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International Forum for Sustainable Asia and the Pacific (ISAP 2025)

Developing a sustainable socio economy through the restoration of Sacred groves of Malaiyali community in Kalrayan hills of South India

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BACKGROUND

- Conservation of nature has been considered a magnificent aspect of social ethos in several indigenous communities, leading to the emergence of Sacred groves
- Sacred groves
  - Natural habitat that a particular community protects due to religious beliefs, and is dedicated to a local deity
  - Rich biodiverse pockets and the best network situated case of biodiversity preservation
  - Socio-Ecological Production Landscape (SEPL), a repository for various ayurvedic medicines and enriched with replenishable resources

Kalrayan hills of South India

- **Kalrayan hills - Majestic range of mountains that separates the Kaveri and Palar river basins in southern India**
- **Cover an area of approximately 1095 Km^2, are made up of three spectacular ranges: the Pachaimalai, Javadi, and Shevaroy ranges, each of which is between 2000 and 3000 feet tall lush with biodiversity**

Malaiyali community and their sacred groves

- **Malaiyalis - Tribal community living in the Kalrayan hills are called Periya (Big) Malaiyali or the Kanchimandalam Malaiyalis**

- **The Malaiyali people are farmers and use the plants available in their surroundings and deep forests for food, medicines, various economic uses viz., mat, net and rope making, construction purposes and for hedge**

- **There are sacred groves of different deities in the Kalrayan hills, worshipped by the Malaiyali tribal community**

- **These sacred groves are SELPs aiding the livelihood of the community**

Malaiyali people of Kalrayan hills

Threats on sacred groves and biodiversity

COAL 1, FOREST 0

An Indian mining conglomerate is eating up a sacred forest grove

Sacred groves on the decline, reveals study

> *Sacred groves are the repositories of many medicinal plants and herbs, and their thinning is a cause for alarm.*

Rapid urbanisation, change in style of worship threaten 'devara kaadus'

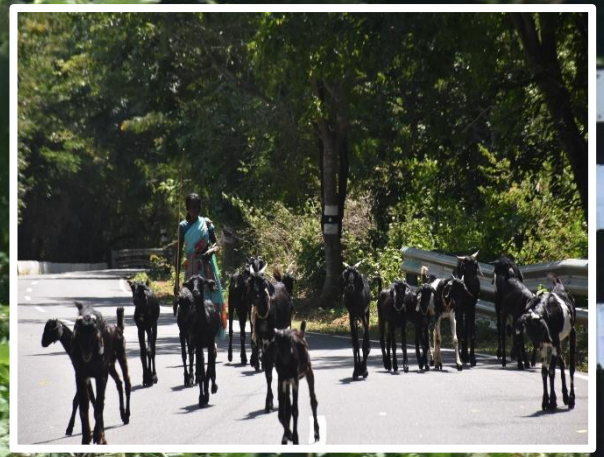
THE TIMES OF INDIA

Status of sacred groves in Kalrayan Hills

- On the verge of disruption due to unhindered human interference for land, wood, and many other resources
- Encroachment and conversion of sacred groves into agricultural land, and other construction activities
- Abandonment of sacred groves as the younger generations are relocating to cities
- Lack of legal policies and community participation for the protection and conservation of biodiversity

Status of Malaiyali communities in Kalrayan Hills

- Undeveloped scheduled tribal groups
- The basic amenities like road, communication, sanitation etc, are limited in Kalrayan hills
- Low education rates and poor socio-economic status



AIM

- ✓ Improving the **community resilience and conservation of threatened flora** **through the restoration of Sacred groves of Malaiyali community in Kalrayan hills of South India**
- ✓ Evaluating nexus interactions through the community led area-based conservation approach.

The major goal of the project is to conserve and restore the exploited sacred groves in cooperation with local community for a sustainable socio-economy

SPECIFIC OBJECTIVES

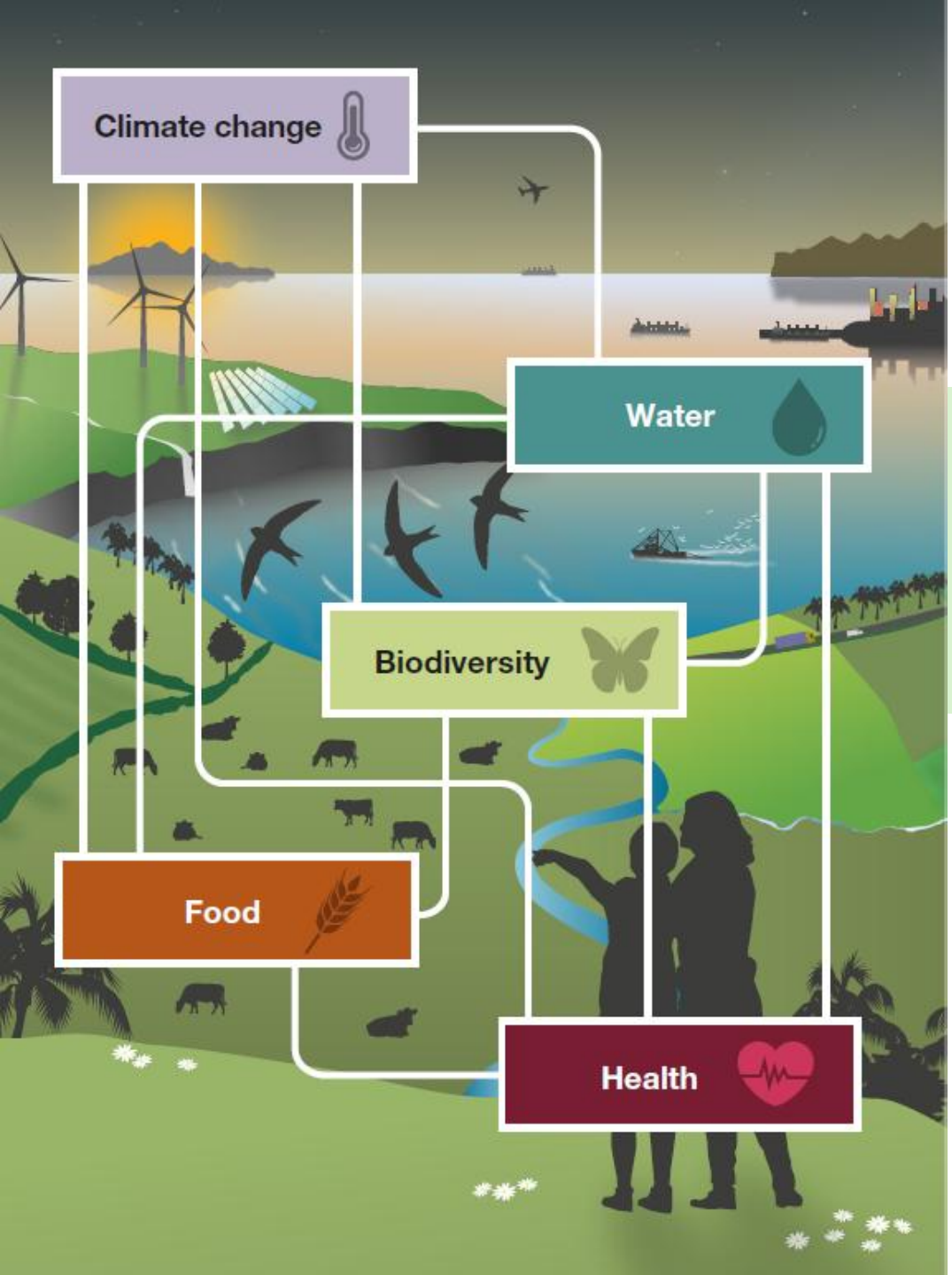
I. To map and document the threatened flora particularly, medicinal plants and the recognition of ethnopharmacology present in the Malaiyali Sacred Groves in Kalrayan hills

II. To conserve and protect sacred grove, *Sthala-vrikshas* in Malaiyali Sacred Groves of Kalrayan hills by studying the conservation practices followed by local community

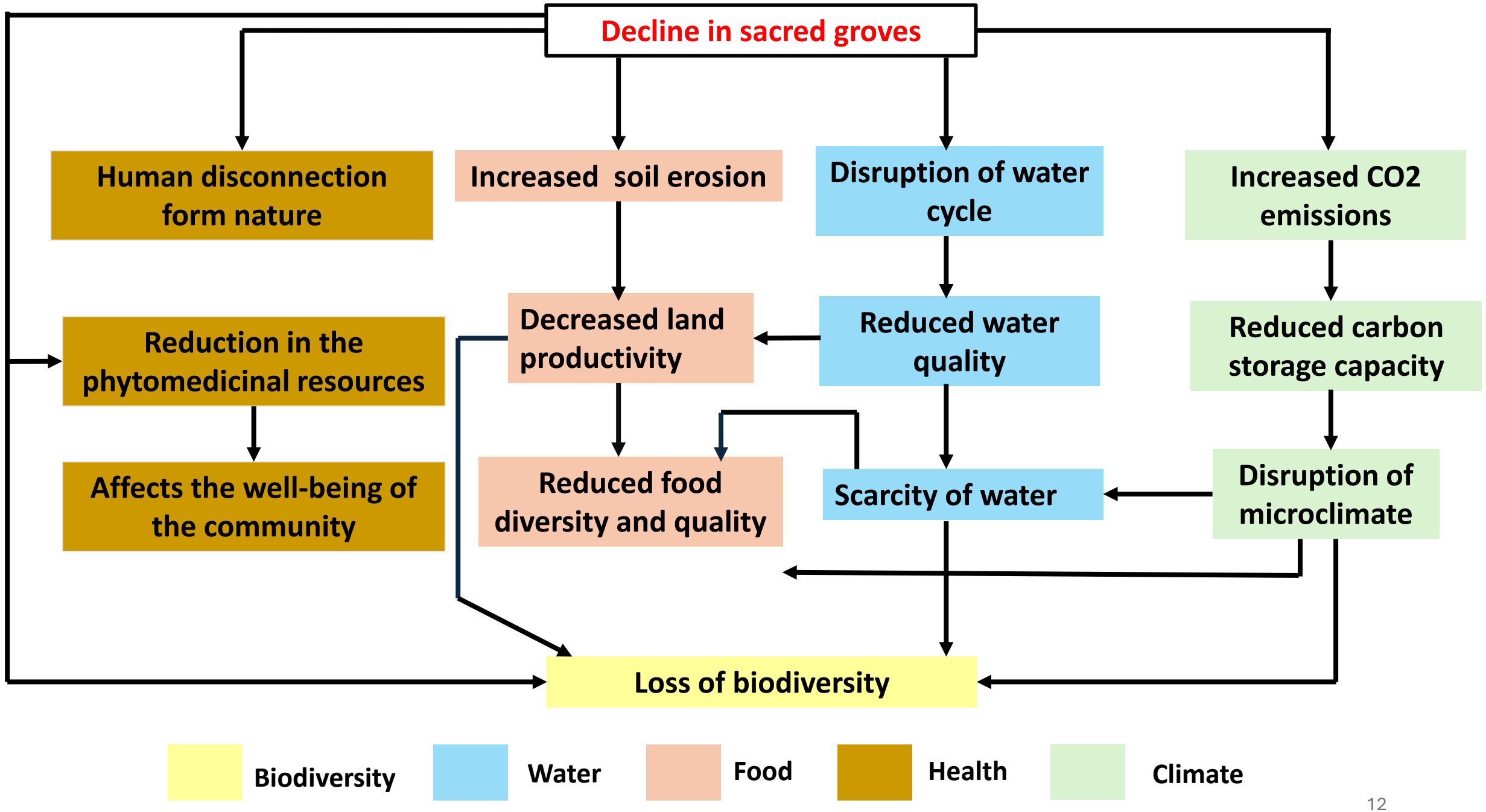
III. To establish *in vitro* conservation protocols of priority threatened plants including Sthala-vrikshas as a model of integration of traditional ecological knowledge and modern science

IV. To restore the threatened plants in the form of garden called '*Vrikshavalli*' and enhance the awareness of sustainable socio-economy in sacred groves in collaboration with the Malaiyali community of Kalrayan hills

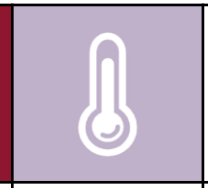
V. To prepare modules for the conservation of biodiversity in sacred groves

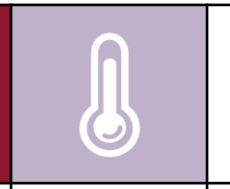


Cascading Negative Effects on Nexus Elements due to the Decline of Sacred Groves


Decline in sacred groves
Human disconnection form nature
Increased soil erosion
Disruption of water cycle
Increased CO2 emissions
Reduction in the phytomedicinal resources
Decreased land productivity
Reduced water quality
Reduced carbon storage capacity
Affects the well-being of the community
Reduced food diversity and quality
Scarcity of water
Disruption of microclimate
Loss of biodiversity
Biodiversity
Water
Food
Health
Climate

Nexus response options covered by this project

Response action							Objectives
B01	Area-based conservation						IV
B05	Forest landscape restoration						IV
B09	Integrated landscape and seascape approaches						I,II
B10	Rights-based approaches						I, II, IV

Response action							Objectives
B14	Reconnecting people with nature						I, II, IV
F16	Access to natural resources and land						IV
H04	Sustainable use of medicinal plants						III, IV
H10	Forest conservation for health						III, IV
C12	Forest-based practices to address climate change						III, IV

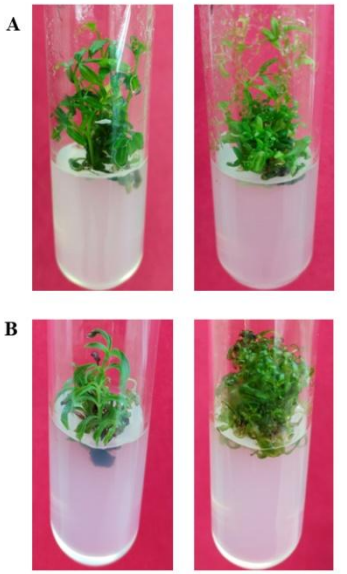
 ≥ 2.5  ≥ 1.5 and <2.5  ≥ 0 and <1.5  Negative impact

Included Nexus governance approaches

(a) integrative, holistic and transdisciplinary framings of problems and solutions;

(d) enhanced mechanisms and processes for collaboration and coordination across scales and sectors; and

(e) adaptive, reflexive and experimental approaches to learn from successes and to scale these solutions



I Mapping and documentation of threatened medicinal plant diversity in sacred groves

A) To identify and document the threatened medicinal plant diversity in sacred groves of the Malaiyali community in Kalrayan Hills

- A **series of seasonal field visits** were conducted across multiple experimental sites in Kalrayan hills
- **Traditional healers, local botanists, and community elders** were actively engaged in species identification and knowledge validation, integrating indigenous ecological knowledge with scientific taxonomy.
- **GPS-based geospatial mapping** was utilized to record the spatial distribution of key medicinal plant species, facilitating the identification of biodiversity hotspots and habitat specific associations.
- A **detailed inventory of threatened medicinal plants was compiled**, with emphasis on species critical to the Malaiyali community's traditional healing practices and livelihoods
- **Herbarium sheets were prepared for the collected samples**, with detailed labelling that included the scientific name, collection data, location and habitat description

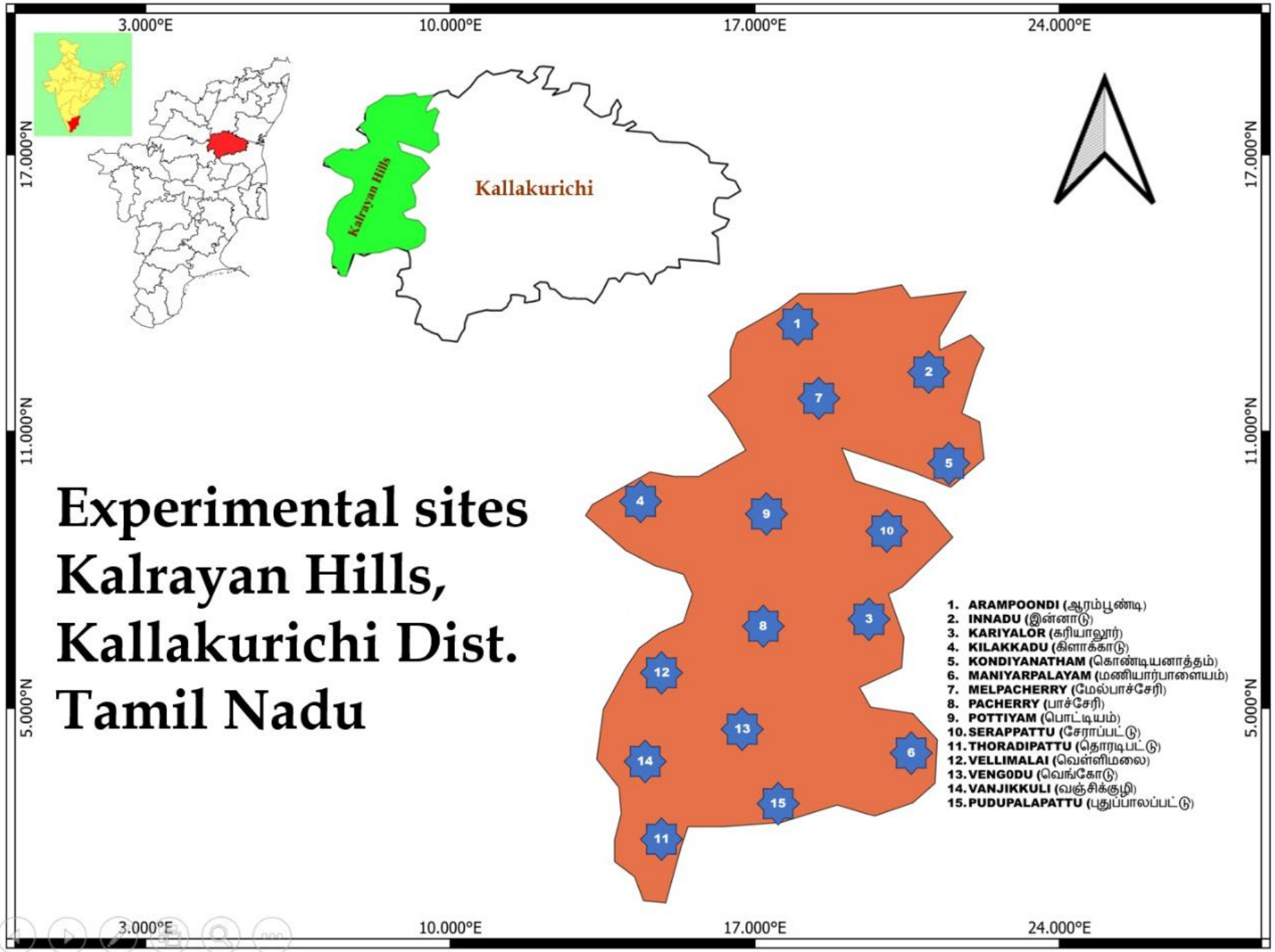


Fig 1 - Experimental sites in Kalrayan Hills, Kallakurichi district, Tamil Nadu . Area of project site: 63000 hectares.

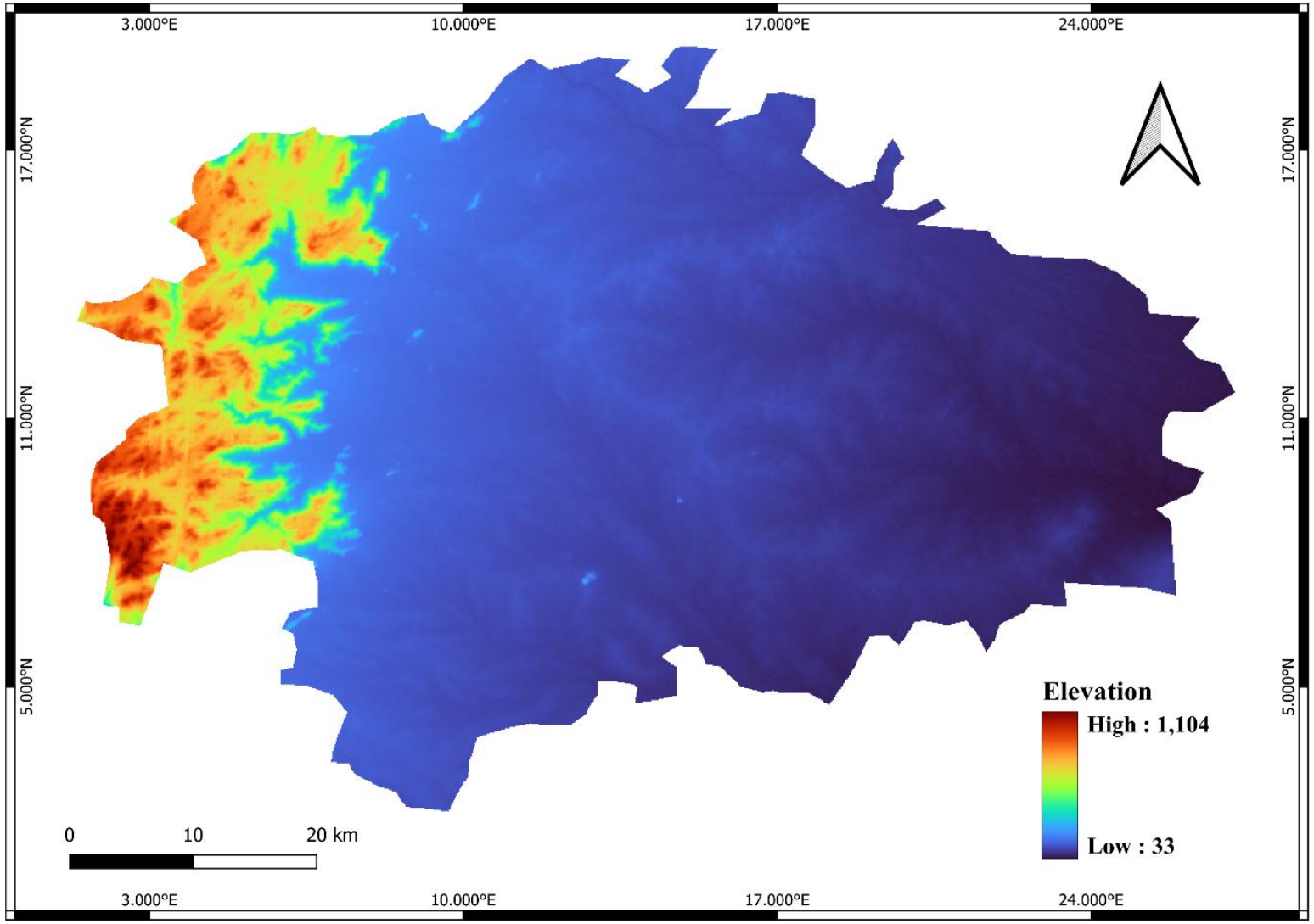


Fig 2 - Elevation and Topography of Kalrayan Hills, Kallakurichi District, Tamil Nadu

Illustrates the topographic variation within the Kalrayan Hills of Kallakurichi District, with elevations ranging from 33 meters (depicted in blue) to 1,104 meters (shown in red). The western region exhibits steep elevations, while the eastern terrain is relatively lower. These variations significantly influence microclimatic conditions, soil types, and the distribution of vegetation, including the medicinal plants under study.

Table 1: List of documented plants with medicinal uses as reported by local communities of sacred groves

Sacred groves	Latitude and longitude	Plant species	Vernacular name	Family	Habit	Medicinal purpose
Vellimalai Sivan Temple	11.800744°N 78.711484°E	*Abutilon indicum* (L.) Sweet	Thutthi	Malvaceae	Herb	Laxative, and anti-diabetic activity
		Barleria buxifolia L.	Rosemullipppoondu	Acanthaceae	Shrub	To treat diabetes, respiratory diseases and anaemia
		Calotropis gigantea (Ait.) Br.	Erukku	Asclepiadaceae	Shrub	Skin, Respiratory and Circulatory disorders
		Coccinia grandis L.	Ivy gourd	Cucurbitaceae	Climber	To reduce hypertension and abscess
		Jatropha gossypifolia L.	Aatalai	Euphorbiaceae	Shrub	Anti-diarrheal and anti-inflammatory activity
		Tribulus terrestris	Palleru-mullu	Zygophyllaceae	Small herb	Expectorant, anticancer and antidote

Aalanur Perumal Temple	**11.975506°N 78.750876°E**	*Acanthus ilicifolius* L.	Kaludaimulli	Acanthaceae	Herb
		Achyranthes aspera L.	Shiru-Kadaladi, Nayuruvi	Amaranthaceae	Herb
		Aerva lanata (L.) Juss. exSchult.	Sirru -Pulay–Vayr	Amaranthaceae	Perennial herb
		Amaranthus spinosus L.	Kantaili chaulai	Amaranthaceae	Subshrub
		Artocarpus heterophyllus	Pala	Moraceae	Tree
		Boerhavia coulteri (Hook.f.) S.Wats.	Punarnava	Nyctaginaceae	Herb
		Bougainvillea glabra Choisy.	Kakitha Poo	Nyctaginaceae	Climping Shrub
		Cascabela thevetia (L.) Lippold	Thangaarali	Apocynaceae	Shrub
		Dipsacus inermis Wall.	Phulee	Dipsacaceae	Perennial herb
		Hypericum elodeoides Choisy	Basanti	Hypericacea	Shrub
		Ziziphus oenopolia	Chooraimullu	Rhamnaceae	Thorny shrub


HERBARIUM SHEET
School of Bio Sciences and Technology
Vellore Institute of Technology, Vellore
No: VITCS56-1 Date: 22/09/2024
Botanical Name: Senna auriculata L.
Vernacular Name: Aavaram
Family : Fabaceae
Order : Fabales
Habitat : Herb
Place of collection: Kalrayan hills msl:
Collected by : Dr. C.Rajasekaran
Identified by : Dr. C.Rajasekaran
Comments : Small evergreen shrub native to India and Sri Lanka, widely used in traditional Ayurvedic medicine, primarily for its bark which is rich in tannins and used as an astringent.


HERBARIUM SHEET
School of Bio Sciences and Technology
Vellore Institute of Technology, Vellore
No: VITCS55-1 Date: 22/09/2024
Botanical Name: Oldenlandia umbellata L.
Vernacular Name: Chaya ver
Family : Rubiaceae
Order : Gentianales
Habitat : Herb
Place of collection: Kalrayan hills msl:
Collected by : Dr. R. Siva
Identified by : Dr. R. Siva
Comments : A stiff herb, anuual; stems more or less woody at the base. Leaves sessile, often fascicled, linear to lanceolate, acute. Flowers lilac, heterostylous. Capsule 2 mm across, ovoid to globose

B)Assessment of the conservation status and threats to the sacred groves

- Apply IUCN Red List categories and criteria for species assessment.
- Evaluation of the habitat degradation levels and human-induced pressures on the degradation of plant species in the study area through discussions with local communities

Pterolobium hexapetalum (Roth)
(Caesalpiniaceae)
White brasiletto climber

- **Family:** Fabaceae
- **Local Name:** Indian Redwing; Adivi Boda; Bada bakka (Kannada); Karindu, Pulindu (Tamil); Korintha, Pariki (Telugu); Endam (Malayalam)
- **Field spot character:** Large, spiny, scrambling shrub or climber with bipinnate leaves, bright red winged seed pods, and small creamy-white flowers in panicles
- **IUCN conservation status:** Not evaluated
- **DAO conservation status:** Not assessed
- **Reason for the threat:** Habitat destruction, deforestation, overgrazing, and land-use changes
- **Priority level & Recommended Action:** Medium to High priority; recommended actions include habitat conservation, restoration efforts, legal protection, and awareness programs to prevent further degradation.

Hildegardia populifolia (Roxb.) Schott & Endl.
(Malvaceae)
Galibuda

- **Family:** Malvaceae
- **Local Name:** Malaipuvarasu (Tamil)
- **Field spot character:** Deciduous tree upto 20 meters tall; lobed leaves; panicles of red sepals without petals; produces both male and bisexual flowers.
- **IUCN conservation status:** Critically Endangered (CR)
- **DAO conservation status:** Not assessed
- **Reason for the threat:** Habitat loss due to deforestation and limited distribution; approximately 20 trees are known to exist on the eastern slopes of the Kalrayan Hills.
- **Priority level & Recommended Action:** High priority; recommended actions include habitat protection, reforestation, ex-situ conservation, and community engagement to prevent further decline.

Rubia cordifolia L.
(Rubiaceae)
Indian Madder

- **Family:** Rubiaceae
- **Local Name:** Indian madder, Manjistha.
- **Field spot character:** Perennial, climbing herb, stems are slender, rough, and often with tiny hooks; leaves are in whorls of 4-6, ovate to lanceolate, with rough surfaces; small, greenish or yellowish flowers in clusters and reddish purple roots used as dye.
- **IUCN conservation status:** Regionally threatened
- **DAO conservation status:** Considered threatened in certain states of India due to high medicinal demand.
- **Reason for the threat:** Overharvesting for medicinal use (roots used extensively in Ayurveda) and habitat loss due to deforestation and agricultural expansion.
- **Priority level:** Medium to High
- **Recommended Action:** Conservation through cultivation, sustainable harvesting practices, awareness and training for local communities, in-situ conservation in natural habitats and forest areas and ex-situ conservation through seed banks.

Santalum album L.
(Santalaceae)
Sandanam

- **Family:** Santalaceae
- **Local Name:** Sandalwood, Chandan, Gandha, Santhanam
- **Field spot character:** Small to medium sized evergreen tree, greying bark, reddish-brown inside, aromatic wood and leaves.
- **IUCN conservation status:** Vulnerable
- **DAO conservation status:** Typically classified as Endangered or Threatened at the national or regional levels.
- **Reason for the threat:** Over-exploitation for valuable heartwood and oil, illegal logging and smuggling, habitat destruction and fragmentation and poor natural regeneration.
- **Priority level:** High
- **Recommended Action:** Strict enforcement of conservation laws and anti-smuggling operations, promotion of agroforestry models involving sandalwood, incentives for private cultivation and sustainable harvesting, In-situ and ex-situ conservation programs.

Fig. 3. Discussions with the community to gather qualitative data on the threats faced by medicinal flora in sacred groves

Key drivers of population decline **include habitat degradation, land-use changes, and unsustainable harvesting practices**

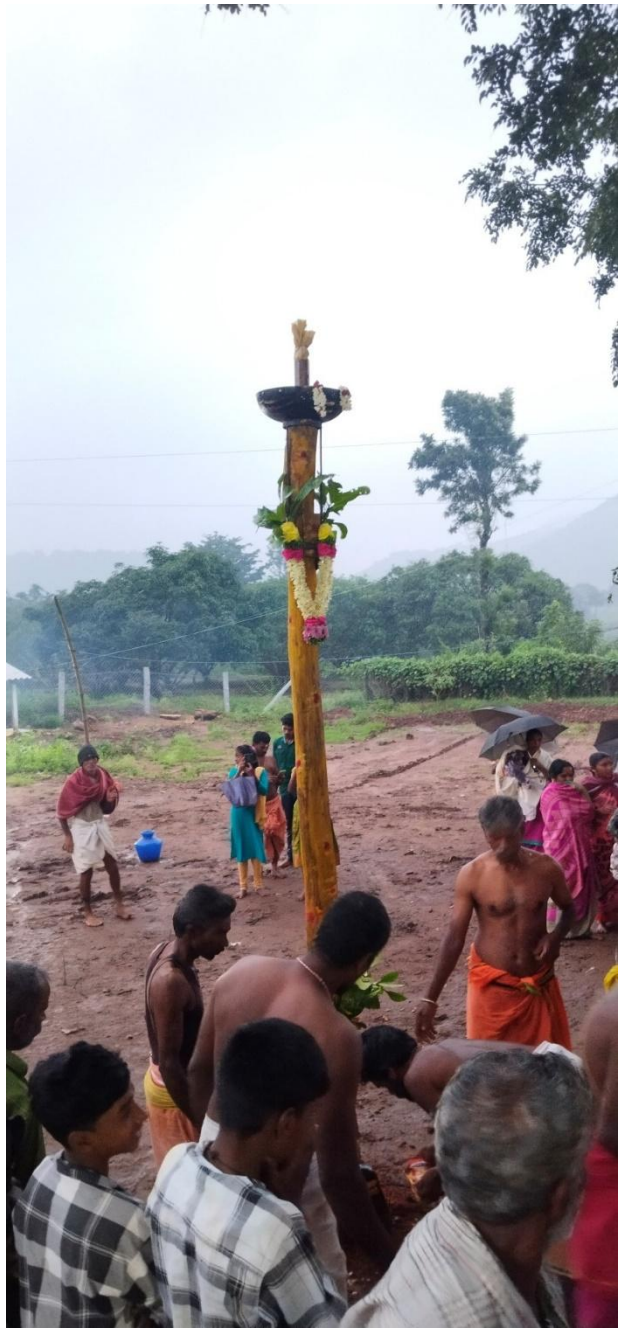
A **substantial proportion of the medicinal plant species surveyed fall under the "Endangered" (EN) and "Vulnerable" (VU) categories**, indicating significant conservation concerns

These results align with prior studies in similar ecosystems, **reinforcing the growing vulnerability of medicinal flora due to a combination of anthropogenic and environmental pressures**

II Documentation of conservation practices for the protection of sacred groves in the Malaiyali community

A) Documentation of traditional rituals for ethno-conservation

- Participatory Rural Appraisals (PRA) are conducted with local elders, spiritual leaders, and community members who possess knowledge of the rituals
- Focus group discussions were organized to facilitate collective validation of ritual practices
- By recording the oral histories and ceremonial practices, the study aims to preserve the intangible cultural heritage of the Malaiyali community while highlighting the role of ritual in biodiversity conservation.



- **Rituals ranged from seasonal offerings** during the onset of monsoon to life cycle ceremonies and worship of forest deities.
- **The deity are often believed to reside within a particular tree or natural feature**.
- The visual documentation of these rituals underscores the **deep-rooted connection between traditional religious practices and nature**
- Oral histories indicated that **traditional management of sacred groves has remained largely intact over generations, with elders and temple caretakers serving as custodians of ecological wisdom**
- The **younger generations showed declining interest**, indicating a need for documentation and intergenerational transmission.

B) Survey on Traditional Ethnobotanical Knowledge and Conservation Practices in Sacred Groves of Kalrayan Hills

Semi-structured Interviews

Interviews were conducted with elders, temple caretakers, farmers, and conservation practitioners to document the Sacred species and their cultural significance, traditional conservation taboos and ecological beliefs and perceived threats to sacred groves and expectations from the government.

Key Survey Questions Used

- ✓ How important are sacred groves in your community's cultural and religious practices? (Scale: Not important – Extremely important)
- ✓ What resources do you and your family depend on from the sacred groves? (e.g., Timber, Medicinal Plants, Honey, Fodder)
- ✓ Have you observed changes in the sacred grove ecosystem over the past 10 years? If yes, describe.

- ✓ Have there been additional changes during the pandemic (last 5 years)? How do they compare to previous changes?
- ✓ What threats do you perceive to the preservation of sacred groves? *(Encroachment, Climate Change, Urbanization, Deforestation, Lack of Government Protection)*
- ✓ Are there any community-led initiatives to protect, conserve, or develop sacred groves? If yes, please describe.

- ✓ Do you feel that government policies support the conservation of sacred groves? Why or why not?
- ✓ Could ecotourism be a sustainable source of income while preserving sacred groves?
- ✓ How do younger generations perceive the importance of sacred groves compared to older generations?
- ✓ How frequently do you visit sacred groves for cultural or religious purposes? *(Daily, Weekly, Monthly, Occasionally, Never)*
- ✓ Is it possible to reconstruct a sacred grove in another location? If no, why?
- ✓ Have you witnessed any illegal activities (e.g., logging, hunting) in the groves? If yes, specify the activity and frequency ?

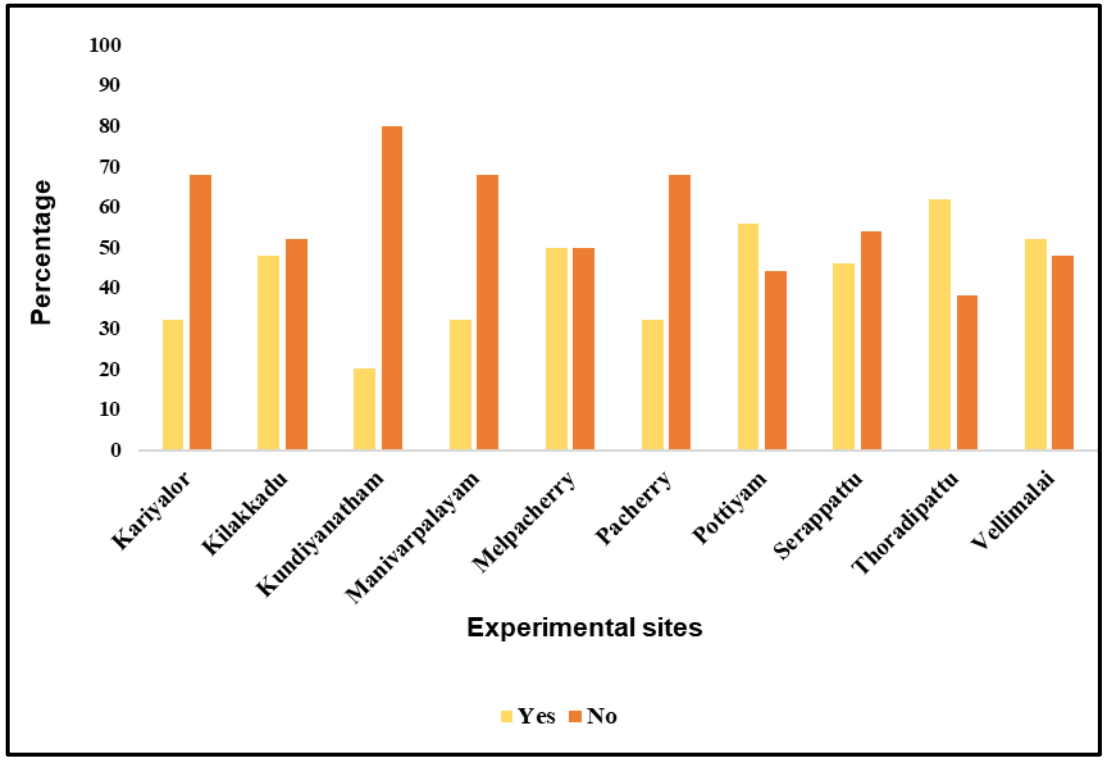


Fig. 4. Highlights variations in community dependence on sacred groves for livelihood across different villages.

Thoradipattu has the highest reliance (62%), indicating that a significant portion of the community depends on sacred groves for resources such as medicinal plants, firewood, or non-timber forest products.

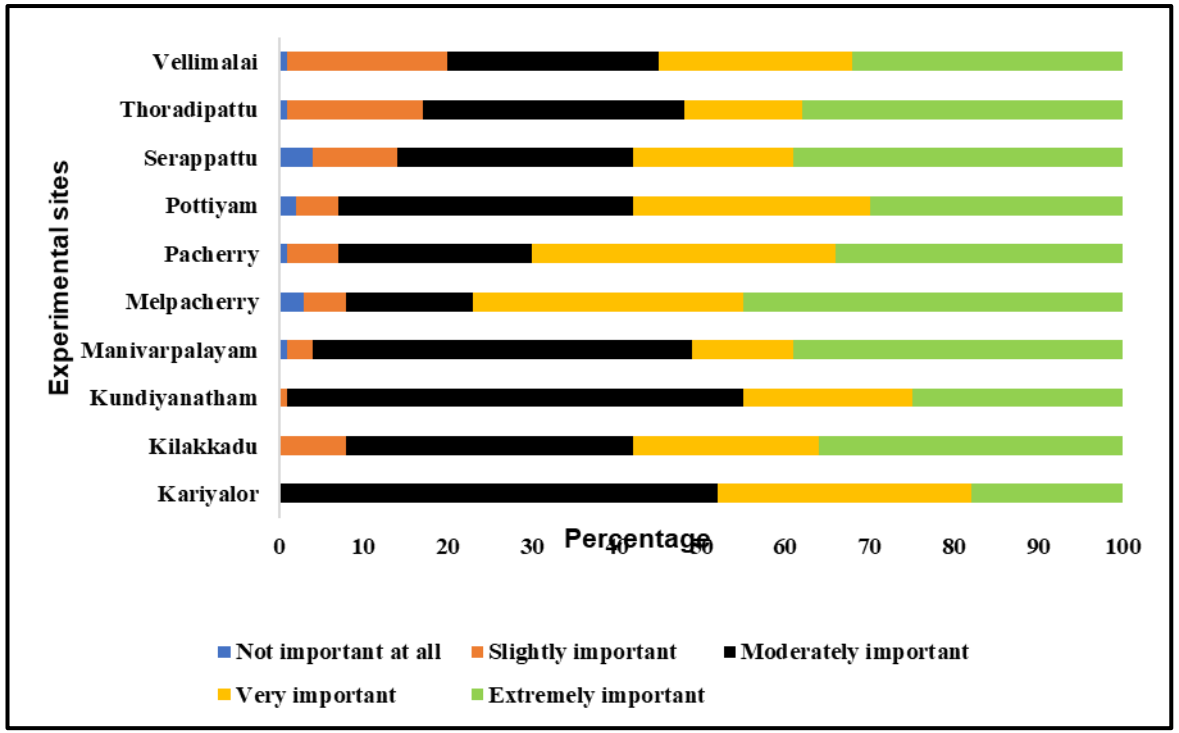


Fig. 5. Importance of sacred groves from villagers' point of view across different sites of Kalrayan Hills

Melpacherry village gave the highest importance to sacred grove

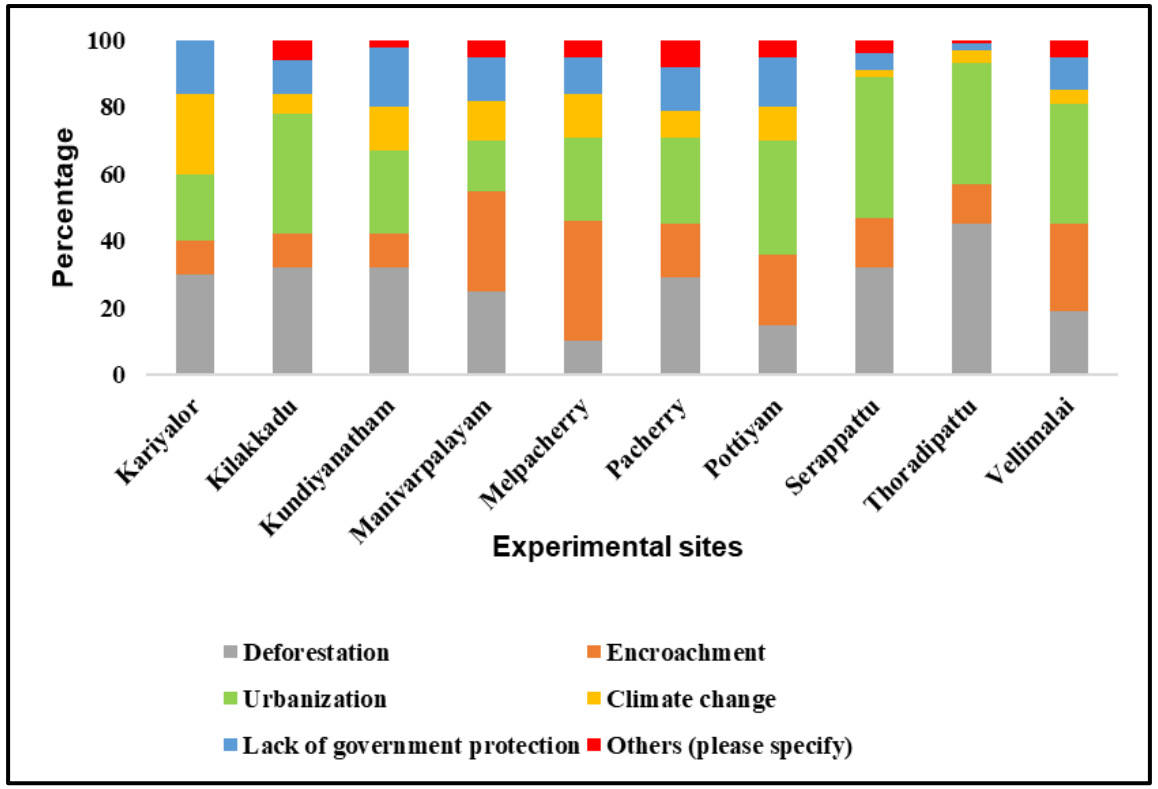


Fig. 6. Threats to the Preservation of Sacred Groves across different sites of Kalrayan Hills**. High urbanization and encroachment levels found as major threats.**

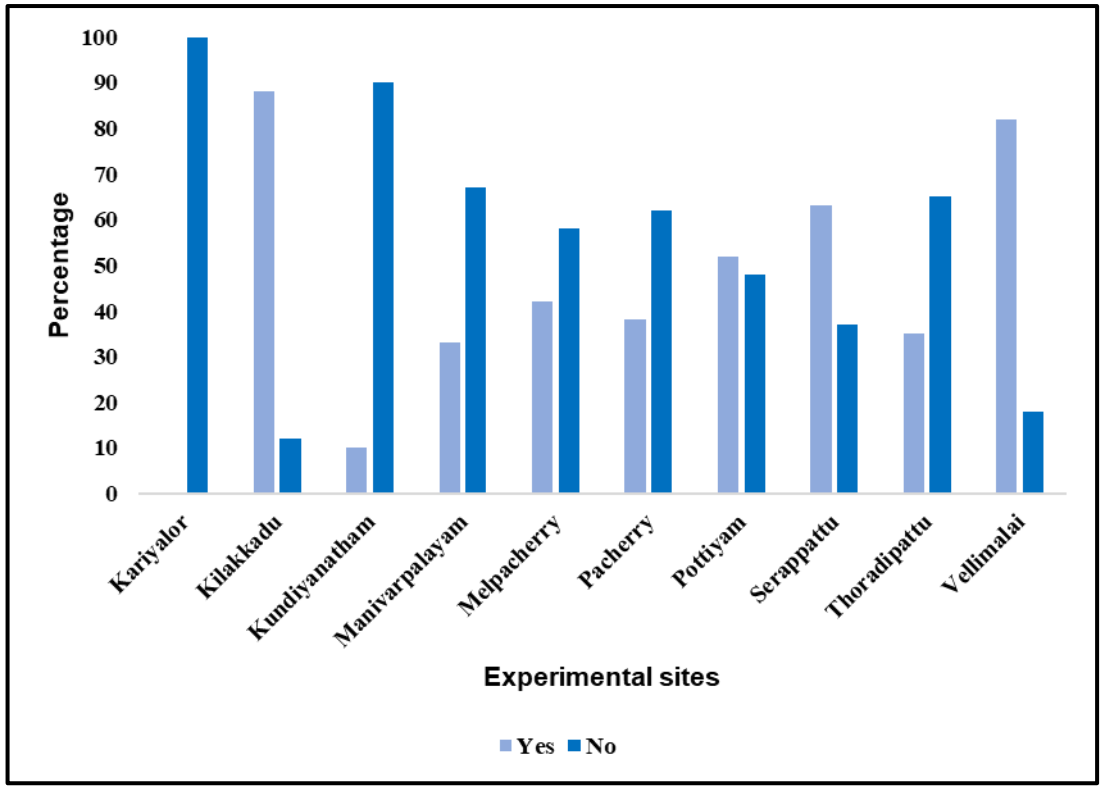


Fig. 7. Highlights a significant variation in community-led conservation efforts across different villages. **Kilakkadu exhibits the highest level of participation, with 82% of respondents acknowledging the presence of community-led initiatives, while Kariyalor reports no such initiatives (0%). Conversely, 100% of respondents from Kariyalor and only 12% from Kilakkadu stated that no community-led conservation efforts exist in their village**

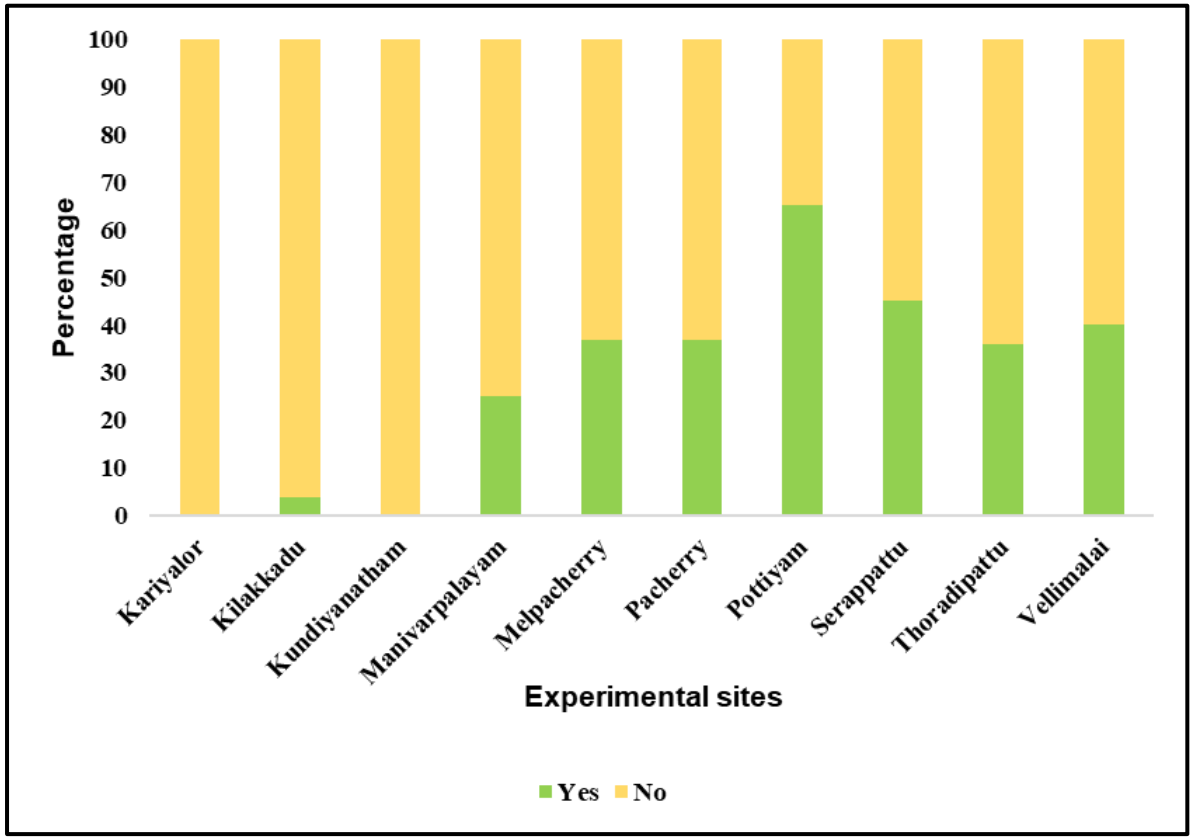


Fig. 8. Government support towards the conservation of Sacred groves across different sites of Kalrayan Hills.

It indicates a significant disparity in government support for sacred grove conservation across different villages

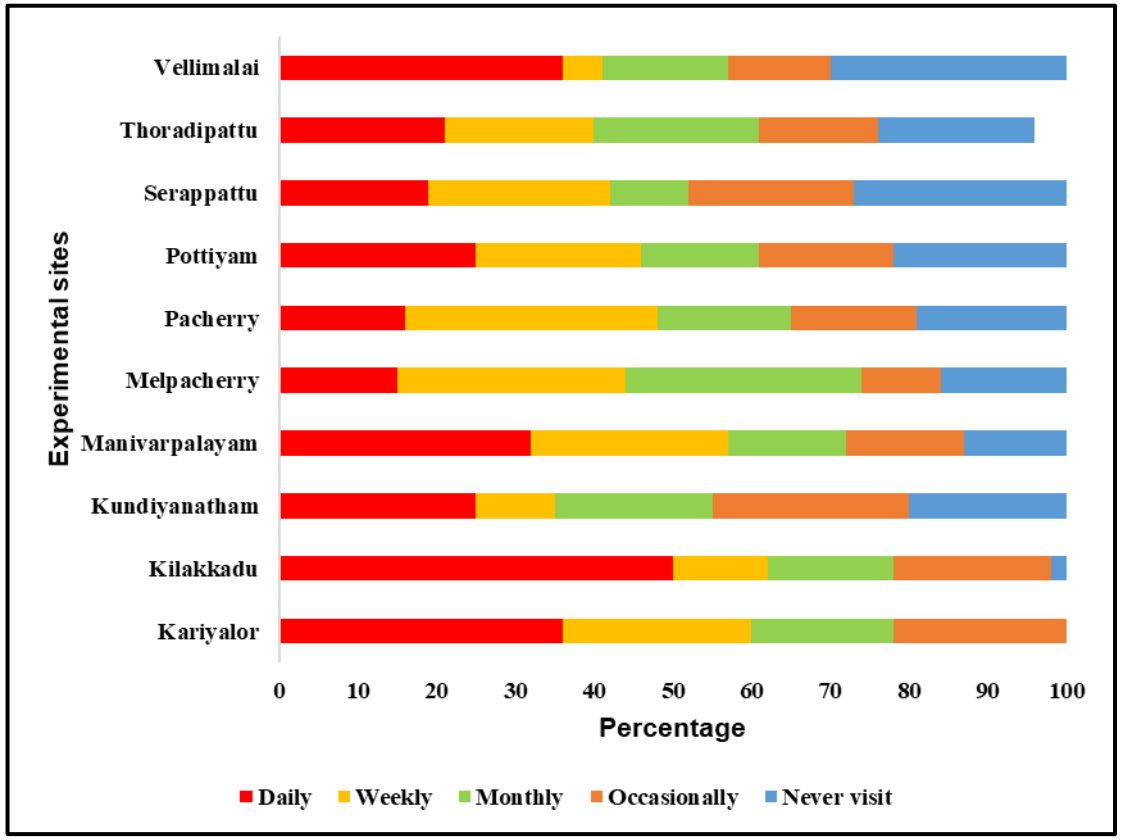


Fig. 9. Illustrates how often people visit sacred groves across different study sites.

The frequency of visits ranges from daily, weekly, monthly, and occasionally, to never visiting. Unfortunately, never visiting rate was high in many villages.

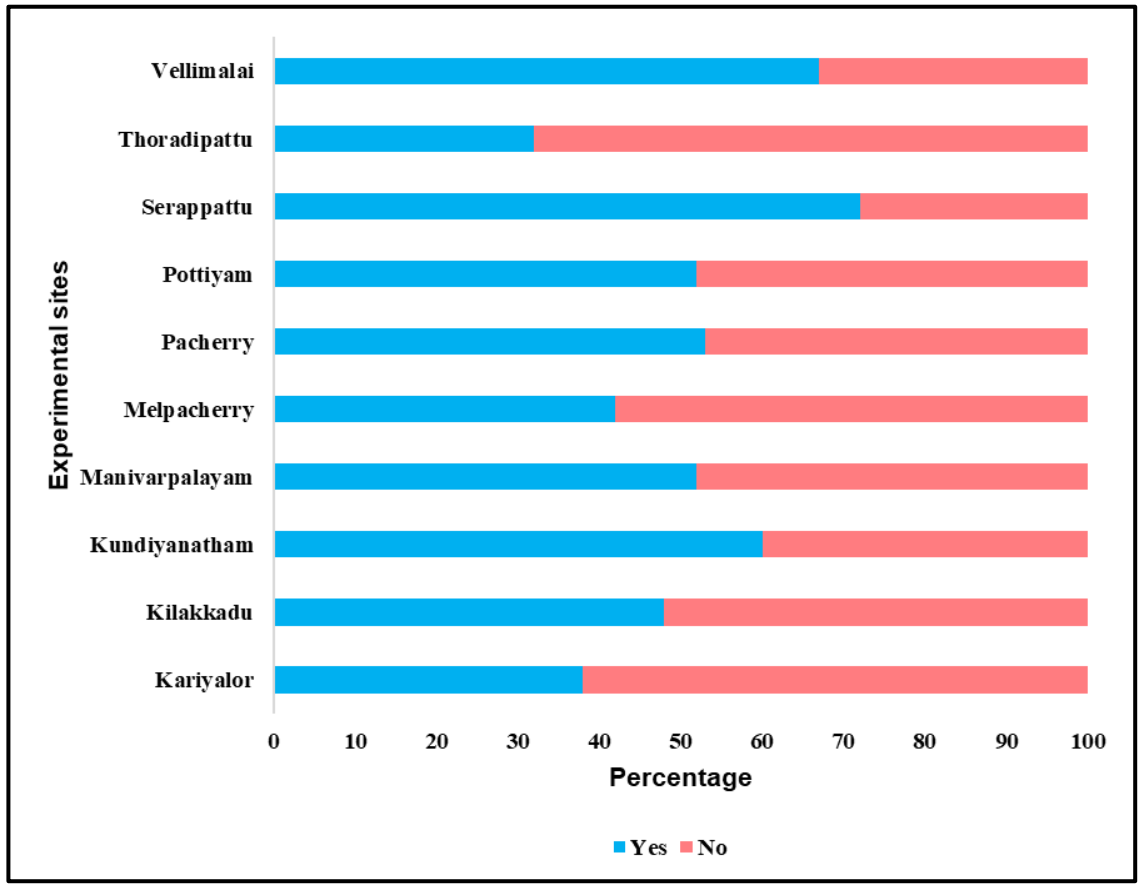


Fig. 10. Witnessing illegal activities at Sacred groves across different sites of Kalrayan Hills. The data indicates significant variations in the observation of illegal activities across different villages. **Serappattu has the highest percentage (72%) of respondents reporting illegal activities in sacred groves, whereas Thoradipattu has the lowest (32%).**

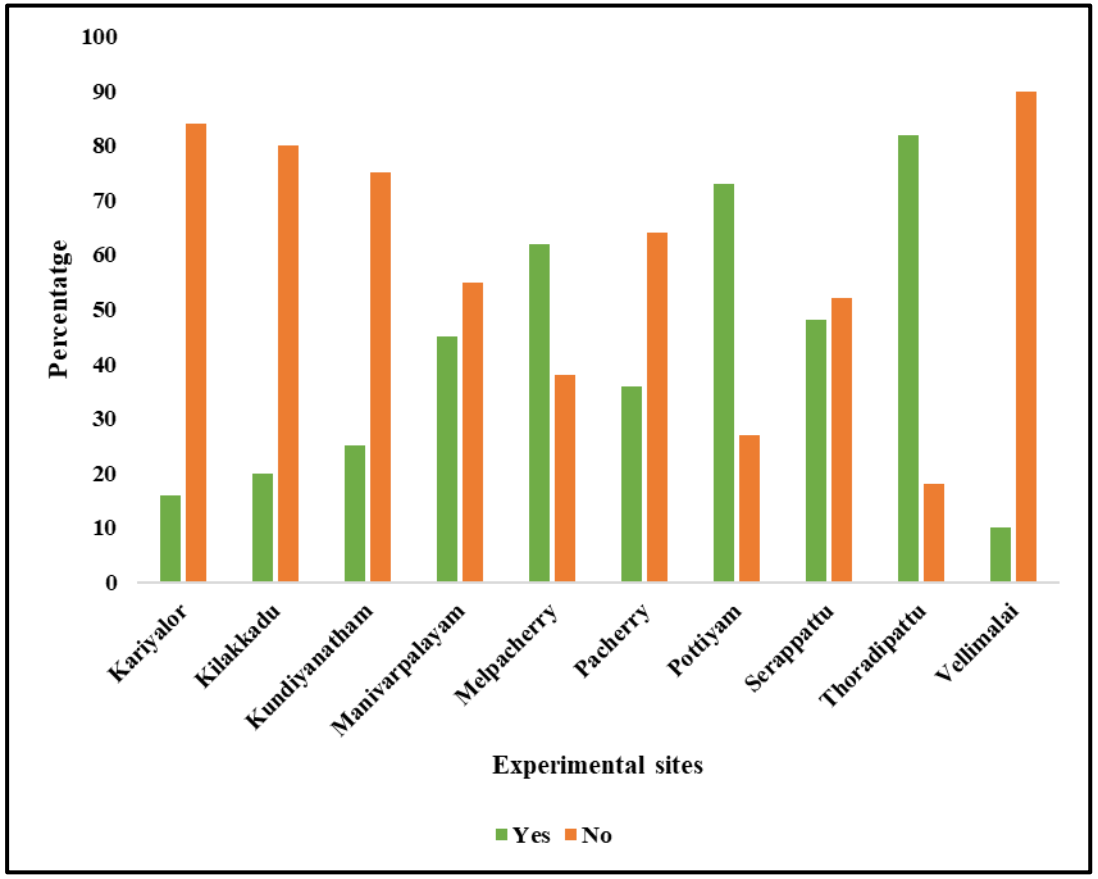


Fig. 11. Conflicts within the community regarding Sacred Grove across different sites of Kalrayan Hills. **Vellimalai – High conflicts, which could pose challenges for conservation**

Required Key Implications

- Youth Engagement and Knowledge Transfer
- Integration of Traditional and Scientific Conservation Methods
- Community-Led Conservation Initiatives
- Climate Change Adaptation
- Sustainable Livelihood Development

III *In vitro* conservation techniques for the medicinal plants in sacred groves

- Five plants namely *Hedyotis* sps., *Toddalia asiatica*, *Santalum album* (Sthala-vrikshas), *Mallotus philippinesis*, and *Rubia cordifolia* were collected from sacred groves and conserved in tissue culture facilities of the Plant Biotechnology lab, Vellore Institute of Technology

Table 2: The optimized media for callus development

Plant name	Media composition
Santalum album	MS + 1.0 mg/L 2,4-D + 0.5 mg/L indole-3-acetic acid (IAA)
Rubia cordifolia	MS +1 mg/L IAA, N6-benzyl amino purine (BA), and 1-naphthaleneacetic acid (NAA)
Hedyotis sp.	MS + 1mg/L 2,4-D + 0.2 mg/L Kinetin
Mallotus philippinesis	MS + 6 µM 2,4-D (2,4- dichlorophenoxyacetic acid) 3µM Kinetin

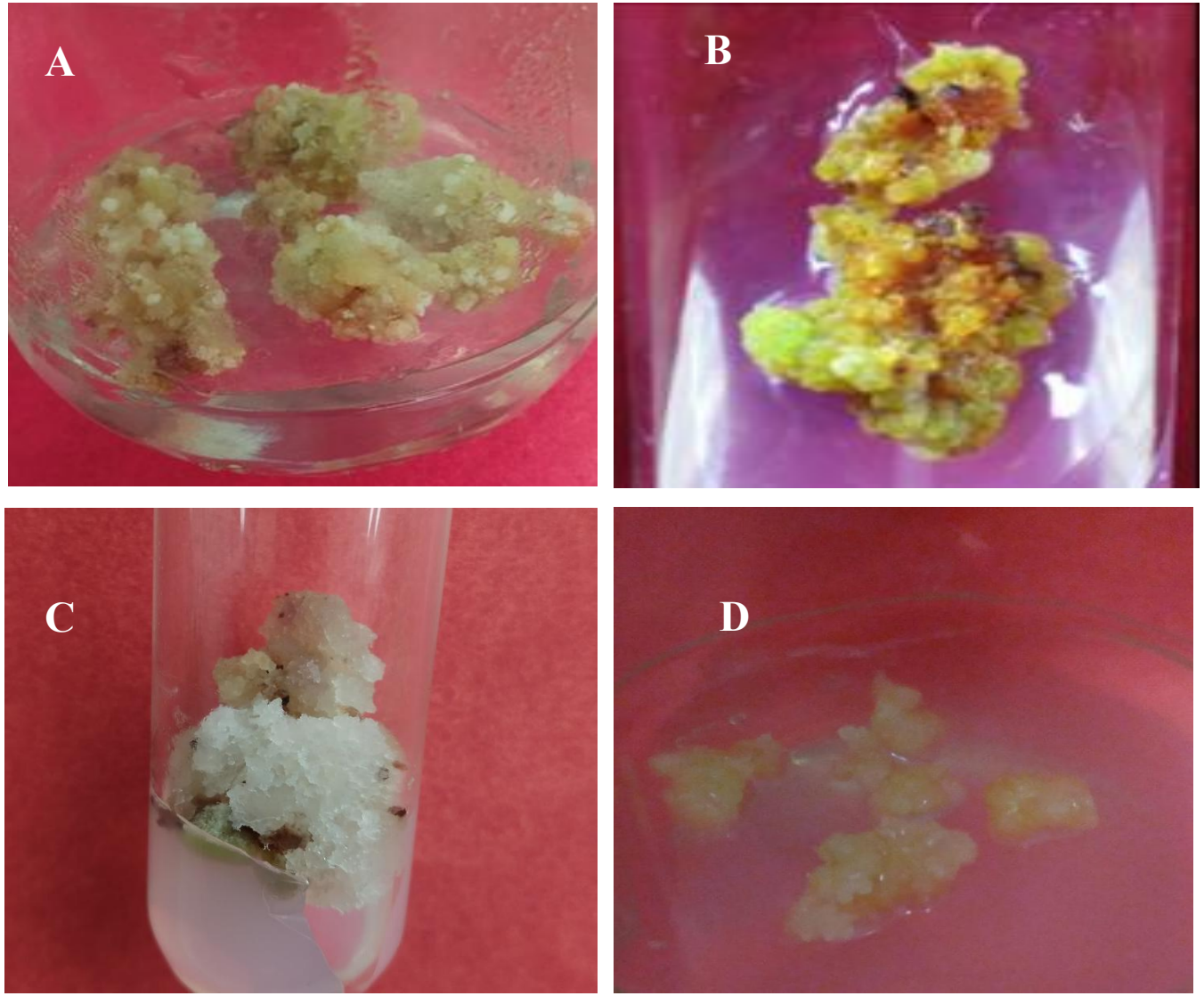


Fig. 12. The callus cultures developed from the medicinal plants A. *Santalum album*, B. *Rubia cordifolia C. Hedyotis* sps and D. *Mallotus philippinesis.*

- **In case of multiple shoot formation, the optimized medium *Hedyotis* sp. was Gamborg's B_5 media supplemented with 1.0 mg/L Kinetin and 0.2 mg/L NAA. The multiple shoots of *Toddalia asiatica* were generated in MS media supplemented with 2 mg/L**

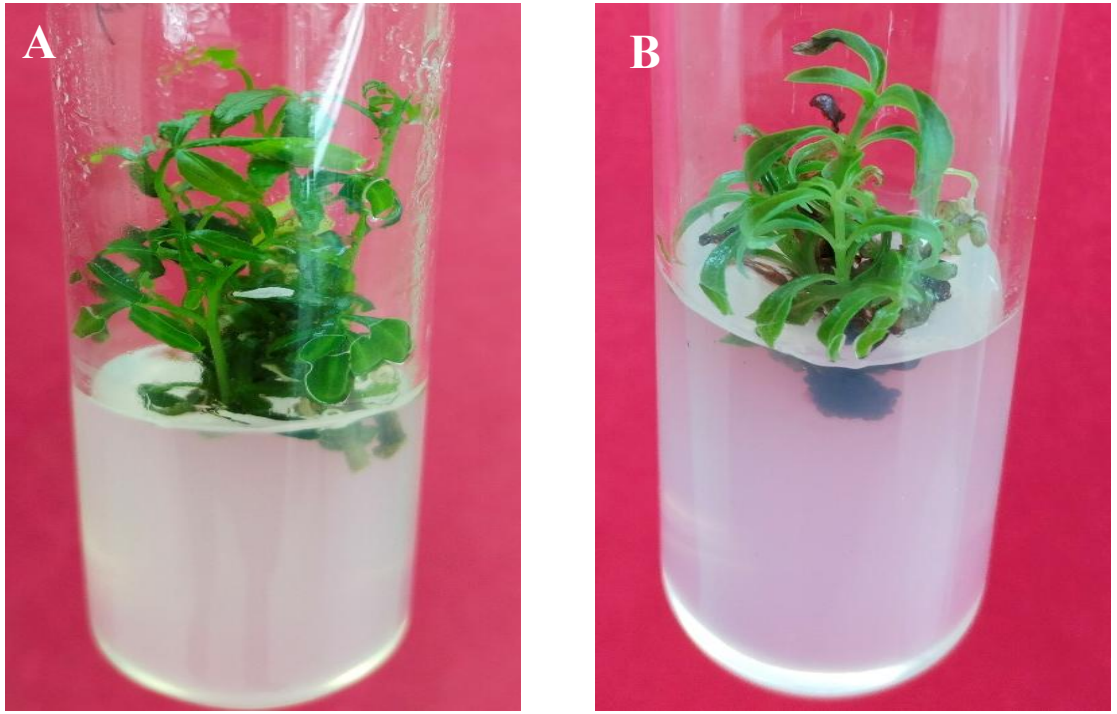


Fig. 13. Multiple shoots developed from A. *Toddalia asiatica* B. *Hedyotis* sp.

IV Restoring the threatened plants and enhancing the awareness of sustainable socio-economic development

A) Planting trees and development of *Vrikshavalli* in association with the local community

The Malayailai community is widespread in the 15 villages of the hills. The project team has visited 10 villages establish *Vrikshavalli* and spread awareness of the conservation of medicinal plants with their sustainable utilization.

Name of the plant	Number of saplings in each village										Total number
	KR	KU	KM	MM	MY	PY	PM	SU	TU	VI	
***Syzygium cumini* L**	6	6	7	7	7	7	5	7	7	7	66
***Mimusops elengi* L.**	8	6	8	9	7	8	9	7	5	6	73
***Azadirachta indica* A. Juss.**	6	5	7	9	5	6	8	9	9	5	69
***Pongamia pinnata* L.**	5	4	7	9	7	6	5	9	6	4	62
***Madhuca longifolia* (J. Koenig) Macbr.**	7	8	5	6	4	8	7	6	5	5	61
***Terminalia bellirica* (Gaertn.) Roxb**	6	5	8	4	8	9	7	6	8	9	70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"The Satoyama Development Mechanism International Japan
Developing a sustainable socio-economy through the restoration of sacred groves of the Malaiyali community in the Kalrayan Hills of South India"
"Sacred groves: Traditional Conservation Approach Awareness program"
Vellore Institute of Technology,
Vellore – 632014,
Tamil Nadu, India


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B) Awareness classes for the Malaiyali community

The two-hour awareness program was organized in each of the 10 villages. Prof. R. Siva and Prof. C. Rajasekaran, led the classes. The major points put forward in the awareness classes were:

- ✓ It is the need of the hour to reinstate traditional practices and teach the younger generation to scrupulously nurture **traditional customs, rituals, ceremonies, and a way of forest life through folk beliefs with great vigor.**
- ✓ The rejuvenation of groves with the aid of the community and linking those to water courses and other vegetation corridors open avenues for efficient biodiversity conservation and reinforcement of other ecological services.
- ✓ **A large-scale action is requisite to uphold the sacred groves and promote community forestry that acknowledges the principles of biodiversity conservation.**

- ✓ The rapid deterioration in the forest area is attributed to unimpeded human interference**. Therefore, State regulations should be followed to curb illegal intervention in the reserved area and to alert the authorities about the illegitimate logging, farming, and exploitation of forest resources**

- ✓ Sacred groves are the veritable sanctuaries of medicinal plants, and effectively utilizing these resources is a promising means of income for the Malaiyali community. Therefore, the **protection and rejuvenation of sacred groves via planting more flora is requisite. Besides, it is crucial to document the types and medicinal uses of plants for the well-being of coming generations.**

- ✓ Awareness was provided on the **medicinal plants in the sacred groves and their uses**. The lectures were given on the marketing opportunities and the ways to utilize the medicinal resources for a sustainable socio-economic development.


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V Preparation of training manuals

The modules are systematically aligned with the prior objectives of the project and serve a dual function: **as a repository of systematically compiled data and as an educational toolkit tailored for diverse stakeholders, including students, researchers, conservationists, and members of the Malaiyali community.**

Module 1	Mapping of medicinal plant diversity, equipping participants with field-based inventory and geospatial mapping techniques to document ecologically and culturally significant plant species
Module 2	Localized Conservation Priority Index (LCPI), enabling localized assessment and prioritization of threatened medicinal plants through a combination of ecological and socio-cultural indicators
Module 3	Focuses on in situ conservation techniques, emphasizing the establishment of 'Vrikshavalli' and community-led restoration activities for the long-term sustainability of native plant populations
Module 4	Presents in vitro conservation methodologies, with detailed protocols for micropropagation of threatened taxa using tissue culture, thereby providing a complementary ex-situ strategy

A Training Manual on the Conservation of Biodiversity in Sacred Groves

Dr. Siva Ramamoorthy, SBST, Vellore Institute of Technology

Dr. Inocencio E Buot, Jr., University of the Philippines Los Banos

Dr. Usha S, SSL, Vellore Institute of Technology

Dr. Rajasekaran C, SBST, Vellore Institute of Technology

Vellore Institute of Technology, India

University of the Philippines Los Banos, Philippines

Institute for Global Environmental Strategies and the Ministry of Environment of Japan

February 2025

CONTENT

GBF Targets And SDG Goals

GBF Target	SDG Goals
Target 2- Ensure that by 2030 at least 30 per cent of areas of degraded terrestrial….. ecological integrity and connectivity.	**Goal 12** -Ensure sustainable consumption and production patterns
Target 3- Ensure and enable that by 2030 at least 30 per cent of terrestrial and inland water areas, and of ……..the rights of indigenous peoples and local communities, including over their traditional territories.	**Goal 15** -Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss
Target 4- Ensure urgent management actions to halt human induced extinction of known threatened species and for the recovery and conservation of species……human-wildlife conflict for coexistence.	
Target 9- Ensure that the management and use of wild species are sustainable, thereby providing social, economic and environmental benefits …indigenous peoples and local communities	
Target 11- Restore, maintain and enhance nature's contributions to people, including ecosystem functions and services…..approaches for the benefit of all people and nature.	

Project outcome (achievements) and Key findings from the project

- ✓ The **collective approaches adopted by integrating the Malaiyali tribals in protecting sacred groves** significantly improved the community resilience for sustainable social economy development.
- ✓ The **documentation of conservation, ritual practices and TEK** is a resource for future generations for the protection of sacred groves.
- ✓ **The documentation of the medicinal plants of the sacred groves will aid the ethnopharmacology oriented translational research.**

- ✓ The **findings on the threatened medicinal plants and the establishment of the *in vitro* cultures will aid the mass propagation of the threatened species**.
- ✓ The **training classes and awareness programs substantially improved the mindset of the community to protect the sacred groves and provided insights to utilize the resources sustainably**.
- ✓ The **establishment of *Vrikshavalli* will sustain the restoration of sacred groves** in the study area with the aid of the Malaiyali community.

Lessons learned in the project

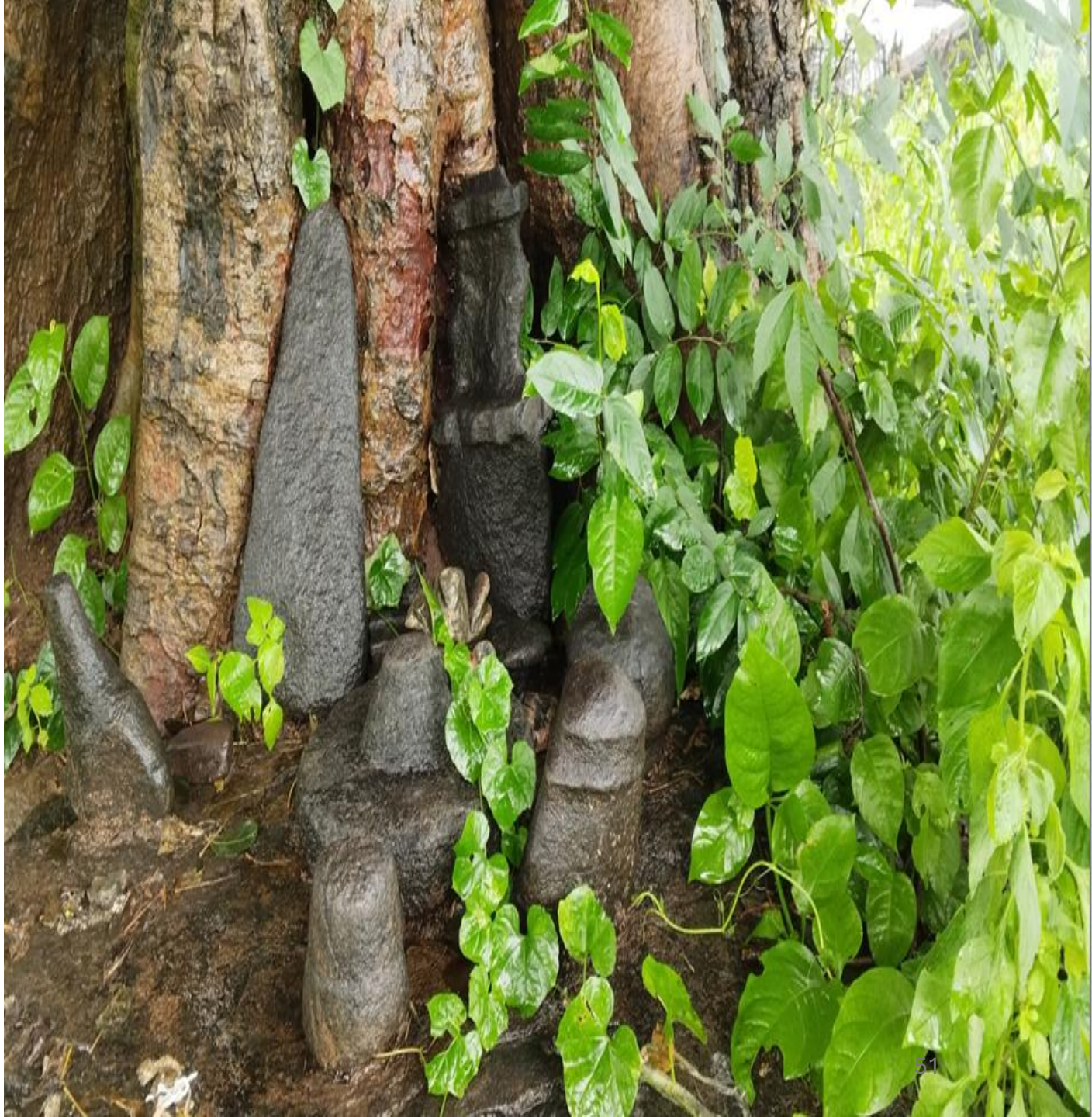
- Necessity of the documentation of TEK and knowledge transfer
- Significance of community-based approaches in the rejuvenation and conservation of sacred groves
- Sacred groves are veritable sanctuaries of endemic and rare medicinal plants. The proper documentation, *in vitro* and *in situ* conservation approaches, can aid in the safeguarding of these valuable resources
- The restoration of the sacred groves had significant impacts on the nexus elements

Direct Nexus benefits

- Terrestrial biodiversity conservation
- Sustainable use of medicinal plants
- Improved human health

Indirect Nexus benefits

- Improved water quality
- Improved soil health
- Reduced soil erosion
- Increased soil carbon storage



Editor : Semmugil
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Red News
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விரைவு செய்தி

25/09/2024 புரட்டாசி 09 புதன்கிழமை

கல்வராயன்மலை பகுதியில் பாரம்பரிய புனித தாவர பாதுகாப்பு அணுகுமுறை விழிப்புணர்வு முகாம் நடைபெற்றது.

செ:25.கள்ளக்குறிச்சி மாவட்டம் கல்வராயன் மலை கரியாலூர் ஊராட்சியில் அமைந்துள்ள தாழ்வெள்ளார் கிராமத்தில் வேலூர் VIT பல்கலைக்கழகம் மற்றும் ஜப்பான் சர்வதேச சதயோமா மேம்பாட்டு முறை இணைந்து 100 மரக்கன்றுகள் நட்டு புனித தாவர பாரம்பரிய பாதுகாப்பு அணுகுமுறை விழிப்புணர்வு ஏற்படுத் தினார்கள்.இந்நிகழ்வின் போது சிறப்பு விருந்தின ராக டாக்டர். சிவா முதல்வர்.உயிரி தொழில் நுட்பவியல் துறை (ம)உயிரிஅறிவியல் தொழில்நுட்ப கல்லூரி விஜடிவேலூர் அவர்கள், டாக்டர்.ரமேஷ்குமார் உயிரி தொழில் நுட்ப வியல் துறை விஜடி வேலூர் கலந்து கொண்டு விழிப்புணர்வு ஏற்படுத் தினார்கள்.உடன் கல்வராயன்மலை சமூக ஆர்வலர் திரு.ஆ.ரஜினி (ம) தாழ்வெள்ளார் கிராம மக்கள் கலந்து கொண்டனர்.

மாவட்ட செய்தியாளர் எம்.பி.பழனிசாமி 9042266001

இரத்த தானம் செய்வோம் மனித நேயம் காப்போம்!

VIT Vellore Institute of Technology (Deemed to be University under section 3 of UGC Act, 1956)

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"சதயோமா மேம்பாட்டு முறை, சர்வதேச ஜப்பான் - தென் இந்தியாவின் கல்ராயன் மலைகளில் மலையாளி சமூகத்தின் புனித தாவர தோப்புகளை மீட்பதன் மூலம் நிலையான சமூக பொருளாதாரத்தை உருவாக்குதல்."

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நாள்: 22.09.2024 ஞாயிற்றுக்கிழமை

இடம்: துரூர், கல்ராயன் மலைகள், கள்ளக்குறிச்சி மாவட்டம்

வேலூர் வி.ஐ.டி. மற்றும் சர்வதேச சதயோமா மேம்பாட்டு முறை, ஜப்பான் இணைந்து, 22.09.2024 அன்று துரூர் கிராமம், கல்ராயன் மலைகள், கள்ளக்குறிச்சி மாவட்டத்தில் புனித தாவர தோப்புகள் பாரம்பரிய பாதுகாப்பு அணுகுமுறைப் பற்றிய விழிப்புணர்வு முகாம் நடைபெற உள்ளது. எனவே கிராம மக்கள் முகாமைப் பயன்படுத்திக் கொள்ளுமாறு தாழ்மையுடன் கேட்டுக்கொள்ளப்படுகின்றனர். அன்புடன் அழைக்கும் வேலூர் தொழில்நுட்பப் பல்கலைக்கழகம் மற்றும் ஆராய்ச்சியாளர்கள்

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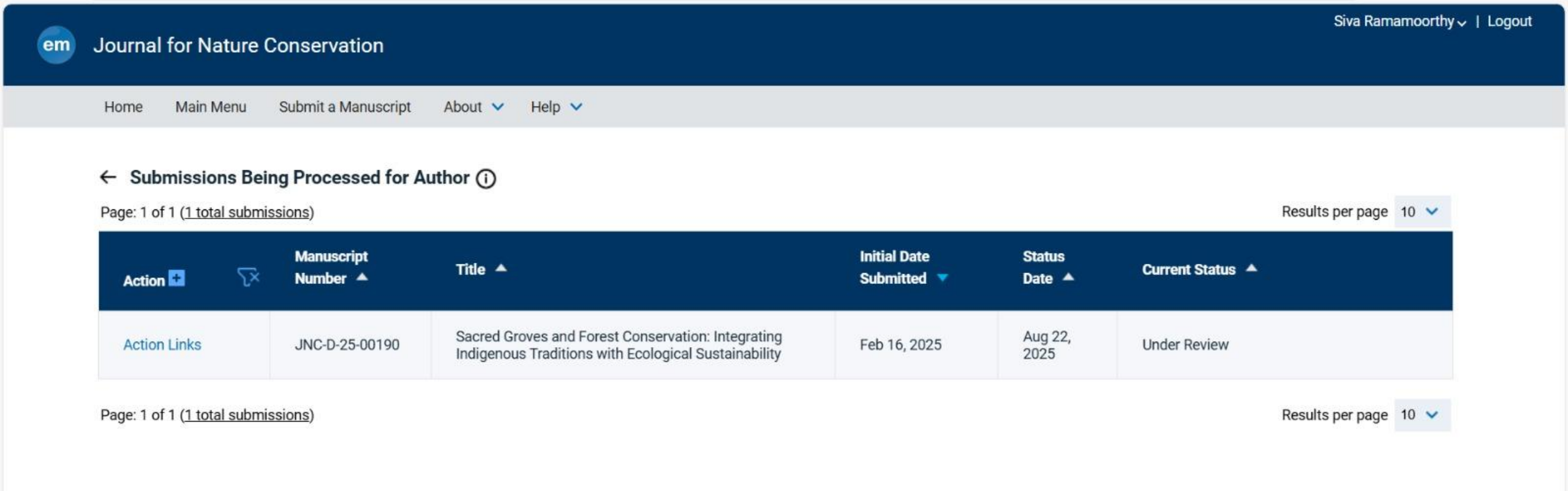
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