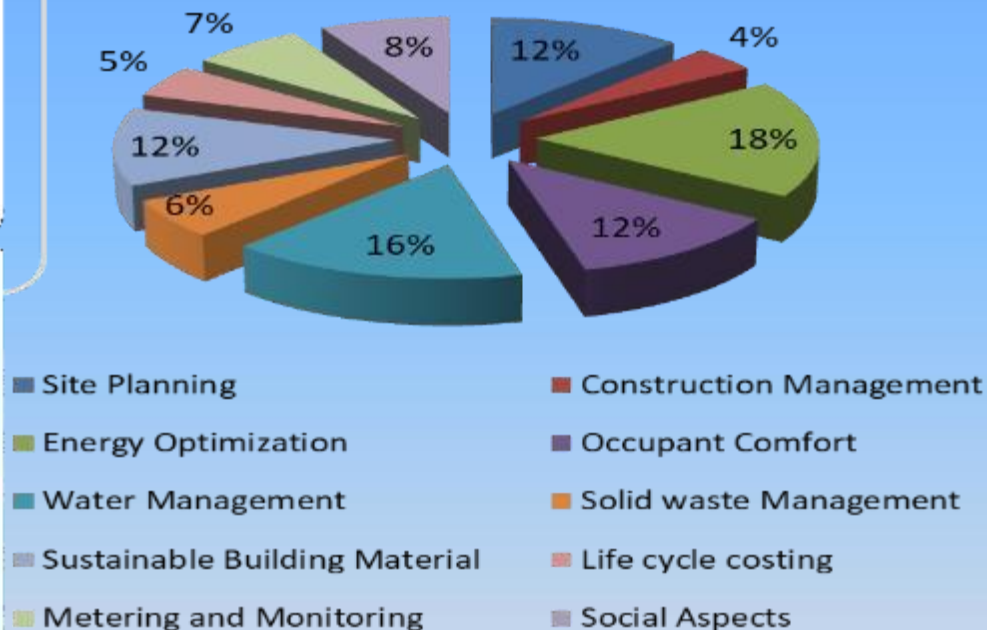


### Key Features of GRIHA rating

- Alignment with SDGs, INDC and GoI scheme and policies.
- Support projects during design, construction and operation phase.
- Sets performance benchmarks for key resources like energy, waste, water and transportation.
- Rating system is socially inclusive and talks about welfare of construction workers and service staff.
- Rates AC, non-AC as well as hybrid buildings.
- "cost-effective" strategies for making green buildings.
- Emphasizes on Integrated Design Approach towards green buildings.

GRIHA has been recognized as India's own green building rating system and part of mitigation strategy for combating climate change in INDIA's INDC submitted to UNFCCC.

### What gets measured gets managed.



GRIHA V. 2019 | 30 criteria – 100 points



# GRIHA



ENERGY



AGRICULTURE



ENVIRONMENT



HABITAT



RESOURCE SECURITY



CLIMATE



7 HEALTH & NUTRITION

## Mahindra-TERI COE



- Material Testing and Database Building
- Performance evaluation of opaque construction material
- Performance evaluation of Integrated day lighting systems
- Modeling of Sky
- Thermal Comfort Studies
- Visual Comfort Studies

## TERI-UTC COE for Energy Efficient Buildings



- Energy Audits of more than 60 Buildings in 5 climatic zones
- M&V and Implementation of EEMs
- Financial Mechanism
- Codes and standards implementation



# Transport and Urban Governance

Eco-cities, WRC

Transport and Urban Governance

## Urban Governance – Activities and Publications



ENERGY



AGRICULTURE



ENVIRONMENT



HABITAT



RESOURCE SECURITY



CLIMATE



HEALTH & NUTRITION

# EE / RE Projects : Implementation

**Forte**  
Capacity Building  
Technical Expertise  
EE/RE  
Implementation  
Advisory



SEWA : Retrofit of Falaj Pumping Station, Sharjah



Power Gasifier (650 kWp) - Amazonia Rice mill, Guyana



HAL – TERI CSR Initiative : 47 Public Schools installed with SRTPV systems 478 kWp



Energy Efficient Cook Stoves : Hinterland Schools

# Thank you!

