



CONCEPT NOTE

IYRP 2026 – Tamil Nadu Rangelands Initiative

Grass Guards Climate Monitor

Protecting Grasslands with Satellite Intelligence

Date: 30 May 2026, **Time:** 7:30 PM (IST),
Google Meet: <https://tinyurl.com/yc3d6nyb>

The International Year of Rangelands and Pastoralists (IYRP 2026) provides an important global opportunity to recognise the ecological, climatic, and socio-economic significance of rangelands and pastoral communities. In this context, the proposed online consultation and awareness meeting on the **Tamil Nadu Rangelands Initiative – Grass Guards Climate Monitor** seeks to bring together researchers, pastoral communities, students, environmental organisations, institutions, and local governance bodies to strengthen dialogue on rangeland conservation, climate resilience, and community-based ecological monitoring in Tamil Nadu. Rangelands, pasture lands, and dry grassland ecosystems are among the most ecologically valuable yet least recognised landscapes in Tamil Nadu. These ecosystems support livestock production, biodiversity conservation, groundwater recharge, pollinator networks, soil fertility, carbon sequestration, and the traditional livelihoods of pastoral and agro-pastoral communities. However, these landscapes are increasingly under pressure from land degradation, invasive species, erratic rainfall patterns, rising temperatures, industrial expansion, encroachment, and conversion into monoculture agriculture and plantations. Grasslands are also frequently misclassified as “wastelands,” resulting in ecological neglect and long-term degradation.

To address these challenges, the **Grass Guards Climate Monitor** has been developed as a community-oriented digital ecological monitoring platform designed specifically for Tamil Nadu’s rangeland ecosystems. The initiative combines satellite remote sensing, geospatial technologies, field observations, citizen participation, and climate analytics to create an accessible and scientifically grounded ecological monitoring system for grasslands and grazing landscapes.

The platform integrates Sentinel-2 imagery, NDVI vegetation analysis, Google Earth Engine processing, drought monitoring tools, Tamil-language ecological alerts, and panchayat-level ecological reporting systems to make environmental change visible, understandable, and actionable for local communities and institutions. GrassGuards seeks to democratise ecological information by translating complex satellite data into locally relevant climate and grazing insights.

The initiative introduces advanced geospatial monitoring approaches including:

- Vegetation health indices
- Drought and water stress indicators
- Soil moisture monitoring
- Biomass and grazing assessments
- Carbon stock estimation
- Rainfall anomaly analysis
- Climate resilience indicators

These tools are intended to support ecological restoration planning, sustainable grazing management, climate adaptation strategies, drought preparedness, and long-term conservation planning across Tamil Nadu's rangelands.

A major strength of the Grass Guards platform is its integration of multiple satellite and climate datasets including Sentinel-2, Sentinel-1 SAR, CHIRPS rainfall systems, MODIS temperature products, Landsat, HLS, GEDI, and GRACE groundwater monitoring datasets through Google Earth Engine cloud infrastructure. The platform has been designed as a multilingual, open-access ecological monitoring system accessible to volunteers, researchers, students, panchayat leaders, and environmental organisations.

The proposed IYRP 2026 consultation will function as a state-level dialogue and awareness platform with the following objectives:

Objectives

- Introduce the Tamil Nadu Rangelands Initiative and Grass Guards Climate Monitor
- Build public awareness on rangeland ecology and climate resilience
- Demonstrate satellite-based ecological and drought monitoring tools
- Promote citizen participation and community ecological monitoring
- Encourage collaboration among pastoralists, researchers, NGOs, academic institutions, and local governance bodies
- Explore opportunities for grassland restoration, carbon monitoring, and sustainable grazing systems
- Strengthen ecological data systems for long-term conservation planning in Tamil Nadu

The meeting will also highlight the importance of ecological indicators such as NDVI, drought index, soil moisture, biomass estimation, and carbon stock assessment in understanding landscape change and supporting adaptive grazing decisions. These monitoring systems can provide early warning signals for drought stress, vegetation decline, overgrazing risk, and ecological degradation while improving local climate resilience planning.

The initiative aligns closely with the broader goals of IYRP 2026 by reinforcing the recognition of rangelands as living ecosystems that are essential for biodiversity

conservation, climate adaptation, food systems, water security, and pastoral livelihoods. It also promotes ecological stewardship through participatory monitoring, youth engagement, ecological literacy, and open environmental information systems.

Expected Outcomes

- Increased awareness on rangeland conservation in Tamil Nadu
- Formation of collaborative networks for ecological monitoring and restoration
- Identification of pilot districts and community participation models
- Promotion of citizen science and youth engagement in ecological monitoring
- Strengthened dialogue on climate resilience and sustainable grazing systems
- Expansion of long-term ecological data systems for research, restoration, and policy support

Programme Schedule

About Grass Guards and Tamil Nadu
Rangelands Initiative: **Dr.P.Kabilan**
Pastoral Bio Economist, Thozhuvam,
Tamil Nadu, India

GrassGuards.org – Satellite Monitoring
Demonstration: **Mr.M.Manimaran**
Researcher – Grass Guards,
Tamil Nadu, India

- **Sharing Rangelands and Digitalisation Feedbacks and Inputs**

Concluding Remarks

Dr. Krishnaveni Muthiah
Director, Institute for Ocean Management
Professor of Hydrology and Water Resources,
Anna University, Tamil Nadu

Dr. P. Ravichandran
Former Professor, Department of Plant Science
Manonmaniam Sundaranar University, Tamil Nadu

Organised by

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Grass Guards
Climate Monitor



INTERNATIONAL YEAR OF
RANGELANDS AND
PASTORALISTS
2026



IYRP 2026 – TAMIL NADU RANGELANDS INITIATIVE

GRASS GUARDS CLIMATE MONITOR

Protecting Grasslands with Satellite Intelligence



DATE
30 MAY 2026



TIME
7:30 PM IST



PLATFORM
GOOGLE MEET

An online consultation and awareness meeting bringing together researchers, pastoral communities, students, institutions, NGOs and local governance bodies to strengthen dialogue on rangeland conservation, climate resilience and community-based ecological monitoring in Tamil Nadu.

KEY HIGHLIGHTS



Satellite-based monitoring
NDVI, drought, soil moisture, biomass, carbon stocks & rainfall analysis



Advanced geospatial tools
Sentinel-2, Sentinel-1 SAR, CHIRPS, MODIS, Landsat, GEDI, GRACE & Google Earth Engine



Community participation
Tamil alerts, panchayat reports & citizen science



For climate resilience
Sustainable grazing, restoration, early warning & long-term conservation

PROGRAMME SCHEDULE

- **About Grass Guards and Tamil Nadu Rangelands Initiative**
Dr. P. Kabilan
Pastoral Bio Economist, Thozhuvam
 - **GrassGuards.org – Satellite Monitoring Demonstration**
M. Manimaran
Researcher – Grass Guards
 - **Sharing Rangelands and Digitalisation Feedbacks and Inputs**
 - **Concluding Remarks**
Dr. Krishnaveni Muthiah
Director, Institute for Ocean Management
Professor of Hydrology and Water Resources
Anna University, Chennai
- Dr. P. Ravichandran**
Former Professor, Department of Plant Science
Manonmaniam Sundaranar University, Tamil Nadu



**JOIN US TO PROTECT
OUR RANGELANDS AND
BUILD A RESILIENT FUTURE!**

JOIN VIA GOOGLE MEET



<https://tinyurl.com/yc3dfnyb>

**ALL ARE
WELCOME!**

ORGANISED BY

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