പതിനാറാം കേരളനിയമസഭ

രണ്ടാം സമ്മേളനം

നക്ഷത്രചിഹ്നമിടാത്ത ചോദ്യം നമ്പർ: 2437 **27-10-2026-ൽ മറുപടിയ്ക്ക്**

പരിസ്ഥിതിലോല മേഖല സംബന്ധിച്ച ഏഴാമത് കരട് വിജ്ഞാപനം

ചോദ്യം ഉന്നയിച്ച അംഗങ്ങൾ **മറുപടി നൽകിയ മന്ത്രി**

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(എ) പരിസ്ഥിതി ലോല മേഖല സംബന്ധിച്ച് കേന്ദ്ര സർക്കാർ പുറപ്പെടുവിച്ച ഏഴാമത് കരട് വിജ്ഞാപനത്തിന്മേൽ കേന്ദ്ര സർക്കാരിന് സംസ്ഥാന സർക്കാർ നിർദ്ദേശം സമർപ്പിച്ചിട്ടുണ്ടോ; വ്യക്തമാക്കാമോ;

മറുപടി: സമർപ്പിച്ചിട്ടുണ്ട്.

27.07.2026 ലെ കരട് വിജ്ഞാപനത്തിന്മേൽ പരിഷ്കരിച്ച നിർദ്ദേശം 24.09.2026-ന സംസ്ഥാന സർക്കാർ കേന്ദ്ര വനം പരിസ്ഥിതി മന്ത്രാലയത്തിന് സമർപ്പിച്ചിട്ടുള്ളതാണ്. കരട് ഇ.എസ്.എ. വിജ്ഞാപനത്തിന്റെ അടിസ്ഥാനത്തിൽ വിശദമായ GIS വിശകലനം, സ്ഥലപരിശോധന, ജില്ലാതല / തദ്ദേശതല പരിശോധനകൾ, തദ്ദേശ സ്വയംഭരണ സ്ഥാപനങ്ങളുടെ അഭിപ്രായങ്ങൾ എന്നിവ പരിഗണിച്ചാണ് പരിഷ്കരിച്ച ഈ നിർദ്ദേശം തയ്യാറാക്കിയിട്ടുള്ളത്.

(ബി) കരട് വിജ്ഞാപനത്തിലെ പട്ടികയിൽ നിന്ന് ഏതെങ്കിലും പ്രദേശങ്ങളെ ഒഴിവാക്കണമെന്ന് ആവശ്യപ്പെട്ടിട്ടുണ്ടോ; എങ്കിൽ ഇത് സംബന്ധിച്ച് പഠനം നടത്തിയിരുന്നോ; വിശദമാക്കാമോ;

മറുപടി: 27.07.2026-ലെ കരട് വിജ്ഞാപനപ്രകാരം കേരളത്തിലെ ഇ.എസ്.എ യുടെ വിസ്തൃതി 131 വില്ലേജുകളിലായി 9,993.78 ച.കി.മീ. ആണ്. സംസ്ഥാന സർക്കാർ സമർപ്പിച്ച പരിഷ്കരിച്ച നിർദ്ദേശപ്രകാരം 98 വില്ലേജുകളിലായി 8,590.69 ച.കി.മീ. പ്രദേശമാണ് ഇ.എസ്.എ യായി ഉൾപ്പെടുത്താൻ കേന്ദ്ര സർക്കാരിനോട് നിർദ്ദേശിച്ചിട്ടുള്ളത്. ജനവാസ മേഖലകളും, കൃഷി സ്ഥലങ്ങളും തോട്ടങ്ങളും ഒറ്റപ്പെട്ട വനപ്രദേശങ്ങളും ഒഴിവാക്കിയാണ്, സംസ്ഥാനത്തിന്റെ പരിസ്ഥിതി ലോല പ്രദേശം കണ്ടെത്തിയിരിക്കുന്നത്.

(സി) ഏഴാമത് കരട് വിജ്ഞാപനത്തിന്മേൽ സംസ്ഥാന സർക്കാർ കേന്ദ്രത്തിന് സമർപ്പിച്ച റിപ്പോർട്ടിന്റെ പകർപ്പ് ലഭ്യമാക്കാമോ?

മറുപടി: ഏഴാമത് കരട് വിജ്ഞാപനത്തിന്മേൽ സംസ്ഥാന സർക്കാർ കേന്ദ്രത്തിന് സമർപ്പിച്ച റിപ്പോർട്ടിന്റെ പകർപ്പ് അനുബന്ധമായി ചേർക്കുന്നു.

സെക്ഷൻ ഓഫീസർ

Notification of the Western Ghats Ecologically Sensitive Area (WGESA)

A Proposal by the Government of Keralam for a Phased, Scientifically Verified Notification

Submitted to

The Ministry of Environment, Forest and Climate Change

Government of India

Department of Environment and Climate Change
Government of Keralam

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Executive Summary

The Western Ghats are one of the world's most ecologically significant mountain systems and a defining component of India's natural heritage — one of the world's eight "hottest" biodiversity hotspots, and the source of major river systems that sustain water, food and energy security across peninsular India. The Government of Keralam remains fully committed to the scientifically sound and legally sustainable conservation of this landscape, and submits this proposal to assist the Ministry of Environment, Forest and Climate Change (MoEFCC) in bringing the long-pending Western Ghats Ecologically Sensitive Area (WGESA) notification to an early conclusion.

Following the Ministry's first draft notification, 9,993.7 sq. km in 123 villages is covered as per the recommendation of the State Expert Committee; extensive public representations from farmers, plantation workers and hill-region residents prompted the Government to undertake a comprehensive and scientific reassessment. This exercise combined GIS-based geospatial analysis, District Level Committee verification, and participatory validation by Local Self-Government Institutions, and has culminated in a scientifically verified proposal covering **8,590.69 sq. km of land within 98 villages**. On review, the 9,993.7 sq. km figure was found to rest on administrative estimation rather than authenticated geospatial data; the present figure corrects this through genuine local-level verification, ground truthing and therefore represents a more robust, not a diluted, basis for notification.

Keralam's case for a scientifically differentiated approach rests on ground realities largely absent elsewhere in the Western Ghats: a population density of **860 persons per sq. km** (the third-highest among major Indian States), with many proposed **ESA villages exceeding 1,000 persons per sq. km against the HLWG's own 100-persons-per-sq.km benchmark**; a continuous rural–urban settlement fabric in which revenue villages function as administrative rather than ecological units, **encompassing established townships such as Munnar, Kumily, Kattappana, Adimali and Nedumkandam**; extensive land distribution following the Kerala Land Reforms Act, 1963; a plantation economy of national importance, including the Cardamom Hill Reserve; and terrain that varies sharply even within single villages. The State also faces a severe constraint on land availability: **recorded forest land alone accounts for about 29.67 per cent of the State's geographical area**, while substantial additional areas comprising rivers, lakes, wetlands, coastal

stretches and other ecologically significant landscapes are already governed by different statutory and regulatory regimes. Consequently, the remaining land available for habitation, agriculture, plantations, infrastructure and other essential socio-economic activities is highly constrained. The State's extensive green cover must also be understood in this context: a significant proportion of the non-forest landscape derives from long-established mixed-crop agricultural systems and plantations, which form an integral part of Kerala's rural landscape and economy and should not be equated with natural or recorded forest land. Notably, this intense land pressure exists alongside an already strong and strengthening conservation record — **24 Protected Areas covering 7.89 per cent of the State, among the highest shares among major States, and forest cover that grew by 157.94 sq. km over the past decade**.

The Government has engaged constructively with the Expert Committee constituted under Dr Sanjay Kumar, IFS (Retd.), including at a meeting with the Hon'ble Chief Minister on 15 July 2026, and has furnished detailed responses to its observations on ecological continuity, the Cardamom Hill Reserve, landslide susceptibility, forest-cover trends and spatial-data reliability. In each instance, the Government has demonstrated that its position advances — rather than compromises — the shared objective of conservation: continuity is best assessed functionally rather than by uninterrupted geography; landslide risk depends on multiple factors and is better managed through land-use and disaster planning; and areas proposed for exclusion remain fully protected under existing Central and State forest, wildlife and environmental law. The Government has also sought calibrated, case-by-case relaxations for a limited set of essential activities — including dairy and healthcare infrastructure, tourism-related facilities, and pumped storage hydroelectric projects — reflecting Keralam's developmental needs without compromising ecological objectives.

Accordingly, the Government proposes and requests **final notification of 8,590.69 sq. km within 98 scientifically verified villages as the complete WGESA landscape**. This approach secures statutory protection for the verified landscape without delay, while recognising Kerala's distinctive demographic, land-use and ecological circumstances. It reflects an assessment process that has reached scientific and administrative finality and provides a practical, legally sustainable and scientifically verifiable basis for immediate notification.

1. Introduction and Ecological Significance of the Western Ghats

The Western Ghats constitute one of the most ecologically significant mountain systems in the world and an irreplaceable component of India's natural heritage. Extending nearly 1,600 kilometres along the western coast of peninsular India across Gujarat, Maharashtra, Goa, Karnataka, Keralam and Tamil Nadu, the range harbours exceptional biodiversity and endemism. Thirty-nine serial sites within the Western Ghats have been inscribed as UNESCO World Heritage Sites, and the region is recognised globally as one of the world's eight "hottest" biodiversity hotspots.

Beyond its biological richness, the range performs indispensable ecological and socio-economic functions: it regulates the Indian monsoon, sustains nearly forty major river systems and numerous smaller ones, supports groundwater recharge, moderates regional climate, stabilises hill slopes, conserves soil and stores substantial terrestrial carbon. These rivers are the principal source of drinking water, irrigation and hydroelectric power for a large share of peninsular India's population, while the forests function as significant carbon sinks that strengthen climate resilience. In recent years, increasingly frequent extreme rainfall, landslides, flash floods and dry spells have further underlined the role of natural forests, riparian systems, wetlands and high-altitude grasslands in slope stability, watershed protection and disaster risk reduction. Conservation of the Western Ghats is therefore integral to water security, climate resilience, food security and sustainable development — not solely a biodiversity concern.

1.1 Purpose of the Proposal

The Government of Keralam has consistently supported the objective of conserving the Western Ghats and remains fully committed to implementing scientifically sound and legally sustainable measures for environmental protection. At the same time, the State has emphasised that conservation measures must adequately recognise the distinctive demographic, geographical and socio-economic characteristics of Keralam.

Unlike several other Western Ghats States, Keralam exhibits an exceptionally high population density, a continuous rural–urban settlement pattern, extensive plantation landscapes, long-established agricultural communities and limited per capita land availability. Consequently, environmental regulation within the State requires a carefully calibrated approach that simultaneously protects ecologically

significant natural landscapes while avoiding unnecessary restrictions on densely inhabited cultural landscapes that have evolved over several decades.

This proposal has been prepared to assist the Ministry of Environment, Forest and Climate Change (MoEFCC) in reaching an early, scientifically robust and legally sustainable conclusion of the long-pending Western Ghats Ecologically Sensitive Area (WGESA) notification. It consolidates a decade of technical work by the Government of Keralam — geospatial reassessment, field verification, village-level scrutiny, public consultation, inter-departmental coordination, Expert Committee deliberations and the State's responses to technical observations raised during the process.

The proposal does not seek dilution of environmental protection. It reiterates Keralam's continuing commitment to biodiversity conservation, ecosystem restoration and climate resilience, and seeks the immediate and final notification of the 98 ecologically verified villages identified through the State's comprehensive assessment process. The principal objective is to secure without further delay the final notification of those ecologically contiguous and scientifically verified landscapes for which the assessment process has been conclusively completed, so that the State's conservation framework attains the legal certainty it has long required.

1.2 Summary of the Proposal

The Government of Keralam submits that ESA notification **covering 8,590.69 sq. km of land within 98 villages** represents the culmination of one of the most comprehensive ecological verification exercises undertaken in the State, integrating advances in geospatial technology, field validation and stakeholder consultation. This exercise has yielded a scientifically robust and administratively finalised landscape that is ready for notification in its entirety, without further procedural deferral. The Government of Keralam accordingly urges the Ministry to proceed with the final notification of the 98 verified villages forthwith, as a complete and self-contained landscape in its own right.

2. Evolution of the WGESA Process

2.1 The Gadgil and Kasturirangan Reports

The Ministry of Environment and Forests constituted the Western Ghats Ecology Expert Panel (WGEEP) under Prof. Madhav Gadgil in 2010, which recommended extensive ecological regulation through a three-tier Ecologically Sensitive Zone classification across the entire Western Ghats. Given concerns from State Governments and stakeholders about the practical implications of this approach — particularly in areas with long-established settlements and plantation agriculture — the Government of India constituted a High Level Working Group (HLWG) under Dr K. Kasturirangan, which submitted its report in 2013.

The HLWG adopted a different, remote-sensing and geospatial methodology, identifying approximately 59,940 square kilometres as Ecologically Sensitive Area across the six Western Ghats States, and used the revenue village as the basic administrative unit — so that where only part of a village met the ecological criteria, the entire village was proposed for inclusion.

2.2 Keralam's Early Response and Successive Draft Notifications

The Ministry's first draft notification, based on the HLWG recommendations, covered 123 villages and 13,108 square kilometres in Keralam. Following the recommendations of a State Expert Committee chaired by Dr Oommen V. Oommen, the State proposed restricting the ESA to 9,993.7 square kilometres — approximately 9,107 sq. km of forest and 886.7 sq. km of non-forest natural landscape — excluding agricultural land, plantations and inhabited areas. The Ministry accepted this in principle in the 2014 draft notification, which was reissued on several later occasions without substantive change for Keralam.

Over the years, implementation of the proposed notification generated extensive public representations, particularly from farmers, plantation workers, local self-government institutions and residents of the high ranges. The concerns broadly related to inaccuracies in village boundaries, inclusion of private lands and plantations, apprehensions regarding restrictions on agriculture and construction, overlap with Eco-Sensitive Zones around Protected Areas, the applicability of multiple regulatory norms, and the implications of the notification on long-established settlements. The Government of Keralam considered it necessary to undertake a comprehensive scientific reassessment to ensure that the final

notification accurately reflected the ecological characteristics of the landscape while minimising avoidable regulatory ambiguities.

2.3 Comprehensive Scientific Reassessment (2022–2024)

Accordingly, the Government initiated an extensive programme of geospatial verification, district-level scrutiny and field verification. District-level Committees, chaired by the District Collectors, were constituted to verify village boundaries, forest boundaries, habitation patterns, and ecologically significant landscapes. Simultaneously, the Department of Environment and Climate Change undertook detailed GIS-based analysis integrating data obtained from the Kerala Forest Department, Survey of India, Kerala State Remote Sensing and Environment Centre (KSREC), satellite imagery and revenue records. The reassessment also involved publication of draft spatial layers for verification by Local Self Government Institutions and incorporation of corrections suggested by local authorities after due verification.

The scientific reassessment undertaken by Keralam represented a significant advancement over the earlier delineation process. Unlike the original village-based approach, the reassessment focused on identifying ecologically contiguous natural landscapes while excluding long-established settlements, plantation ecosystems, public infrastructure and other modified cultural landscapes that no longer exhibit the ecological characteristics envisaged under the HLWG methodology. The exercise was therefore intended to improve the spatial precision of the proposed ESA boundaries rather than alter the underlying conservation objectives. This reassessment culminated in the current proposal of **8,590.69 sq. km of land within 98 villages**. The district, taluk, and village-wise extent of the Ecologically Sensitive Area (ESA), along with the corresponding shapefiles and KML files, is enclosed as **Annexure I**.

2.4 The Expert Committee and Recent Developments

The MoEFCC subsequently constituted an Expert Committee under Dr Sanjay Kumar, IFS (Retd.), to re-examine the suggestions of the six State Governments in a holistic manner, keeping in view the conservation of pristine environment and the rights, needs and developmental aspirations of the area. The Committee undertook field visits and consultations with the State since 2022, and at a meeting with the Hon'ble Chief Minister on 15 July 2026, the State reiterated its unwavering commitment to biodiversity conservation while emphasising the need for a

balanced, scientifically robust and socially equitable framework that recognises Keralam's unique demographic and geographical realities. The Expert Committee, while acknowledging the extensive scientific work undertaken by the State, also highlighted the importance of maintaining ecological continuity and strengthening climate resilience within the Western Ghats landscape. The discussions reflected a shared commitment to evolving a practical and legally sustainable solution capable of ensuring both ecological security and livelihood protection.

The Ministry subsequently issued the Seventh Draft Notification on 27 July 2026, and provided 60 days to make any objections or suggestions on the draft notification. Following the deliberations of the Expert Committee and the issuance of the Seventh Draft Notification dated 27 July 2026, the Government undertook a comprehensive review of all technical observations raised by the Committee and furnished detailed responses supported by scientific, legal and administrative justification. The present proposal consolidates the outcome of this entire process and seeks to assist the Ministry in bringing the long-pending notification process to its logical conclusion.

3. Keralam's Ecological, Geographical and Socio-Economic Context

3.1 A Distinctive Landscape

Keralam occupies a unique position among the six Western Ghats States owing to its distinctive physiography, settlement pattern, demographic characteristics, land-use practices and socio-economic development trajectory. Although the State accounts for only about one-tenth of the geographical extent of the Western Ghats, it contains some of the most ecologically significant montane forests, tropical evergreen ecosystems, shola-grassland complexes, river catchments and biodiversity-rich landscapes within the mountain chain. The Western Ghats traverse Keralam's entire eastern margin, from the Agasthyamalai hills in the south to the Wayanad plateau in the north, forming the principal watershed for almost all major west-flowing rivers, including the Periyar, Bharathapuzha, Pamba, Chaliyar, Chalakudy and Achankovil.

Simultaneously, Keralam also supports one of the highest population densities in the country, with human settlements, plantation agriculture and public infrastructure intricately interwoven with natural ecosystems. The coexistence of ecologically significant natural landscapes and densely inhabited cultural

landscapes within the same geographical region distinguishes Keralam from other Western Ghats States and presents unique challenges in delineating Ecologically Sensitive Areas (ESA). Consequently, environmental regulation in Keralam cannot be based solely on broad administrative units but requires a scientifically nuanced approach that recognises ecological heterogeneity within individual villages while ensuring adequate protection of ecologically significant landscapes.

3.2 Population Density and Land Pressure

Keralam is a geographically constrained State, with a total area of 38,863 square kilometres and a population density of 860 persons per square kilometre — the third highest among major Indian States as per the 2011 Census. The State is distinctively characterised with a continuous rural–urban settlement pattern, even in hilly regions, in which the boundaries between urban, rural, forest-fringe and plantation areas are often blurred. The report of the HLWG envisaged that ESAs would largely comprise landscapes with relatively low human habitation, generally indicating a population density of less than 100 persons per square kilometre. However, the ground realities in Keralam are markedly different. Almost all the villages proposed under the draft ESA notification have population densities far exceeding this threshold, with some villages recording densities well above 1,000 persons per square kilometre. Even in the hilly regions of the Western Ghats, settlements are continuous, resulting in a mosaic of habitations, plantations, agricultural lands, forest fringes, and built-up areas rather than contiguous forest landscapes.

As a result, the notified revenue villages encompass a wide range of established human settlements and public infrastructure, including schools, hospitals, places of worship, markets, government institutions, banks, roads, and tourism facilities that have evolved over several decades. This settlement pattern is, in large part, the outcome of planned migration and government policy from the 1940s to the 1960s, when families were encouraged to cultivate spice, tea, coffee and rubber in the highlands. Many of these settlements have existed for more than half a century and today form an integral part of Keralam's socio-economic fabric, with cultural landscapes that differ fundamentally from undisturbed natural ecosystems even where they lie within the geographical limits of the Western Ghats.

Nevertheless, this land pressure is compounded by the State's existing conservation footprint: the legal forest area covers 11,531.14 square kilometres —

about 30 per cent of Keralam's land — under stringent forest law, while low-lying areas are separately regulated under the Coastal Regulation Zone Notification, 2019 and the Wetland Conservation and Management Rules, 2017. Per capita land available for settlement, agriculture and development is consequently among the lowest of any major State.

3.3 Land Reforms, Fragmentation and Homestead Farming

The successful implementation of the Kerala Land Reforms Act, 1963 delivered substantial gains in social justice, poverty reduction and agricultural productivity, but also produced considerable land fragmentation: the average size of operational landholdings fell from 0.22 hectares in 2010–11 to 0.18 hectares in 2015–16. These small holdings have made homestead farming — diversified, small-scale cultivation for household consumption and local markets, often combined with agroforestry using mango, jackfruit, teak and other native trees — a defining feature of Keralam's rural economy. Homestead farming is not merely an economic activity; it is integral to family livelihood, food security and the transmission of traditional agro-ecological knowledge across generations, and it distinguishes Keralam's inhabited hill landscape from the large, contiguous landholdings typical of other Western Ghats States.

3.4 Villages as Administrative, Not Cultural, Units

Unlike most other Western Ghats States, where villages, towns and forest areas are distinct and separated, Keralam's revenue villages are purely administrative units within a continuous rural–urban settlement fabric, with towns, settlements and natural landscape interspersed and well connected by road. Many villages proposed as ESA under the HLWG framework contain substantial urbanised segments — educational institutions including engineering colleges, medical colleges, hospitals, banks, bus stands, religious institutions and established tourism destinations — as in the towns of Munnar, Kumily, Kattappana and Nedumkandam. Applying forest and environmental regulation across such villages in their entirety is neither practicable nor proportionate to the ecological characteristics actually present, and residents of these areas reasonably expect to retain the standard of living and infrastructure they have built over decades.

3.5 The Plantation Economy and the Cardamom Hill Reserve

Plantation agriculture — tea, coffee, rubber, cardamom, pepper and mixed homesteads under native shade trees — occupies a distinct ecological and

economic position in Keralam's highlands, contributing to soil conservation, carbon storage and water retention while remaining structurally different from natural forest. The Cardamom Hill Reserve in Idukki district is the most significant example: Keralam accounts for roughly 70 per cent of India's cardamom cultivation, grown under regulated forest canopy in the specific tropical, shade-loving conditions the crop requires. Cultivation in the Reserve has been governed for nearly a century by a dedicated legal framework — the Cardamom Rules (Travancore), 1935 and the Rules for Lease of Government Lands for Cardamom Cultivation, 1961 — which restrict felling of large trees, prohibit large-scale forest clearance and require sustainable cultivation practices, thereby embedding ecological conservation within the region's principal economic activity.

3.6 Protected Areas and Forest Cover Trends

Keralam maintains 24 Protected Areas — 18 Wildlife Sanctuaries and 6 National Parks — covering approximately 3,066 square kilometres, or 7.89 percent of the State's geographical area, the highest proportion among major Indian States. This protection has coincided with rising, not falling, forest cover: the India State of Forest Report 2023 ranks Keralam third nationally for increase in forest cover, and records that forest cover within the WGESA landscape in Keralam grew by 157.94 square kilometres over the preceding decade, from 10,229.03 sq. km in 2013 to 10,386.97 sq. km in 2023. This trend has occurred even as the State's economy has structurally shifted away from agriculture — the primary sector's share of State income fell from 52.16 percent in 1960–61 to 8.44 percent in 2019–20, while the services sector rose from 33.12 percent to 63.31 percent — demonstrating that Keralam's forest and biodiversity conservation record has strengthened independently of, and in parallel with, the WGESA process.

3.7 River Catchments and Water Security

Keralam's river catchments, including that of the Bharathapuzha, Periyar and Pampa, are of vital importance for water supply, biodiversity and hydroelectric generation, and are already substantially protected. For instance, of the 44 ESA villages falling within the Periyar catchment (3,607.65 sq. km), about 24 percent lies within Protected Areas and a further 57.5 per cent is Reserve Forest, Vested Forest or Cardamom Hill Reserve land — meaning roughly 81 per cent of the catchment already carries statutory protection. This is reinforced by a dense framework of State legislation directed specifically at conservation of catchment and water-resource protection, including the Kerala Irrigation and Water Conservation Act,

2003; the Kerala Protection of River Banks and Regulation of Removal of Sand Act, 2002; the Kerala Conservation of Paddy Land and Wetland Act, 2008; the Kerala Groundwater (Control and Regulation) Act, 2002; the Kerala Forest Act, 1961; the Kerala Land Utilization Order, 1967; the Kerala Preservation of Trees Act, 1986; the Kerala Forests (Vesting and Management of Ecologically Fragile Lands) Act, 2003; the Kerala Promotion of Tree Growth in Non-Forest Areas Act, 2005; and the Kerala Restriction on Cutting and Destruction of Valuable Trees Act, 1974 — together with two decades of participatory forest management and community-based conservation.

3.8 Landslide-Prone Terrain: A Differentiated Approach

Keralam's terrain requires differentiated, rather than blanket, treatment even within landslide-prone districts. In Wayanad, for instance, the western part of the district is steep, undulating terrain (300–2,100 m elevation) descending sharply toward the lowlands of Kannur and Kozhikode, and these high-susceptibility slopes with natural vegetation have been included in the State's ESA proposal in full. The eastern part of the district, by contrast, is relatively flat, contiguous with the Deccan Plateau, largely under agriculture, with negligible natural vegetation and population densities of several hundred persons per square kilometre. The State's proposal accordingly includes areas of medium and high landslide susceptibility that coincide with natural vegetation, while excluding flatter, populated, low-susceptibility segments of the same villages — reflecting the principle that hazard-based conservation should track actual terrain and vegetation characteristics rather than administrative village boundaries.

3.9 Emerging Environmental Challenges

Keralam's Western Ghats face a combination of emerging pressures, including human–wildlife conflict, invasive species, climate extremes, habitat fragmentation, water scarcity, tourism pressure, infrastructure development and agricultural distress. The State's approach to the WGESA is informed by this integrated environmental lens, and is aligned with national priorities under the State Action Plan on Climate Change (SAPCC) and Mission LiFE.

3.10 The Case for a Differentiated Strategy

The Government of Keralam respectfully submits that while the ecological importance of the Western Ghats within the State is unquestionable, the combination of high population density, extensive land reform and fragmentation,

a village system that functions as an administrative rather than cultural unit, a plantation economy of major national importance, an already extensive and expanding protected-area and forest network, and terrain that varies sharply within single villages, together necessitate a scientifically differentiated approach to delineation. Such an approach enhances the precision and effectiveness of environmental regulation rather than diluting ecological safeguards, and is consistent with the objectives of the Environment (Protection) Act, 1986.

4. Methodology for Delineation

4.1 Rationale

Revenue villages are smallest administrative units created for land administration and often contain a heterogeneous mix of reserved and vested forests, wildlife habitats, plantations, agricultural holdings, townships, settlements and public infrastructure. Applying uniform regulation across an entire village may not correspond to the actual distribution of ecologically significant natural ecosystems. The Government therefore undertook a reassessment aimed at improving the spatial accuracy of the proposed ESA — distinguishing ecologically contiguous natural landscapes from long-established cultural landscapes — without compromising the underlying conservation objectives of the Act.

4.2 Guiding Scientific Principles

- Ecological integrity — priority to contiguous natural ecosystems, wildlife habitats and river catchments with natural landscapes.
- Spatial precision — GIS integration of satellite imagery, revenue data and forest boundary and topographic records.
- Ground verification — field validation by District Level Committees, Forest Department officials and LSGIs.
- Participatory validation — publication of draft spatial layers for local scrutiny and technically verified correction.
- Scientific objectivity — analysis based solely on ecological characteristics, independent of ownership or development interests.

This process marked a transition from a purely administrative delineation — necessarily reliant on village boundaries — to a scientifically informed ecological delineation focused on contiguous natural forests, ecologically connected habitats,

major watersheds, wildlife movement areas and natural vegetation complexes, while examining settlements, plantations and public infrastructure separately to assess whether their inclusion would meaningfully advance ecological objectives.

5. Scientific Justification for the Proposed 98 Village Landscape

5.1 Ecological Integrity and Landscape Connectivity

The proposed 98 village Ecologically Sensitive Area was identified not to maximise geographical extent but to capture the landscape components that sustain ecological integrity — contiguous natural forests, wildlife corridors, upper watershed ecosystems, riparian forests, montane grasslands and shola forests, river catchments and biodiversity rich vegetation. This landscape-ecology approach recognises that ecological processes such as nutrient cycling, pollination, wildlife movement, carbon sequestration and water regulation operate across interconnected systems rather than within isolated administrative units, and gives priority to large contiguous forest complexes, connected natural vegetation, upper catchment forests and ecologically significant river basins.

5.2 Basis for the Revised Extent: From 13,108 to 9,993.7 to 8,590.69 sq. kms

The reduction in proposed extent across successive drafts reflects progressively more reliable data rather than a weakening of conservation intent. The HLWG reported the total village area of the 123 villages, i.e., 13108 sq. km as ESA, without considering extensive cultural landscapes in these villages. The 9,993.7 sq. km figure recommended by the State Expert Committee in 2013 — comprising a stated 9,107 sq. km of forest area and 886.7 sq. km of non-forest area — was, on review, found to rest on administrative estimation rather than authenticated geospatial verification. The 9,107 sq. km forest figure was taken from Forest Department administrative reports (2008–2013) recording the State's total Reserve Forest area — attributed to the 123 villages without village-level geospatial confirmation. It is, in fact, not feasible to identify 9,107 sq. km of forest exclusively within those villages.

The present proposal of 8,590.69 sq. km corrects this by substituting authenticated micro-level GIS analysis, field verification and the recommendations of District Level Screening Committees (DLSCs) and Local Self-Government Institutions (LSGs) for the earlier administrative estimate. It therefore represents a more

scientifically robust, geospatially verified and administratively implementable figure than either of its predecessors, retaining ecologically significant natural landscape while excluding plantations, settlements, agricultural land and other developed cultural landscapes that do not warrant regulation under the Notification.

5.3 Representative Ecosystems Covered

The proposed landscape includes representative examples of the Western Ghats' principal ecosystems in Keralam: tropical evergreen forests (the ecological core, with the highest biodiversity and endemism), semi-evergreen and moist deciduous forests (transitional and buffer ecosystems supporting large fauna), montane shola–grassland ecosystems (regulating streamflow and perennial springs), riparian forests (maintaining water quality and aquatic biodiversity) and high-altitude catchments (sustaining groundwater recharge and perennial rivers).

5.4 Hydrological, Climatic and Disaster-Resilience Value

Protection of these landscapes directly supports hydrological security — rainfall interception, groundwater recharge, streamflow regulation, flood moderation and sediment control — sustaining nearly every major river in Keralam. It also contributes to India's climate commitments through carbon sequestration and storage, local climate regulation and moisture recycling, aligning with the Nationally Determined Contributions, the National Action Plan on Climate Change, the Green India Mission and Mission LiFE. Intact natural vegetation additionally stabilises slopes, reduces erosion and moderates runoff; while landslide risk depends on multiple geological and hydrological factors and is not treated as a stand-alone criterion, conservation of natural vegetation remains an important component of disaster resilience.

5.5 Correcting Legacy Errors in Forest Spatial Boundaries

The scientific credibility of the proposal has also required correcting significant legacy errors in the spatial boundaries maintained by the State Forest Department. A substantial proportion of the recorded extent of legal forest in Keralam continues to rest on Survey of India toposheets prepared in the 1960s and 1970s, which were never comprehensively updated to reflect subsequent denotification of forest land for allotment to landless families and other approved non-forest purposes. As a result, the Forest Department's spatial layers in several instances continue to depict land that has since developed into settled townships as Reserved Forest. The

present exercise identified a number of such instances — most notably the established townships of Kattappana, Adimali and Nedumkandam in Idukki district, each with substantial resident populations, markets, educational institutions and public infrastructure, yet continuing to appear as Reserved Forest in the Forest Department's spatial records despite having been legally denotified and settled decades earlier. Comparative maps illustrating these discrepancies are annexed to this proposal (**Annexure II**).

The present proposal corrects all such identified errors to the maximum extent possible, based on available revenue and field-verification records. Given the scale and vintage of the underlying records, the Government does not represent this reconciliation as exhaustive at this stage; further refinement will follow as the State's ongoing digital cadastral survey progresses, and any residual discrepancies will be corrected in consultation with the Forest and Revenue Departments — without prejudice to the scientific validity of the areas already verified and proposed for notification.

5.6 Why 98 Villages are Scientifically Adequate?

The Government respectfully submits that the proposed 98 villages, verified through GIS analysis, field validation and district-level scrutiny, adequately represent the ecologically functional landscape of the Western Ghats in Keralam — its major forest complexes, catchments and biodiversity-rich habitats — and therefore provide a scientifically sound and legally sustainable basis for immediate notification. The reduction in proposed extent across successive drafts — from 13,108 sq. km, to 9,993.7 sq. km, to the present 8,590.69 sq. km — reflects progressive scientific refinement rather than a weakening of conservation intent.

6. Keralam's Response to the Expert Committee's Observations

The Government of Keralam extended full cooperation to the Expert Committee constituted by the MoEFCC and has carefully examined its previous observations, several of which are addressed below.

6.1 Ecological Continuity and Landscape Connectivity

The Committee emphasised that the notified landscape should not become ecologically fragmented. The Government submits that ecological continuity is better assessed by functional ecological connectivity than by mere geographical

contiguity, and should be weighed alongside existing land use, ecological value, and socio-economic realities. The Western Ghats is, moreover, a transboundary ecosystem: contiguous forest and Protected Areas continue across the State boundary into Tamil Nadu, and the principle of uninterrupted geographical continuity has not been applied uniformly across all Western Ghats States, including in the adjoining Tamil Nadu stretch. Areas proposed for exclusion, particularly within the Cardamom Hill Reserve, have in any event already been substantially transformed into cultural landscapes of plantations, settlements and associated infrastructure, such that their original natural connectivity has long been modified by human land use. The proposed 98 villages retain the principal ecological framework of the Western Ghats in Keralam. The State remains committed to protecting the existing natural landscapes and their adjoining cultural landscapes, maintaining ecological connectivity and integrity, and promoting a balanced approach to conservation that safeguards the ecological functions of the Western Ghats while recognising established land use and livelihood requirements.

6.2 The Cardamom Hill Reserve

The Cardamom Hill Reserve comprises long-established cardamom plantations, settlements and associated infrastructure, forming a distinctive plantation landscape that has historically been governed under a dedicated legal and administrative framework. Cardamom cultivation in the Reserve is carried out largely under regulated shade and is closely associated with the maintenance of vegetation cover and the ecological conditions of the region. Keralam accounts for a major share of India's cardamom production, with substantial cultivation concentrated in the Idukki region.

The Reserve is already subject to the Cardamom Rules (Travancore), 1935 and the Rules for Lease of Government Lands for Cardamom Cultivation, 1961, which prescribe specific conditions for land use and cultivation, including restrictions on indiscriminate felling and large-scale clearing of vegetation. It is also relevant to note that the Kerala Preservation of Trees Act, 1986, is already applicable throughout the Cardamom Hill Reserves. These provisions, together with the applicable State and Central environmental and forest laws, provide an established regulatory framework for maintaining the ecological integrity of the Reserve.

In view of the existing dedicated and stringent regulatory safeguards, there is no regulatory vacuum warranting an additional ESA-specific regulatory regime for the Cardamom Hill Reserve. Inclusion of the Reserve under such a framework may result in overlapping or duplicative regulatory requirements over an already regulated and inhabited plantation landscape and may adversely affect established cultivation and livelihood systems. The State, therefore, considers that the existing legal framework, supplemented where necessary by appropriate conservation-oriented and incentive-based measures, is adequate to ensure ecological protection without imposing an additional layer of regulatory restrictions.

6.3 Landslide Susceptibility and Disaster Resilience

The Government concurs that climate change has increased the frequency of high-intensity rainfall and that natural vegetation supports slope stability, and has accordingly included high and very-high-susceptibility zones that coincide with natural vegetation within the proposed ESA. However, some of the areas proposed for exclusion are long-established plantation landscapes and settlements rather than natural forest, and landslide occurrence is governed by the interaction of geology, geomorphology, hydrology and land use rather than any single factor; the Government submits that disaster risk in such areas is more appropriately managed through land-use planning, building regulation, hazard zonation and disaster management measures than through ESA notification alone. The State Disaster Management Department itself published the landslide susceptibility zones in the State, as prepared by Geological Survey of India (GSI) and restricted the adverse activities in such regions.

6.4 Forest Cover Decline Trends in the Excluded Villages

The Government notes that forest cover reported in the India State of Forest Report does not represent natural forest alone: depending on canopy density, it also captures tree cover associated with rubber, coffee, cardamom and mixed plantations, pepper vines and other agroforestry systems. Periodic harvesting, replanting and crop replacement in such plantation landscapes produce fluctuations in canopy cover across successive assessments that reflect ordinary agricultural cycles rather than deforestation, and the proposed Notification does not restrict the felling of trees or routine, lawful plantation management. Natural forests and other ecologically important habitats will, in any event, continue to be protected through the Forest (Conservation) provisions and other applicable Central and State law irrespective of ESA status.

6.5 Availability and Reliability of Spatial Data

Village-wise geospatial data is not readily available because the Forest Department maintains its records on a division or range-wise basis rather than in a harmonised village-level GIS database, and comparable village-wise data on wetlands, wildlife corridors and the applicability of various State conservation laws is similarly not consolidated; generating it would require an intensive, inter-departmental exercise drawing on the Forest, Revenue, Survey and Local Self-Government Departments. The Wildlife Division-wise details as received from the Forest Department are enclosed as **Annexure III**. Compounding this, a substantial proportion of the Forest Department's existing spatial layers is itself derived from Survey of India toposheets of the 1960s and 1970s and has not been comprehensively updated to reflect subsequent, legally valid denotification of forest land — resulting, in identified instances, in established townships such as Kattappana, Adimali and Nedumkandam in Idukki district continuing to appear as Reserved Forest in Forest Department records (comparative maps annexed).

6.6 Paddy Land, Wetland and River-System Data for ESA Villages

The Expert Committee has further sought village-wise details of paddy lands and wetlands within the proposed ESA, as maintained under the Kerala Conservation of Paddy Land and Wetland Act, 2008, together with particulars of the west-flowing and east-flowing rivers originating from the Western Ghats in Keralam. The Kerala State Remote Sensing and Environment Centre (KSREC), the designated agency maintaining the digital data bank of paddy lands and wetlands under the said Act, has furnished data in respect of the 500 villages for which its State-wide data collation exercise currently stands completed; of these, only 8 villages fall within the limits of the proposed ESA. The extent of paddy lands and water bodies in these 8 ESA villages, as received from KSREC, is enclosed as **Annexure IV**. Data collation in respect of the remaining villages is in progress and will take some time to complete; the corresponding details, including those of any further ESA villages that may be identified thereupon, will be submitted as and when received. As regards the river systems of the Western Ghats in Keralam, the State's major rivers comprise 41 west-flowing rivers, running from the Western Ghats to the Arabian Sea, and 3 east-flowing rivers — the Kabini, Bhavani and Pambar — which drain eastward into Tamil Nadu; the complete list is enclosed as **Annexure V**.

6.7 Delineating Part-Villages Rather than Entire Villages

The Ministry's own first draft ESA Notification of 10 March 2014, accepting the State's proposal to restrict the ESA to 9,993.7 sq. km rather than the full 13,108 sq. km recommended by the HLWG, already established the principle that notification may be restricted to scientifically identified areas within a village rather than its entire geographical extent. Extending regulation to entire villages would unnecessarily cover settlements, plantations, agricultural land and public infrastructure lying outside the actual ecologically sensitive area; with authenticated GIS-based spatial data now available, ESA boundaries can be precisely identified, monitored and regulated without such overreach. This approach reflects the principles of proportionality, precision and good governance, and is expected to reduce avoidable public concern, disputes and litigation while improving compliance and enforcement.

6.8 Implementation Mechanism for Sub-Village Delineation

Modern GIS, remote sensing and high-resolution mapping technologies enable precise identification, monitoring and enforcement of notified ESA boundaries even where the village is not treated as the basic implementation unit. The Government proposes to establish a dedicated Western Ghats Eco-Sensitive Area Management Cell under the Environment Department as the nodal agency for implementation, which would also support broader conservation efforts within the notified villages.

6.9 Relaxations Sought for Specific Activities within the ESA Villages

Recognising Keralam's transition from an agrarian to a service-based economy, the prevalence of homestead farming and the State's developmental needs, the Government has sought case-by-case flexibility for a limited set of activities otherwise falling in the Red Category: dairy processing (supporting roughly 2.5 lakh registered dairy farmers and over 3,000 cooperative societies that procured 6,780.22 lakh litres of milk in 2023–24) and meat processing and conventional slaughter houses (addressing a demand-supply gap against the backdrop of the Kerala Chicken scheme); Common Effluent Treatment Plants serving the small and medium industries concentrated in highland townships such as Munnar, Kumily, Kattappana, Nedumkandam and Adimali; DG sets above 5 MVA for hospitals, medical colleges and industrial parks; hotels with wastewater generation of 100

KLD or more, given tourism's contribution of ₹43,621 crore to the State economy in 2023; new healthcare establishments, given the terrain, connectivity constraints and disaster-preparedness needs of the highlands; Pumped Storage Hydroelectric Projects already shortlisted in Idukki and Wayanad, supporting grid integration of renewable energy and the State's 2050 carbon-neutrality commitment; and provision for disaster-rehabilitation townships exceeding 50 hectares where a resettlement plan is required following extreme natural hazards. A detailed report outlining the relaxations sought in respect of certain Red Category industries is enclosed as **Annexure VI**.

6.10 State's Position on the Inclusion of New Villages

The Government does not, at this stage, support inclusion of any village beyond the 131 already covered under the draft notifications; doing so would require fresh scientific assessment, field verification, stakeholder consultation and a specific policy decision of the State Government, and risks avoidable administrative, legal and social disruption that could affect public acceptance of the Notification as a whole.

6.11 Safeguards for Excluded Areas and Livelihood Concerns

The Government clarifies that areas excluded from the proposed ESA are not environmentally unregulated: Reserved Forests, Protected Areas and other legally protected forests within them remain fully protected under the Indian Forest Act, Forest (Conservation) provisions, the Wildlife (Protection) Act and other applicable Central and State law. The revised proposal seeks to concentrate WGESA-specific regulation on ecologically significant natural landscapes while avoiding unnecessary overlap with long-established settlements and agriculture — consistent with the shared objective, reaffirmed at the 15 July 2026 meeting with the Hon'ble Chief Minister, of protecting biodiversity without adversely affecting local livelihoods.

6.12 Convergence of Objectives

The Government submits that there is substantial convergence between its position and that of the Expert Committee on biodiversity conservation, ecological continuity, watershed protection, climate resilience, disaster-risk reduction and livelihood protection. The principal outstanding issues concern the precise delineation of a limited number of landscapes, not a difference in conservation

philosophy — and are best resolved through the existing environmental safeguards mentioned below.

7. Environmental Safeguards beyond the WGESA Notification

Environmental protection in Keralam does not depend on a single notification. Areas outside the proposed ESA remain governed by an extensive, multi-layered framework:

- Forest conservation law governs diversion of the roughly one-third of Keralam's area under recorded forest, including Reserved and Protected Forests.
- An extensive Protected Area network — National Parks, Wildlife Sanctuaries, Tiger Reserves, Conservation and Community Reserves — is managed under the Wildlife (Protection) Act, 1972, with Eco-Sensitive Zones providing an additional regulatory buffer.
- The Biological Diversity Act, 2002 operates through Biodiversity Management Committees and People's Biodiversity Registers at the LSGI level.
- Wetlands, rivers and groundwater are protected through Central Rules and State legislation.
- Projects with significant environmental impact require clearance under the Environmental Impact Assessment Notification issued under the Environment (Protection) Act, 1986.
- Climate and disaster risk are addressed through the State Action Plan on Climate Change and the Kerala State Disaster Management Authority under the Disaster Management Act, 2005.
- Local Self-Government Institutions play an active role in land-use planning, biodiversity conservation and water-resource protection.

The proposed WGESA notification should therefore be understood as an additional, strategic layer of protection for scientifically identified landscapes, complementing — not substituting for — this existing legal and institutional architecture.

8. Conclusion and Submission

8.1 Conclusion

The Government of Keralam reaffirms its firm and continuing commitment to the conservation and ecological integrity of the Western Ghats. The State's approach to the present proposal is founded not on dilution of environmental protection, but on ensuring that conservation measures are scientifically appropriate, legally coherent and responsive to the ecological, social and economic characteristics of the landscape.

Over the past decade, Keralam has substantially strengthened its environmental governance through statutory protection, ecological restoration, watershed conservation, biodiversity management and community-based environmental programmes. The Haritha Keralam Mission, has facilitated extensive water-body and stream rejuvenation and the establishment of more than 4,100 '*Pachathuruthu*' (Green Islets) covering over 1,200 acres, reflecting the State's emphasis on decentralised ecological restoration and landscape-level environmental management.

The effectiveness of these sustained conservation efforts is also reflected in the assessments undertaken by institutions under the Ministry of Environment, Forest and Climate Change. According to the India State of Forest Report (ISFR) published by the Forest Survey of India, Keralam's forest cover increased from 18,383.95 sq. km in 2013 to 22,059.36 sq. km in 2023, representing an increase of 3,675.41 sq. km, or approximately 20 per cent over the decade. The 2023 assessment places Keralam's forest cover at approximately 56.78 per cent of the State's geographical area.

The State's conservation outcomes are further reflected in the All India Tiger Estimation, undertaken under the National Tiger Conservation Authority in collaboration with the Wildlife Institute of India and the tiger States. Keralam's estimated tiger population increased from 136 in 2014 to 190 in 2018 and 213 in 2022, demonstrating the continued ecological functionality of the State's forest and wildlife landscapes and the effectiveness of sustained habitat and wildlife conservation measures.

These outcomes, together with the expansion and strengthening of protected areas, ecological restoration initiatives, biodiversity conservation programmes and

watershed-management interventions, demonstrate that Keralam's Western Ghats landscape is already subject to sustained and multifaceted conservation efforts. The landscape proposed by the State is therefore not an unregulated area awaiting environmental protection. Different components of the Western Ghats in Keralam are already governed by a comprehensive network of Central and State enactments, rules, notifications and management regimes relating to forests, wildlife, biodiversity, water resources, land use and environmental protection.

In several landscapes, including paddy lands, plantations and the Cardamom Hill Reserve, specific statutory and regulatory regimes provide controls that are more targeted and, within their respective fields of application, more stringent than the general regulatory framework contemplated under an ESA notification. The proposed ESA framework should therefore be considered in the context of these existing legal protections and conservation measures, with due regard to the need to avoid unnecessary overlap or duplication of regulatory mechanisms.

The revised proposal accordingly seeks to secure the ecological integrity and continuity of the Western Ghats while recognising the established character of inhabited, cultivated and other cultural landscapes. The State remains committed to protecting existing natural landscapes and their adjoining cultural landscapes, maintaining ecological connectivity and ecological functions, restoring degraded ecosystems and strengthening climate resilience through appropriate conservation and restoration measures.

The Government of Keralam therefore submits that the revised proposal represents a scientifically informed, legally coherent and balanced approach to Western Ghats conservation, integrating ecological imperatives with the constitutional mandate of sustainable development and the legitimate livelihood and developmental interests of the people of the State.

In view of the foregoing, the Government of Keralam respectfully submits that the revised proposal covering **8,590.69 sq. km of land within 98 villages** may be accepted as the State's final proposal for notification of the Western Ghats Ecologically Sensitive Area in Keralam. Final notification of the scientifically verified 98-village landscape would mark a significant milestone in Western Ghats conservation and demonstrate evidence-based environmental governance, reflecting a landscape whose assessment stands complete, robust and ready for implementation without further deferral.

8.2 Submission

In the above circumstances, the Government of Keralam respectfully requests the Ministry of Environment, Forest and Climate Change to:

- **Accept the scientifically delineated Ecologically Sensitive Area measuring 8,590.69 sq. km falling within 98 revenue villages as the final proposal of the Government of Keralam for notification as the Western Ghats Ecologically Sensitive Area. The delineation is based on authenticated geospatial analysis, field-level validation, district-level scrutiny and local-level verification, and is intended to ensure precise protection of ecologically significant natural landscapes while avoiding unnecessary extension of ESA-specific regulation to long-established settlements, agricultural areas, plantations, and other modified cultural landscapes.**
- **Confine the prohibitions, restrictions and regulatory provisions of the WGESA notification strictly to the delineated ESA area. The mere inclusion of a portion of a revenue village within the ESA shall not result in extension of ESA provisions to the entire village. The non-ESA portions of the 98 villages, as identified through the authenticated spatial delineation, shall remain outside the purview of the WGESA notification. Accordingly, the practice of applying ESA regulations uniformly to an entire revenue village may be discontinued in favour of precise, spatially delineated regulation based on the notified ESA boundary.**
- **Issue the Final Notification under Section 3 of the Environment (Protection) Act, 1986 read with Rule 5 of the Environment (Protection) Rules, 1986 for this verified landscape.**
- **Promote ecosystem restoration, watershed conservation, climate adaptation and sustainable livelihood programmes within the notified landscape through convergence of existing Central and State schemes, with active participation of LSGIs and local communities.**

The Government of Keralam respectfully submits that notification of the verified 98 village landscapes would provide a scientifically grounded, legally coherent and administratively workable framework for conservation of the Western Ghats in Keralam, while complementing rather than duplicating the substantial statutory protections and conservation measures already in force. The State accordingly requests the Ministry to take the proposal forward for final notification in the interests of effective, equitable and enduring conservation of the Western Ghats.

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Annexure I

Details of 98 villages proposed for ESA Notification

Thiruvananthapuram				
Sl. No.	**Taluk**	**Village**	**Village Area (sq.km)**	**ESA (sq.km)**
1	Kattakkada	Amboori	15.53	01.97
2	Kattakkada	Vazhichal	126.50	114.24
3	Nedumangad	Peringammala	166.54	120.46
4	Nedumangad	Thennur	102.51	77.70
5	Nedumangad	Vithura	155.92	130.47
Total			**567.00**	**444.84**

Kollam				
Sl. No.	**Taluk**	**Village**	**Village Area (sq.km)**	**ESA (sq.km)**
6	Pathanapuram	Piravanthur	148.47	110.32
7	Pathanapuram	Punnala	49.59	36.78
8	Punalur	Aryankavu	147.97	112.47
9	Punalur	Channapetta	22.35	12.97
10	Punalur	Edamon	60.85	42.11
11	Punalur	Kulathupuzha	329.55	317.04
12	Punalur	Thenmala	70.99	46.03
13	Punalur	Thingalkarikkakom	59.36	46.57
Total			**889.13**	**724.29**

Pathanamthitta				
Sl. No.	**Taluk**	**Village**	**Village Area (sq.km)**	**ESA (sq.km)**
14	Konni	Aruvappulam	458.80	424.08
15	Konni	Chittar	22.03	02.07
16	Konni	Seethathodu	577.47	542.12
17	Konni	Thannithodu	174.86	145.39
18	Ranni	Kollamula	59.94	27.55
19	Ranni	Perunad	192.68	142.96
20	Ranni	Vadasserikkara	57.23	24.08
Total			**1543.01**	**1308.25**

Idukki				
Sl. No.	**Taluk**	**Village**	**Village Area (sq.km)**	**ESA (sq.km)**
21	Devikulam	Anaviratty	24.28	02.85
22	Devikulam	Edamalakkudy	222.75	222.75
23	Devikulam	Kanthaloor	47.85	33.83
24	Devikulam	KDH	210.73	49.22
25	Devikulam	Keezhanthoor	67.33	49.32
26	Devikulam	Kottakamboor	35.27	23.02
27	Devikulam	Mankulam	107.88	70.48
28	Devikulam	Mannamkandam	195.78	143.69
29	Devikulam	Marayur	110.16	95.88
30	Devikulam	Munnar	141.15	35.76
31	Devikulam	Pallivasal	37.83	08.13
32	Devikulam	Vattavada	31.19	16.36
33	Devikulam	Vellathooval	26.19	01.01
34	Idukki	Idukki	248.09	206.89
35	Idukki	Kanchiyar	78.79	39.13
36	Idukki	Kanjikuzhi	93.11	37.62
37	Peerumedu	Kumily	187.67	149.58
38	Peerumedu	Manjumala	87.29	42.45
39	Peerumedu	Mlappara	569.94	565.65
40	Peerumedu	Peerumedu	47.43	04.26
41	Peerumedu	Periyar	68.23	14.06
42	Peerumedu	Peruvanthanam	75.73	14.29
43	Peerumedu	Upputhara	40.55	04.22
44	Thodupuzha	Udumpannoor	85.84	35.16
45	Udumbanchola	Bisonvalley	38.14	03.65
46	Udumbanchola	Chinnakkanal	67.05	09.62
47	Udumbanchola	Pooppara	41.24	15.85
48	Udumbanchola	Santhampara	37.98	00.74
Total			**3025.47**	**1895.47**

Ernakulam				
Sl. No.	**Taluk**	**Village**	**Village Area (sq.km)**	**ESA (sq.km)**
49	Kothamangalam	Kuttampuzha	519.28	476.19
Total			**519.28**	**476.19**

Thrissur				
Sl. No.	**Taluk**	**Village**	**Village Area (sq.km)**	**ESA (sq.km)**
50	Chalakkudy	Athirapally	348.59	340.46
51	Chalakkudy	Pariyaram	341.76	302.95
Total			**690.35**	**643.41**

Palakkad				
Sl. No.	**Taluk**	**Village**	**Village Area (sq.km)**	**ESA (sq.km)**
52	Alathur	Kizhakkancheri-I	41.72	00.97
53	Attappady	Agali	76.37	07.08
54	Attappady	Kallamala	76.00	47.68
55	Attappady	Kottathara	73.44	33.62
56	Attappady	Padavayal	282.43	252.41
57	Attappady	Pudur	98.50	81.84
58	Attappady	Sholayoor	122.40	85.22
59	Chittoor	Muthalamada-I	235.00	174.25
60	Chittoor	Nelliyampathy	393.02	327.61
61	Mannarkkad	Palakkayam	112.61	67.05
62	Palakkad	Malampuzha-I	126.28	107.34
63	Palakkad	Pudusseri East	69.34	43.74
64	Palakkad	Puthupariyaram I	77.14	60.43
Total			**1784.25**	**1289.24**

Malappuram				
Sl. No.	**Taluk**	**Village**	**Village Area (sq.km)**	**ESA (sq.km)**
65	Nilambur	Akampadam	90.57	57.88
66	Nilambur	Amarambalam	84.79	36.77
67	Nilambur	Chokkad	53.61	30.08
68	Nilambur	Kalikavu	38.89	08.46
69	Nilambur	Karulayi	285.60	258.93
70	Nilambur	Karuvarakundu	39.14	11.24
71	Nilambur	Kerala Estate	41.41	14.12
72	Nilambur	Kurimbalangode	83.79	44.10
73	Nilambur	Pothukallu	150.15	117.93
74	Nilambur	Vazhikadavu	139.20	101.60
Total			**1007.15**	**681.11**

Kozhikode				
Sl. No.	**Taluk**	**Village**	**Village Area (sq.km)**	**ESA (sq.km)**
75	Koilandi	Chakkittappara	113.05	89.27
76	Koilandi	Chembanoda	50.14	33.69
77	Thamarassery	Kattippara	32.32	16.09
78	Thamarassery	Kodancheri	57.73	14.73
79	Thamarassery	Nellippoyil	50.51	29.67
80	Thamarassery	Puthuppadi	45.44	12.16
81	Thamarassery	Thiruvambadi	70.77	27.62
82	Vadakara	Kavilampara	92.04	42.25
83	Vadakara	Thinur	40.66	10.63
Total			**552.66**	**276.11**

Wayanad				
Sl. No.	**Taluk**	**Village**	**Village Area (sq.km)**	**ESA (sq.km)**
84	Mananthavadi	Periya	62.67	27.24
85	Mananthavadi	Thirunelli	147.15	122.50
86	Mananthavadi	Thondernad	96.70	67.69
87	Mananthavadi	Thrissilery	54.58	28.99
88	Sulthanbethery	Kidanganad	176.44	162.57
89	Sulthanbethery	Noolpuzha	125.36	100.36
90	Vaithiri	Chundel	21.93	6.95
91	Vaithiri	Kottappadi	58.68	24.11
92	Vaithiri	Kunnathidavaka	26.13	10.36
93	Vaithiri	Pozhuthana	50.81	29.56
94	Vaithiri	Thariyod	54.49	50.60
95	Vaithiri	Vellarimala	54.82	35.34
Total			**929.76**	**666.27**

Kannur				
Sl. No.	**Taluk**	**Village**	**Village Area (sq.km)**	**ESA (sq.km)**
96	Iritty	Aralam	118.10	42.73
97	Iritty	Kottiyur	97.65	66.20
98	Thalassery	Cheruvanchery	98.33	76.58
Total			**314.08**	**185.51**

Summary

District	No. of Villages	Total Village Area (sq.km)	Total ESA (sq.km)
Thiruvananthapuram	5	567.00	444.84
Kollam	8	889.13	724.29
Pathanamthitta	7	1543.01	1308.25
Kottayam	0	0	0
Idukki	28	3025.47	1895.47
Ernakulam	1	519.28	476.19
Thrissur	2	690.35	643.41
Palakkad	13	1784.25	1289.24
Malappuram	10	1007.15	681.11
Kozhikode	9	552.66	276.11
Wayanad	12	929.76	666.27
Kannur	3	314.08	185.51
Grand Total	**98**	**11822.14**	**8590.69**

Village-wise comparison between new proposal and Draft Notification dated 27.07.2026

District	No. of Villages		Excluded Village	Included Village
	Draft ESA	New		
Thiruvananthapuram	7	5	Kallikad, Mannoorkara	
Kollam	8	8	No Changes	
Pathanamthitta	7	7	No Changes	
Kottayam	4	0	Poonjar Thekkekkara, Teekoy, Koottickal, Melukavu	
Idukki	51	28	Anakkara, Anavilasom Arakkulam, Ayyappankovil, Chakkupallom Chathurangappara Erattayar*, Kalkoonthal Kanthipara, Karunapuram Kokkayar, Konnathady Kunjithanny, Kattappana Pampadumpara Parathodu, Rajakkad Rajakumari, Thankamany Udumbanchola Upputhodu, Vandanmedu Vathikudi	Munnar*, Edamalakkudy*, Vellathooval, Anaviraty (*Devikulam Taluk*); Kanchiyar* (*Idukki Taluk*); Peerumedu (*Peerumedu Taluk*); Santhanpara (*Udumbanchola Taluk*)
Ernakulam	1	1	No Changes	
Thrissur	2	2	No Changes	
Palakkad	14	13	Muthalamada II	
Malappuram	11	10	Chungathara	Pothukallu*
Kozhikode	10	9	Kedavur	Kattippara*
Wayanad	13	12	Achoornam	
Kannur	3	3	No Changes	
Grand Total	**131**	**98**		

** Bifurcated from old ESA villages and added as ESA villages*

Area wise comparison between new proposal and Draft Notification dated 27.07.2026

District	Draft ESA Notification		New Proposal		Difference (sq.km)
	No. of Villages	Area (sq. km)	No. of Villages	Area (sq. km)	
Thiruvananthapuram	7	459.27	5	444.84	-14.43
Kollam	8	796.03	8	724.29	-71.74
Pathanamthitta	7	1392.50	7	1308.25	-84.25
Kottayam	4	22.99	0	0	-22.99
Idukki	51	2651.12	28	1895.47	-755.65
Ernakulam	1	595.89	1	476.19	-119.7
Thrissur	2	660.33	2	643.41	-16.92
Palakkad	14	1371.91	13	1289.24	-82.67
Malappuram	11	770.05	10	681.11	-88.94
Kozhikode	10	278.14	9	276.11	-2.03
Wayanad	13	740.64	12	666.27	-74.37
Kannur	3	254.91	3	185.51	-69.4
Grand Total	**131**	**9993.78**	**98**	**8590.69**	**-1403.09**

District-Wise Details of ESA										
Sl No	District	Number of Taluks	Draft Notificaion dated 27.07.2026			Proposal by State Govt. regarding villages in Notification dtd. 27.07.2026				Remarks
			Number of Villages	Area of Village under ESA (Ha) as per HLWG Report	ESA declared in respective villages (Ha)	Number of Villages	Area of village proposed under ESA (Ha) (as per revenue records)	Proposed to be included as final ESA (Ha)	Proposed to be excluded from ESA (Ha)	
1	Thiruvananthapuram	2	7	62169.97	45926.65	5	56700.63	44483.626	12217.00	2 villages excluded
2	Kollam	2	8	94215.60	79603.46	8	88913.03	72429.23	16483.80	
3	Pathanamthitta	2	7*	154056.51	139250.09	7	154301.16	130825.45	23475.70	1 village added due to bifurcation
4	Kottayam	2	4	15741.91	2298.74	0	0.00	0.00	0.00	All 4 villages excluded
5	Idukki	5	51*	385495.69	265112.33	28	302546.60	189545.53	113001.06	23 villages excluded & 4 villages added due to bifurcation
6	Ernakulam	1	1	65651.54	59589.37	1	51927.96	47619.41	4308.56	
7	Thrissur	1	2*	70842.09	66033.18	2	69034.77	64340.66	4694.10	1 village added due to bifurcation
8	Palakkad	5	14	184231.24	137190.40	13	178426.09	128924.10	49501.99	1 village excluded
9	Malappuram	1	11*	101184.69	77005.04	10	100713.74	68111.83	32601.91	1 village excluded & 1 village added due to bifurcation
10	Kozhikode	3	10*	51621.76	27814.67	9	55266.34	27611.29	27655.05	1 village excluded & 1 village added due to bifurcation
11	Wayanad	3	13	95132.62	74063.77	12	92975.31	66626.60	26348.71	1 village excluded
12	Kannur	2	3	30411.99	25491.69	3	31408.55	18551.35	12857.19	
	Total	**29**	**131***	**1310755.61**	**999379.38**	**98**	**1182214.17**	**859069.10**	**323145.08**	

** 123 + 8 newly added villages due to bifurcaton of ESA villages*

Summary

Number of villages as per draft Notification: **131**

Number of villages proposed for ESA: **98**

Number of villages not proposed for ESA: **33**

Taluk-wise Details of ESA villages										
Sl No	District	Taluk	Draft Notificaion dated 27.07.2026			Proposal by State Govt. regarding villages in Notification dtd. 27.07.2026				Remarks
			Number of Villages	Area of Village under ESA (Ha) as per HLWG Report	ESA declared in respective villages (Ha)	Number of Villages	Area of village proposed under ESA (Ha) (as per revenue records)	Proposed to be included as final ESA (Ha)	Proposed to be excluded from ESA (Ha)	
1	Thiruvananthapuram	Kattakada	4	26051.06	12032.83	2	14203.53	11620.03	2583.50	2 villages excluded
2	Thiruvananthapuram	Nedumangad	3	36118.91	33893.82	3	42497.10	32863.60	9633.50	
3	Kollam	Pathanapuram	2	13829.26	10654.88	2	19806.04	14710.37	5095.67	
4	Kollam	Punalur	6	80386.34	68948.42	6	69106.99	57718.86	11388.13	
5	Pathanamthitta	Konni	4	125270.78	118553.45	4	123315.45	111365.13	11950.32	
6	Pathanamthitta	Ranni	3	28785.73	20696.62	3	30985.71	19460.33	11525.38	
7	Kottayam	Kanjirappally	1	5109.82	1288.82	0	0.00	0.00	0.00	All villages excluded
8	Kottayam	Meenachil	3	10632.09	1009.92	0	0.00	0.00	0.00	All villages excluded
9	Idukki	Devikulam	14	115155.84	72896.13	13	125839.03	75229.11	50609.92	1 village excluded
10	Idukki	Idukki	9	75522.75	55319.88	3	41998.18	28364.56	13633.61	6 villages excluded
11	Idukki	Peerumedu	8	114598.66	81009.51	7	107684.36	79450.26	28234.10	1 village excluded
12	Idukki	Thodupuzha	2	11573.97	5831.52	1	8583.57	3516.28	5067.30	1 village excluded
13	Idukki	Udumbanchola	18	68644.47	50054.61	4	18441.46	2985.32	15456.14	14 villages excluded
14	Ernakulam	Kothamangalam	1	65651.54	59588.96	1	51927.96	47619.41	4308.56	
15	Thrissur	Chalakkudy	2	70842.09	66033.21	2	69034.77	64340.66	4694.10	
16	Palakkad	Alathoor	1	6574.39	1349.93	1	4171.92	96.68	4075.24	
17	Palakkad	Attappadi	6	73984.62	53545.44	6	72914.47	50785.43	22129.04	
18	Palakkad	Chittur	3	64775.07	51661.11	2	62802.63	50186.50	12616.13	1 village excluded
19	Palakkad	Mannarkad	1	11699.02	8239.12	1	11261.28	6704.94	4556.34	
20	Palakkad	Palakkad	3	27198.14	22395.53	3	27275.79	21150.55	6125.24	
21	Malappuram	Nilambur	11	101184.69	77004.71	10	100713.74	68111.83	32601.91	1 village excluded

Taluk-wise Details of ESA villages										
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			Number of Villages	Area of Village under ESA (Ha) as per HLWG Report	ESA declared in respective villages (Ha)	Number of Villages	Area of village proposed under ESA (Ha) (as per revenue records)	Proposed to be included as final ESA (Ha)	Proposed to be excluded from ESA (Ha)	
22	Kozhikkode	Koyilandy	2	16975.91	13228.29	2	16319.02	12295.85	4023.17	
23	Kozhikkode	Thamarassery	6	23401.95	10851.17	5	25677.32	10027.46	15649.86	1 village excluded
24	Kozhikkode	Vadakara	2	11243.90	3734.81	2	13270.01	5287.98	7982.03	
25	Wayanad	Mananthavady	4	36389.99	27060.02	4	36110.61	24642.97	11467.63	
26	Wayanad	Sulthanbathery	2	30069.16	28347.88	2	30179.74	26293.00	3886.74	
27	Wayanad	Vythiri	7	28673.47	18655.82	6	26684.96	15690.63	10994.33	1 village excluded
28	Kannur	Iritty	2	20310.57	16318.33	2	21575.05	10892.89	10682.16	
29	Kannur	Thalassery	1	10101.42	9173.36	1	9833.49	7658.46	2175.03	
	Total		**131***	**1310755.61**	**999378.10**	**98**	**1182214.17**	**859069.10**	**323145.08**	

** 123 + 8 newly added villages due to bifurcaton of ESA villages*

Village-wise Details of ESA

Sl No	District	Taluk	Draft Notificaion dated 27.07.2026			Proposal by State Govt. regarding villages in Notification dtd. 27.07.2026			Remarks
			Name of Village	Area of Village under ESA (Ha) as per HLWG Report	ESA declared in respective villages (Ha)	Area of village proposed under ESA (Ha) (as per revenue records)	Proposed to be included as final ESA (Ha)	Proposed to be excluded from ESA (Ha)	
1	Thiruvananthapuram	Kattakada	Amboori	3038.59	1001.13	1553.34	196.57	1356.77	
2	Thiruvananthapuram	Kattakada	Kallikkad	1544.50	440.73	1081.56	0.00	1081.56	Not included
3	Thiruvananthapuram	Kattakada	Manoorkkara	9552.49	7487.59	1756.65	0.00	1756.65	Not included
4	Thiruvananthapuram	Kattakada	Vazhichal	11915.48	10590.97	12650.19	11423.46	1226.73	
5	Thiruvananthapuram	Nedumangad	Peringammala	12456.92	9615.01	16653.98	12046.22	4607.76	
6	Thiruvananthapuram	Nedumangad	Thennur	11550.10	7796.40	10251.14	7769.94	2481.20	
7	Thiruvananthapuram	Nedumangad	Vithura	12111.89	8994.82	15591.98	13047.44	2544.54	
8	Kollam	Pathanapuram	Piravanthur	7605.82	6287.47	14846.79	11032.35	3814.44	
9	Kollam	Pathanapuram	Punnala	6223.44	4367.42	4959.25	3678.02	1281.24	
10	Kollam	Punalur	Aryankavu	16542.60	14475.64	14797.80	11247.46	3550.34	
11	Kollam	Punalur	Channapetta	3893.70	1157.45	2234.67	1296.63	938.04	
12	Kollam	Punalur	Edamon	9292.95	7607.28	6084.58	4210.84	1873.75	
13	Kollam	Punalur	Kulathupuzha	33743.73	32433.64	32955.09	31704.26	1250.83	
14	Kollam	Punalur	Thenmala	10378.98	8016.16	7099.14	4602.90	2496.24	
15	Kollam	Punalur	Thingalkarikkakom	6534.38	5258.25	5935.71	4656.77	1278.93	
16	Pathanamthitta	Konni	Aruvappulam	43924.83	42838.93	45879.62	42408.14	3471.48	
17	Pathanamthitta	Konni	Chittar*			2203.15	206.53	1996.63	Bifurcated from Chittar Seethathode Village
18	Pathanamthitta	Konni	Seethathodu	63649.13	60911.02	57746.54	54211.74	3534.79	
19	Pathanamthitta	Konni	Thannithodu	17696.82	14803.50	17486.14	14538.72	2947.43	
20	Pathanamthitta	Ranni	Kollamula	11992.71	11674.44	5993.80	2755.24	3238.56	

Village-wise Details of ESA

Sl No	District	Taluk	Draft Notificaion dated 27.07.2026			Proposal by State Govt. regarding villages in Notification dtd. 27.07.2026			Remarks
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21	Pathanamthitta	Ranni	Perunad	11993.63	7283.93	19269.01	14296.91	4972.11	
22	Pathanamthitta	Ranni	Vadasserikkara	4799.39	1738.25	5722.89	2408.18	3314.71	
23	Kottayam	Kanjirappally	Koottickal	5109.82	1288.82	5062.62	0.00	5062.62	Not included
24	Kottayam	Meenachil	Melukavu	2721.21	313.58	2351.68	0.00	2351.68	Not included
25	Kottayam	Meenachil	Poonjar Thekkekara	4237.29	279.25	3094.28	0.00	3094.28	Not included
26	Kottayam	Meenachil	Teekoy	3673.59	417.09	3479.71	0.00	3479.71	Not included
27	Idukki	Devikulam	Anaviratty	2256.13	195.24	2427.81	285.01	2142.81	
28	Idukki	Devikulam	Edamalakkudy*			22274.83	22274.83	0.00	Bifurcated from Kuttampuzha and KDH
29	Idukki	Devikulam	Kanthaloor	4834.87	3581.97	4784.77	3382.81	1401.96	
30	Idukki	Devikulam	KDH	48552.44	26203.71	21072.76	4922.24	16150.52	
31	Idukki	Devikulam	Keezhanthoor	6897.71	5901.03	6733.18	4932.32	1800.86	
32	Idukki	Devikulam	Kottakamboor	3666.14	3607.70	3526.80	2301.55	1225.25	
33	Idukki	Devikulam	Mankulam	7969.99	5243.62	10787.91	7047.55	3740.37	
34	Idukki	Devikulam	Mannamkandam	18436.26	13560.39	19578.18	14368.99	5209.19	
35	Idukki	Devikulam	Marayur	10508.01	9298.85	11016.27	9588.16	1428.10	
36	Idukki	Devikulam	Munnar*			14114.98	3575.59	10539.39	Bifurcated from KDH village
37	Idukki	Devikulam	Pallivasal	2746.89	783.20	3783.29	813.32	2969.97	
38	Idukki	Devikulam	Vattavada	3130.36	3079.30	3119.59	1635.64	1483.95	
39	Idukki	Devikulam	Vellathooval	3276.89	251.26	2618.65	101.09	2517.56	
40	Idukki	Devikulam	Kunjithanny	2880.15	1189.86	2177.41	0.00	2177.41	Not included

Village-wise Details of ESA									
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41	Idukki	Idukki	Idukki	27541.58	23547.05	24808.67	20689.18	4119.50	
42	Idukki	Idukki	Kanchiyar*			7878.96	3912.94	3966.02	Bifurcated from Ayypankovil & Anavilasam villages
43	Idukki	Idukki	Kanjikuzhi	7181.56	4155.04	9310.55	3762.45	5548.10	
44	Idukki	Idukki	Ayyappankovil	11357.82	9510.64	2280.86	0.00	2280.86	Not included
45	Idukki	Idukki	Kattappana	8231.46	1569.73	5973.37	0.00	5973.37	Not included
46	Idukki	Idukki	Konnathady	7199.68	6486.74	6826.20	0.00	6826.20	Not included
47	Idukki	Idukki	Thankamany	5453.29	3572.41	5218.29	0.00	5218.29	Not included
48	Idukki	Idukki	Upputhodu	3001.37	2443.57	2766.24	0.00	2766.24	Not included
49	Idukki	Idukki	Vathikudi	5555.99	4034.70	5354.35	0.00	5354.35	Not included
50	Idukki	Peerumedu	Kumily	19675.35	14682.52	18767.48	14957.56	3809.92	
51	Idukki	Peerumedu	Manjumala	8934.23	3135.52	8728.67	4244.66	4484.01	
52	Idukki	Peerumedu	Mlappara	57934.82	56621.67	56994.17	56564.91	429.27	
53	Idukki	Peerumedu	Peerumedu	4620.97	946.40	4742.68	426.29	4316.39	
54	Idukki	Peerumedu	Periyar	6937.65	2289.38	6823.30	1406.01	5417.29	
55	Idukki	Peerumedu	Peruvanthanam	7898.08	152.55	7573.21	1429.31	6143.90	
56	Idukki	Peerumedu	Upputhara	3022.57	2908.17	4054.85	421.52	3633.33	
57	Idukki	Peerumedu	Kokkayar	5574.99	273.30	5254.26	0.00	5254.26	Not included
58	Idukki	Thodupuzha	Udumpannoor	8052.30	4539.72	8583.57	3516.28	5067.30	
59	Idukki	Thodupuzha	Arakkulam	3521.67	1291.80	3417.02	0.00	3417.02	Not included
60	Idukki	Udumbanchola	Bisonvalley	4708.01	4238.32	3813.64	364.88	3448.76	

Village-wise Details of ESA									
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61	Idukki	Udumbanchola	Chinnakkanal	6619.99	3056.10	6705.41	961.56	5743.85	
62	Idukki	Udumbanchola	Pooppara	4548.33	4077.81	4124.37	1585.30	2539.07	
63	Idukki	Udumbanchola	Santhampara	3689.71	3400.95	3798.04	73.58	3724.46	
64	Idukki	Udumbanchola	Anakkara	3862.47	1153.98	3863.37	0.00	3863.37	Not included
65	Idukki	Udumbanchola	Anavilasom	2675.56	2600.78	3016.80	0.00	3016.80	Not included
66	Idukki	Udumbanchola	Chakkupallom	2688.63	1801.09	2781.42	0.00	2781.42	Not included
67	Idukki	Udumbanchola	Chathurangappara	3060.17	3003.11	3073.95	0.00	3073.95	Not included
68	Idukki	Udumbanchola	Erattayar*			3084.69	0.00	3084.69	Bifurcated from Kalkoonthal Village; Not excluded
69	Idukki	Udumbanchola	Kalkoonthal	5802.77	3364.87	4471.18	0.00	4471.18	Not included
70	Idukki	Udumbanchola	Kanthipara	2641.20	2315.64	2642.79	0.00	2642.79	Not included
71	Idukki	Udumbanchola	Karunapuram	5427.70	2509.39	5359.89	0.00	5359.89	Not included
72	Idukki	Udumbanchola	Pampadumpara	3692.31	3045.43	3610.83	0.00	3610.83	Not included
73	Idukki	Udumbanchola	Parathodu	6041.44	4993.61	5635.88	0.00	5635.88	Not included
74	Idukki	Udumbanchola	Rajakkad	2690.98	1494.21	3911.21	0.00	3911.21	Not included
75	Idukki	Udumbanchola	Rajakumari	4292.27	3269.98	4153.10	0.00	4153.10	Not included
76	Idukki	Udumbanchola	Udumbanchola	4124.63	3936.27	3609.05	0.00	3609.05	Not included
77	Idukki	Udumbanchola	Vandanmedu	2078.30	1793.06	3079.58	0.00	3079.58	Not included
78	Ernakulam	Kothamangalam	Kuttampuzha	65651.54	59588.96	51927.96	47619.41	4308.56	
79	Thrissur	Chalakkudy	Athirapally*			34859.00	34045.65	813.36	Bifurcated from Pariyaram Village

Village-wise Details of ESA

Sl No	District	Taluk	Draft Notificaion dated 27.07.2026			Proposal by State Govt. regarding villages in Notification dtd. 27.07.2026			Remarks
			Name of Village	Area of Village under ESA (Ha) as per HLWG Report	ESA declared in respective villages (Ha)	Area of village proposed under ESA (Ha) (as per revenue records)	Proposed to be included as final ESA (Ha)	Proposed to be excluded from ESA (Ha)	
80	Thrissur	Chalakkudy	Pariyaram	70842.09	66033.21	34175.76	30295.02	3880.75	
81	Palakkad	Alathoor	Kizhakkancheri-I	6574.39	1349.93	4171.92	96.68	4075.24	
82	Palakkad	Attappadi	Agali	8082.92	2484.39	7636.98	707.64	6929.35	
83	Palakkad	Attappadi	Kallamala	6848.86	4375.64	7600.43	4768.40	2832.03	
84	Palakkad	Attappadi	Kottathara	3836.88	1689.19	7344.18	3361.87	3982.31	
85	Palakkad	Attappadi	Padavayal	26052.93	24126.27	28242.88	25241.34	3001.54	
86	Palakkad	Attappadi	Pudur	12973.12	9155.33	9850.14	8183.75	1666.39	
87	Palakkad	Attappadi	Sholayoor	16189.91	11714.62	12239.86	8522.44	3717.42	
88	Palakkad	Chittur	Muthalamada-I	27427.16	20811.00	23500.18	17425.01	6075.17	
89	Palakkad	Chittur	Muthalamada-II	9655.43	7380.42	2140.49	0.00	2140.49	Not included
90	Palakkad	Chittur	Nelliyampathy	27692.48	23469.68	39302.45	32761.49	6540.96	
91	Palakkad	Mannarkad	Palakkayam	11699.02	8239.12	11261.28	6704.94	4556.34	
92	Palakkad	Palakkad	Malampuzha-I	9432.48	8104.67	12628.31	10734.11	1894.21	
93	Palakkad	Palakkad	Pudusseri East	10208.69	7654.67	6933.68	4373.77	2559.91	
94	Palakkad	Palakkad	Puthuppariyaram-I	7556.97	6636.20	7713.80	6042.67	1671.13	
95	Malappuram	Nilambur	Akampadam	9308.08	6484.53	9057.19	5788.12	3269.07	
96	Malappuram	Nilambur	Amarambalam	7725.19	4015.37	8478.80	3677.09	4801.71	
97	Malappuram	Nilambur	Chokkad	6124.38	3143.16	5360.55	3008.35	2352.20	
98	Malappuram	Nilambur	Kalikavu	3359.36	1123.39	3888.85	846.00	3042.85	
99	Malappuram	Nilambur	Karulayi	29833.09	26813.90	28559.91	25893.33	2666.59	
100	Malappuram	Nilambur	Karuvarakundu	3988.55	811.82	3913.80	1124.31	2789.49	

Village-wise Details of ESA

Sl No	District	Taluk	Draft Notificaion dated 27.07.2026			Proposal by State Govt. regarding villages in Notification dtd. 27.07.2026			Remarks
			Name of Village	Area of Village under ESA (Ha) as per HLWG Report	ESA declared in respective villages (Ha)	Area of village proposed under ESA (Ha) (as per revenue records)	Proposed to be included as final ESA (Ha)	Proposed to be excluded from ESA (Ha)	
101	Malappuram	Nilambur	Kerala Estate	3462.92	2479.86	4140.86	1411.72	2729.14	
102	Malappuram	Nilambur	Kurimbalangode	15673.40	15481.29	8378.63	4410.28	3968.35	
103	Malappuram	Nilambur	Pothukallu*			15015.48	11792.98	3222.50	Bifurcated from Chungathra Villages
104	Malappuram	Nilambur	Vazhikadavu	13536.79	11264.07	13919.67	10159.64	3760.02	
105	Malappuram	Nilambur	Chungathara	8172.93	5387.31	3179.71	0.00	3179.71	Not included
106	Kozhikkode	Koyilandy	Chakkittapara	11783.19	9928.88	11305.44	8926.74	2378.70	
107	Kozhikkode	Koyilandy	Chembanoda	5192.72	3299.41	5013.58	3369.11	1644.47	
108	Kozhikkode	Thamarassery	Kattippara*			3232.48	1608.80	1623.68	Bifurcated from Kedavur Village
109	Kozhikkode	Thamarassery	Kodancheri	2649.48	585.84	5772.88	1473.20	4299.68	
110	Kozhikkode	Thamarassery	Nellippoyil	3331.34	2243.72	5050.86	2967.12	2083.73	
111	Kozhikkode	Thamarassery	Puthuppadi	5022.73	3049.83	4543.79	1216.17	3327.62	
112	Kozhikkode	Thamarassery	Thiruvambadi	8807.51	3748.05	7077.32	2762.17	4315.15	
113	Kozhikkode	Vadakara	Kavilumpara	8238.53	2795.00	9203.77	4225.14	4978.63	
114	Kozhikkode	Vadakara	Thinur	3005.37	939.81	4066.24	1062.84	3003.39	
115	Kozhikkode	Thamarassery	Kedavur	3590.89	1223.73	1900.70	0.00	1900.70	Not included
116	Wayanad	Mananthavady	Periya	6308.49	3613.04	6266.78	2724.44	3542.35	
117	Wayanad	Mananthavady	Thirunelli	14753.21	12462.67	14714.72	12249.87	2464.85	
118	Wayanad	Mananthavady	Thondernad	9793.70	7094.84	9670.44	6769.33	2901.11	

Village-wise Details of ESA									
Sl No	District	Taluk	Draft Notificaion dated 27.07.2026			Proposal by State Govt. regarding villages in Notification dtd. 27.07.2026			Remarks
			Name of Village	Area of Village under ESA (Ha) as per HLWG Report	ESA declared in respective villages (Ha)	Area of village proposed under ESA (Ha) (as per revenue records)	Proposed to be included as final ESA (Ha)	Proposed to be excluded from ESA (Ha)	
119	Wayanad	Mananthavady	Thrissilery	5534.59	3889.48	5458.66	2899.34	2559.32	
120	Wayanad	Sulthanbathery	Kidanganad	17496.32	17401.66	17644.16	16256.67	1387.49	
121	Wayanad	Sulthanbathery	Noolpuzha	12572.84	10946.21	12535.58	10036.33	2499.25	
122	Wayanad	Vythiri	Chundel	1651.71	472.94	2193.00	695.42	1497.58	
123	Wayanad	Vythiri	Kottappadi	5595.16	2620.32	5867.64	2410.71	3456.92	
124	Wayanad	Vythiri	Kunnathidavaka	3247.65	1987.21	2612.83	1035.65	1577.19	
125	Wayanad	Vythiri	Pozhuthana	4882.26	4428.41	5080.99	2955.51	2125.48	
126	Wayanad	Vythiri	Thariyod	5425.23	5058.15	5448.72	5059.52	389.20	
127	Wayanad	Vythiri	Vellarimala	5774.95	3977.17	5481.77	3533.83	1947.95	
128	Wayanad	Vythiri	Achooranam	2096.51	111.63	2051.03	0.00	2051.03	Not included
129	Kannur	Iritty	Aralam	12135.68	8643.04	11810.20	4272.72	7537.48	
130	Kannur	Iritty	Kottiyur	8174.89	7675.30	9764.86	6620.17	3144.68	
131	Kannur	Thalassery	Cheruvanchery	10101.42	9173.36	9833.49	7658.46	2175.03	
	Total			**1310755.61**	**999378.10**	**1299874.34**	**859069.10**	**440805.25**	

**** Newly added villages that bifurcated from ESA villages***

Villages NOT proposed for the First Tranche ESA Notification							
Sl No	**District**	**Taluk**	**Name of Village**	**Area of village (Ha) (as per revenue records)**	**Proposed to be included as final ESA (Ha)**	**Proposed to be excluded from ESA (Ha)**	**Remarks**
1	Thiruvananthapuram	Kattakada	Kallikkad	1081.56	0.00	1081.56	
2	Thiruvananthapuram	Kattakada	Manoorkkara	1756.65	0.00	1756.65	
3	Kottayam	Kanjirappally	Koottickal	5062.62	0.00	5062.62	
4	Kottayam	Meenachil	Melukavu	2351.68	0.00	2351.68	
5	Kottayam	Meenachil	Poonjar Thekkekara	3094.28	0.00	3094.28	
6	Kottayam	Meenachil	Teekoy	3479.71	0.00	3479.71	
7	Idukki	Devikulam	Kunjithanny	2177.41	0.00	2177.41	
8	Idukki	Idukki	Ayyappankovil	2280.86	0.00	2280.86	
9	Idukki	Idukki	Kattappana	5973.37	0.00	5973.37	
10	Idukki	Idukki	Konnathady	6826.20	0.00	6826.20	
11	Idukki	Idukki	Thankamany	5218.29	0.00	5218.29	
12	Idukki	Idukki	Upputhodu	2766.24	0.00	2766.24	
13	Idukki	Idukki	Vathikudi	5354.35	0.00	5354.35	
14	Idukki	Peerumedu	Kokkayar	5254.26	0.00	5254.26	
15	Idukki	Thodupuzha	Arakkulam	3417.02	0.00	3417.02	
16	Idukki	Udumbanchola	Anakkara	3863.37	0.00	3863.37	
17	Idukki	Udumbanchola	Anavilasom	3016.80	0.00	3016.80	
18	Idukki	Udumbanchola	Chakkupallom	2781.42	0.00	2781.42	
19	Idukki	Udumbanchola	Chathurangappara	3073.95	0.00	3073.95	
20	Idukki	Udumbanchola	Erattayar*	3084.69	0.00	3084.69	Bifurcated from Kalkoonthal Village
21	Idukki	Udumbanchola	Kalkoonthal	4471.18	0.00	4471.18	
22	Idukki	Udumbanchola	Kanthipara	2642.79	0.00	2642.79	
23	Idukki	Udumbanchola	Karunapuram	5359.89	0.00	5359.89	
24	Idukki	Udumbanchola	Pampadumpara	3610.83	0.00	3610.83	
25	Idukki	Udumbanchola	Parathodu	5635.88	0.00	5635.88	
26	Idukki	Udumbanchola	Rajakkad	3911.21	0.00	3911.21	
27	Idukki	Udumbanchola	Rajakumari	4153.10	0.00	4153.10	
28	Idukki	Udumbanchola	Udumbanchola	3609.05	0.00	3609.05	
29	Idukki	Udumbanchola	Vandanmedu	3079.58	0.00	3079.58	
30	Palakkad	Chittur	Muthalamada-II	2140.49	0.00	2140.49	
31	Malappuram	Nilambur	Chungathara	3179.71	0.00	3179.71	
32	Kozhikkode	Thamarassery	Kedavur	1900.70	0.00	1900.70	
33	Wayanad	Vythiri	Achooranam	2051.03	0.00	2051.03	
	Total			**117660.17**	**0.00**	**117660.17**	

**** Newly added villages that bifurcated from ESA villages***

Legacy Errors in the Spatial Records of Forest Boundaries in Kerala and their Implications for Ecologically Sensitive Area (ESA) Delineation

The process of delineating Ecologically Sensitive Areas (ESAs) in the Western Ghats requires accurate and up-to-date spatial information on the legal status and extent of forests. The High Level Working Group (HLWG) recommendations, subsequent draft notifications issued by the MoEFCC, and various analyses undertaken by national institutions have relied substantially on the forest boundary data supplied by the State Forest Department. Consequently, the accuracy of these datasets assumes critical importance, as even minor spatial inaccuracies can significantly influence the extent and location of areas proposed for ESA notification.

During the detailed village-level verification undertaken by the State, it was observed that portions of the forest spatial database maintained by the Kerala Forest Department continue to contain legacy errors that have accumulated over several decades. These discrepancies have, in certain locations, resulted in legally settled habitations and revenue lands continuing to be depicted as Reserved Forests in the digital spatial database used for planning and analysis. The legal forest boundaries presently available in digital form are largely derived from Survey of India toposheets and forest maps prepared during the 1960s and 1970s. At the time these maps were prepared, they correctly represented the forest boundaries prevailing under the legal framework then in force.

Subsequently, however, the State Government undertook several statutory programmes involving: denotification of portions of Reserved Forests; assignment of land for plantations and to landless families, including for tribal settlements; regularisation of long-standing occupations; construction of public infrastructure; development of agricultural settlements; and implementation of various Government rehabilitation schemes.

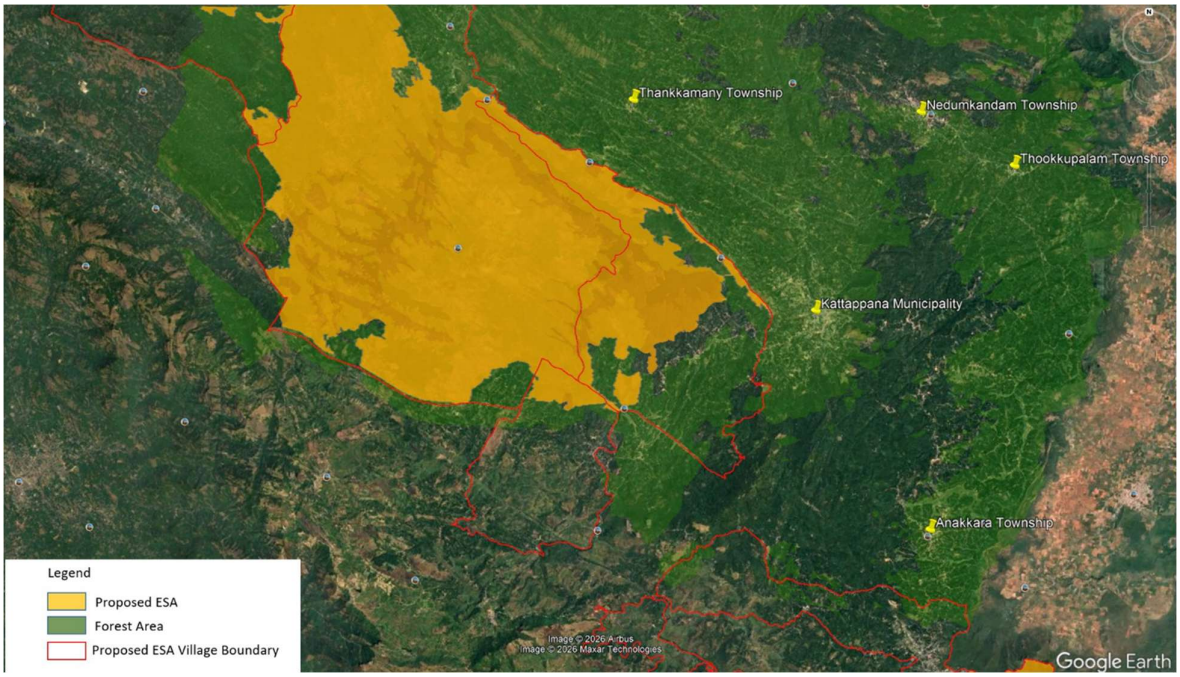
Although these changes were effected through legally valid Government Orders, notifications and revenue proceedings, the corresponding spatial records maintained in the forest database were not comprehensively revised in many locations. Consequently, the digital forest layers continued to represent historical forest boundaries rather than the legally existing forest boundaries on the ground.

The verification undertaken during the ESA delineation exercise revealed several categories of discrepancies, including:

- areas legally excluded from Reserved Forest but still depicted as Reserved Forest in spatial datasets;
- long-established townships continuing to appear within forest polygons;
- public institutions, roads and markets shown within legal forest boundaries;
- plantation areas and settled agricultural lands continuing to be classified as forests in legacy spatial records; and
- inconsistencies between cadastral records maintained by the Revenue Department and forest spatial datasets.

These discrepancies do not arise from recent encroachments but primarily reflect historical changes in land status that were never fully incorporated into the spatial database. The most significant examples were observed in Idukki District, where several well-established hill townships continue to be represented as Reserved Forests in portions of the Forest Department's spatial database. Illustrative examples include: Kattappana, Adimali and Nedumkandam townships in Idukki District.

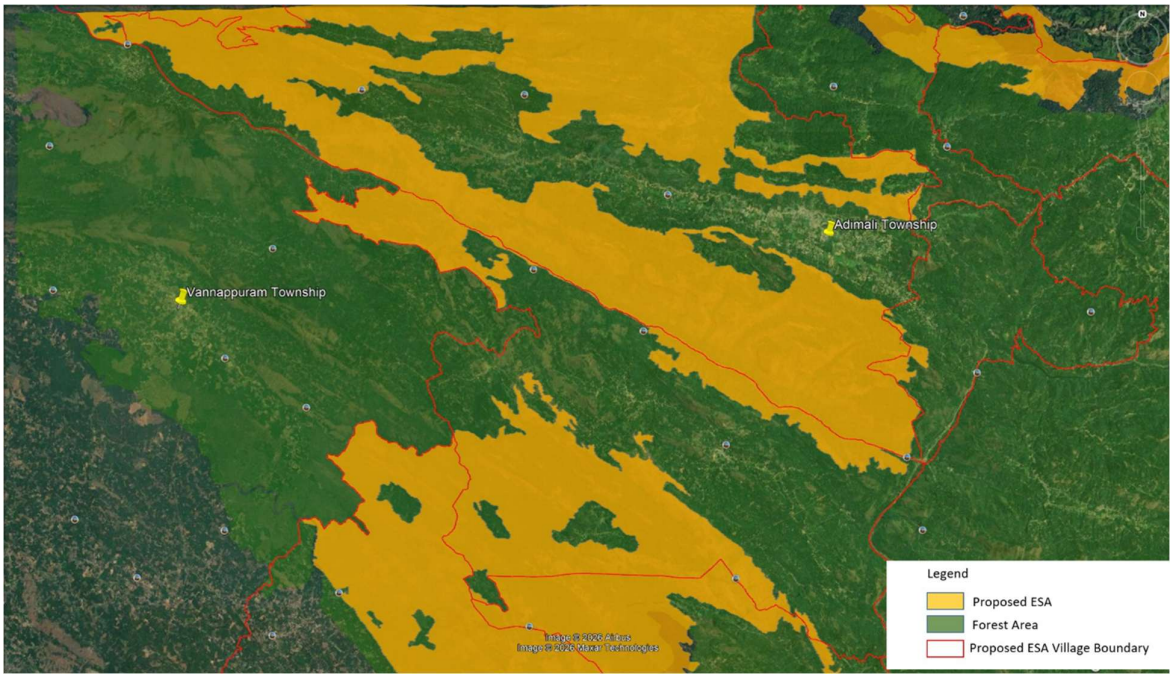
Kattapana Municipality & Nedukandam Townships



Nedukandam Township



Adimali Township



The ESA delineation process is fundamentally dependent upon the accurate identification of natural landscapes and legally recognised forest areas. Where historical forest layers continue to depict long-settled human habitations as forests, automated spatial analyses inevitably extend ESA boundaries into areas that no longer possess the ecological characteristics originally intended for protection. Such inaccuracies may result in:

- inclusion of densely inhabited settlements within ESA boundaries;
- unnecessary restrictions on existing development activities;
- avoidable public opposition;
- inconsistencies between legal land ownership and environmental regulation;
- administrative complications in implementation; and
- erosion of public confidence in the scientific basis of the ESA notification.

The objective of ESA notification is to conserve ecologically significant landscapes rather than to regulate areas whose legal and physical character has fundamentally changed over several decades.

The Government of Kerala respectfully submits that the legacy discrepancies in forest spatial datasets are historical cartographic issues rather than matters of ecological interpretation. The corrections proposed in the present ESA exercise are therefore intended solely to align the spatial database with the legally existing forest boundaries and the present ground reality.

ANNEXURE III

Division-wise forest area particulars of Territorial and Wildlife Divisions having one or more villages included in the ESA village list

Source: Kerala Forest Department, Forest Statistics 2022-23 – position as on 31.03.2023 | Unit: sq. km

No.	Circle / Administrative Unit	Forest Division	Reserved Forest	Proposed Reserved Forest	Vested Forest	EFL	Protected Area	Total Forest Area
1	Southern Circle	Thiruvananthapuram	359.124	5.825	0.376	7.169	0	372.494
2	Southern Circle	Thenmala	140.750	0	7.775	0.455	0	148.980
3	Southern Circle	Achencoil	284.330	0	0.208	1.331	0	285.869
4	Southern Circle	Ranni	902.329	7.225	1.568	0	0	911.122
5	Southern Circle	Punalur	274.148	0.038	0.169	0.157	0	274.512
6	Southern Circle	Konni	320.553	11.102	0	0	0	331.655
7	High Range Circle	Kottayam	613.900	15.163	31.967	2.666	0	663.696
8	High Range Circle	Kothamangalam	317.604	0.549	0.158	0	0	318.311
9	High Range Circle	Munnar	693.535	72.872	0.662	5.148	0	772.217
10	High Range Circle	Mankulam	0	90.057	0	0	0	90.057
11	High Range Circle	Marayoor	15.416	47.257	0.076	2.471	0	65.220
12	Central Circle	Vazhachal	353.414	0	0	0	0	353.414
13	Central Circle	Chalakudy	207.940	0.031	0	0.040	0	208.011
14	Central Circle	Malayattoor	609.725	1.234	0	0	0	610.959
15	Eastern Circle	Mannarkkad	150.732	0	271.453	9.137	0	431.322
16	Eastern Circle	Nilambur North	58.353	0.345	371.720	9.557	0	440.016
17	Eastern Circle	Nilambur South	56.509	0.033	40.675	1.803	227.970	326.990
18	Eastern Circle	Palakkad	73.410	0	160.030	30.102	0	263.542
19	Eastern Circle	Nemmara	209.664	0.038	141.653	9.700	0	361.055
20	Northern Circle	Kozhikode	6.215	26.070	187.274	15.924	74.426	309.909
21	Northern Circle	Wayanad North	134.058	15.107	65.575	9.082	0	223.822
22	Northern Circle	Wayanad South	67.679	3.774	203.272	20.502	0	295.227
23	Northern Circle	Kannur	93.361	0.021	60.380	4.910	0	158.672
24	Agasthyavanam Biological	Thiruvananthapuram WL	30.980	0	0	0	181.000	211.980
25	Agasthyavanam Biological	Shendurney WL	0.833	1.403	4.226	0.354	166.820	173.636
26	Field Director, Project Tiger	Periyar East	0	0	0	0.675	709.000	709.675
27	Field Director, Project Tiger	Periyar West	0	0	0	0	216.000	216.000
28	Field Director, Project Tiger	Munnar WL	0	0	0	0	241.077	241.077
29	Field Director, Project Tiger	Idukki WL	35.524	0	0	0	95.000	130.524
30	Wildlife Circle, Palakkad	Parambikulam	102.770	0	0	0	274.130	376.900
31	Wildlife Circle, Palakkad	Wayanad WL	0	0.089	0	0	344.443	344.584
32	Wildlife Circle, Palakkad	Silent Valley	0	0	0	0	237.491	237.491
33	Wildlife Circle, Palakkad	Aralam	0	0	0	0	85.380	85.380
								10944.319

Notes

1. The figures represent the total area of the respective Forest Divisions and not the village-wise forest area.
2. Protected Area, wherever shown separately, forms part of the total forest area of the respective Division.

Annexure III

Village wise extent of Protected Areas						
Sl. No.	**District**	**Taluk**	**Village**	**Name of PA**	**Area (sq. km)**	**Area (Ha)**
1	Thiruvananthapuram	Nedumangad	Vithura	Neyyar WLS	2.656274	265.6274
2	Thiruvananthapuram	Kattakada	Vazhichal	Neyyar WLS	111.123471	11112.3471
3	Thiruvananthapuram	Kattakada	Amboori	Neyyar WLS	2.067018	206.7018
4	Thiruvananthapuram	Nedumangad	Thennur	Peppara WLS	1.772401	177.2401
5	Thiruvananthapuram	Nedumangad	Vithura	Peppara WLS	74.565642	7456.5642
6	Thiruvananthapuram	Kattakada	Vazhichal	Peppara WLS	1.179319	117.9319
7	Kollam	Punalur	Aryankavu	Shenduruney WLS	0.046301	4.6301
8	Kollam	Punalur	Kulathupuzha	Shenduruney WLS	170.677672	17067.7672
9	Kollam	Punalur	Thenmala	Shenduruney WLS	0.808145	80.8145
10	Pathanamthitta	Ranni	Perunad	Periyar Tiger Reserve East	59.066913	5906.6913
11	Pathanamthitta	Ranni	Kollamula	Periyar Tiger Reserve West	20.268504	2026.8504
12	Pathanamthitta	Konni	Seethathodu	Periyar Tiger Reserve East	119.22384	11922.384
13	Idukki	Devikulam	Vattavada	Anamudi Shola NP	1.047861	104.7861
14	Idukki	Devikulam	KDH	Anamudi Shola NP	1.122867	112.2867
15	Idukki	Devikulam	Kanthaloor	Anamudi Shola NP	19.528936	1952.8936
16	Idukki	Devikulam	Kottakamboor	Anamudi Shola NP	11.146823	1114.6823
17	Idukki	Devikulam	Keezhanthoor	Anamudi Shola NP	0.019827	1.9827
18	Idukki	Devikulam	Kottakamboor	Chinnar WLS	0.112428	11.2428
19	Idukki	Devikulam	Edamalakkudy	Chinnar WLS	0.609981	60.9981
20	Idukki	Devikulam	Keezhanthoor	Chinnar WLS	40.06995	4006.995
21	Idukki	Devikulam	Marayur	Chinnar WLS	49.805621	4980.5621
22	Idukki	Devikulam	Munnar	Eravikulam NP	18.970723	1897.0723
23	Idukki	Devikulam	Mankulam	Eravikulam NP	0.293433	29.3433
24	Idukki	Devikulam	KDH	Eravikulam NP	0.089742	8.9742
25	Idukki	Devikulam	Edamalakkudy	Eravikulam NP	90.635395	9063.5395
26	Idukki	Devikulam	Marayur	Eravikulam NP	1.511469	151.1469
27	Idukki	Idukki	Kanchiyar	Idukki WLS	10.300581	1030.0581
28	Idukki	Idukki	Idukki	Idukki WLS	105.646559	10564.6559
29	Idukki	Devikulam	Vattavada	Kurinjimala WLS	18.85683	1885.683
30	Idukki	Devikulam	KDH	Kurinjimala WLS	0.108335	10.8335

Village wise extent of Protected Areas						
Sl. No.	**District**	**Taluk**	**Village**	**Name of PA**	**Area (sq. km)**	**Area (Ha)**
31	Idukki	Devikulam	Kottakamboor	Kurinjimala WLS	23.699023	2369.9023
32	Idukki	Devikulam	Keezhanthoor	Kurinjimala WLS	0.497426	49.7426
33	Idukki	Udumbanchola	Santhampara	Mathikettan Shola	0.761523	76.1523
34	Idukki	Udumbanchola	Pooppara	Mathikettan Shola	15.190025	1519.0025
35	Idukki	Devikulam	Vattavada	Pambadam Shola	11.019297	1101.9297
36	Idukki	Devikulam	KDH	Pambadam Shola	0.001825	0.1825
37	Idukki	Peerumedu	Mlappara	Periyar Tiger Reserve East	454.230407	45423.0407
38	Idukki	Peerumedu	Manjumala	Periyar Tiger Reserve East	0.217347	21.7347
39	Idukki	Peerumedu	Periyar	Periyar Tiger Reserve East	12.946693	1294.6693
40	Idukki	Peerumedu	Kumily	Periyar Tiger Reserve East	146.773346	14677.3346
41	Idukki	Peerumedu	Peruvanthanam	Periyar Tiger Reserve West	0.004261	0.4261
42	Idukki	Peerumedu	Mlappara	Periyar Tiger Reserve West	109.06974	10906.974
43	Idukki	Peerumedu	Manjumala	Periyar Tiger Reserve West	2.690052	269.0052
44	Ernakulam	Kothamangalam	Kuttampuzha	Thattekkad Bird Sanctuary	25.675264	2567.5264
45	Thrissur	Chalakkudy	Pariyaram	Chimmony Wildlife Sanctuary	104.018952	10401.8952
46	Thrissur	Chalakkudy	Athirapally	Parambikulam WLS	63.87228	6387.228
47	Thrissur	Chalakkudy	Pariyaram	Parambikulam WLS	41.866322	4186.6322
48	Thrissur	Chalakkudy	Pariyaram	Peechi - Vazhani WLS	1.985116	198.5116
49	Palakkad	Chittur	Muthalamada-I	Parambikulam WLS	68.165112	6816.5112
50	Palakkad	Chittur	Nelliyampathy	Parambikulam WLS	255.138596	25513.8596
51	Palakkad	Alathoor	Kizhakkancheri-I	Peechi - Vazhani WL	0.437313	43.7313
52	Palakkad	Attappadi	Kallamala	Silentvalley National Park	21.25738	2125.738
53	Palakkad	Attappadi	Padavayal	Silentvalley National Park	162.9111	16291.11
54	Palakkad	Mannarkad	Palakkayam	Silentvalley National Park	4.502007	450.2007
55	Malappuram	Nilambur	Amarambalam	Karimpuzha WLS	10.860191	1086.0191
56	Malappuram	Nilambur	Chokkad	Karimpuzha WLS	0.572453	57.2453
57	Malappuram	Nilambur	Karulayi	Karimpuzha WLS	182.169958	18216.9958
58	Malappuram	Nilambur	Vazhikadavu	Karimpuzha WLS	0.025896	2.5896
59	Malappuram	Nilambur	Amarambalam	Silentvalley National Park	0.006114	0.6114
60	Malappuram	Nilambur	Chokkad	Silentvalley National Park	16.360463	1636.0463
61	Malappuram	Nilambur	Kalikavu	Silentvalley National Park	3.813744	381.3744
62	Malappuram	Nilambur	Karuvarakundu	Silentvalley National Park	12.243783	1224.3783

Village wise extent of Protected Areas						
Sl. No.	**District**	**Taluk**	**Village**	**Name of PA**	**Area (sq. km)**	**Area (Ha)**
63	Malappuram	Nilambur	Kerala Estate	Silentvalley National Park	11.342041	1134.2041
64	Kozhikkode	Koyilandy	Chembanoda	Malabar WLS	19.110031	1911.0031
65	Kozhikkode	Koyilandy	Chakkittapara	Malabar WLS	69.356665	6935.6665
66	Kozhikkode	Thamarassery	Kattippara	Malabar WLS	3.867688	386.7688
67	Wayanad	Mananthavady	Thirunelli	Aralam WL	0.488598	48.8598
68	Wayanad	Mananthavady	Thirunelli	Kottiyur WLS	0.128095	12.8095
69	Wayanad	Vythiri	Thariyod	Malabar WL	0.225698	22.5698
70	Wayanad	Vythiri	Pozhuthana	Malabar WL	0.351401	35.1401
71	Wayanad	Sulthanbathery	Kidanganad	Wayanad WL	171.30683	17130.683
72	Wayanad	Mananthavady	Thrissilery	Wayanad WL	15.190214	1519.0214
73	Wayanad	Mananthavady	Thirunelli	Wayanad WL	64.714416	6471.4416
74	Wayanad	Sulthanbathery	Noolpuzha	Wayanad WL	106.602386	10660.2386
75	Kannur	Iritty	Aralam	Aralam WLS	29.52762	2952.762
76	Kannur	Iritty	Kottiyur	Aralam WLS	23.354942	2335.4942
77	Kannur	Iritty	Kottiyur	Kottiyur WLS	28.40898	2840.898
					3230.291475	**323029.1475**

Annexure IV

Village wise extent of Paddy lands, Wetlands and Waterbodies (in hectares)					
Sl. No	**District**	**Taluk**	**Village**	**Paddy lands**	**Wetlands/Waterbodies**
1	Thiruvananthapuram	Kattakkada	Mannoorkara	11.493	2.969
2	Ernakulam	Kothamangalam	Kuttampuzha	17.1038	0.465
3	Palakkad	Attappadi	Kottathara	142.3891	24.6305
4	Palakkad	Attappadi	Sholayoor	0	0
5	Malappuram	Nilambur	Amarambalam	94.3272	0.1294
6	Malappuram	Nilambur	Chokkad	98.8382	2.2211
7	Malappuram	Nilambur	Kalikavu	3.3535	0
8	Malappuram	Nilambur	Karulai	164.335	0

Annexure V

Rivers of Kerala

Sl. No.	Name of River	Flow Direction
1	Manjeswar	West
2	Uppala	West
3	Shiriya	West
4	Mogral	West
5	Chandragiri	West
6	Chittari	West
7	Nileswar	West
8	Kariangode	West
9	Kavvayi	West
10	Peruvamba	West
11	Ramapuram	West
12	Kuppam	West
13	Valapattanam	West
14	Anjarakandy	West
15	Thalassery	West
16	Mahe	West
17	Kuttiyadi	West
18	Korapuzha	West
19	Kallai	West
20	Chaliyar	West
21	Kadalundi	West
22	Tirur	West

Sl. No.	Name of River	Flow Direction
23	Bharathapuzha	West
24	Keecheri	West
25	Puzhakkal	West
26	Karuvannur	West
27	Chalakudy	West
28	Periyar	West
29	Muvattupuzha	West
30	Meenachil	West
31	Manimala	West
32	Pamba	West
33	Achankovil	West
34	Pallikkal	West
35	Kallada	West
36	Ithikkara	West
37	Ayroor	West
38	Vamanapuram	West
39	Mamom	West
40	Karamana	West
41	Neyyar	West
42	Kabini	East
43	Bhavani	East
44	Pambar	East

Annexure VI

Technical Justification for Relaxation of Red Category Industry Restrictions in ESA Villages

Introduction

Clause 3(1)(c) of the Seventh Draft Notification for the Western Ghats Ecologically Sensitive Area (WGESA), dated 27 July 2026, prohibits all new "Red Category" industries — and the expansion of existing such industries — as classified from time to time by the Central Pollution Control Board (CPCB) or the Kerala State Pollution Control Board (KSPCB), within the notified landscape. Applied literally, this blanket prohibition would extend to a range of activities that are essential to the functioning, economy and safety of Kerala's highland settlements, several of which already operate within the villages proposed for notification without demonstrated large-scale ecological harm.

Kerala nonetheless presents a socio-ecological setting that differs substantially from most other Western Ghats States. Human settlements, plantations and forests are interspersed in a continuous rural–urban landscape rather than separated by large tracts of wilderness, and the high-range regions proposed for ESA notification support dense populations, established townships, plantation agriculture, tourism infrastructure and public institutions that have evolved over decades. Kerala's economy has, moreover, undergone a structural transformation from a predominantly agrarian base to a diversified, service-oriented one: agriculture — particularly plantation crops, dairy and livestock — remains important, but tourism, education, healthcare, information technology, commerce and renewable energy now contribute an increasing share of the State's Gross State Value Added, alongside sustained progress in human development, poverty reduction and social equity.

The proposed ESA villages cannot, therefore, be viewed solely as ecological landscapes; they are also thriving socio-economic landscapes supporting millions of people whose livelihoods depend on agriculture, animal husbandry, tourism, trade and public services. Implementation of the ESA notification accordingly requires a balanced approach that safeguards ecological values while permitting the limited set of activities necessary to sustain livelihoods, deliver essential public

services and meet the State's climate and sustainable development goals. The Government therefore seeks limited, carefully regulated relaxations for the specific activities addressed in this note — not a dilution of environmental safeguards. Every such activity will continue to be governed by the Environment (Protection) Act, 1986; the EIA Notification, 2006; the Water (Prevention and Control of Pollution) Act, 1974; the Air (Prevention and Control of Pollution) Act, 1981; the Solid Waste Management Rules, 2016; the Bio-Medical Waste Management Rules, 2016; the Plastic Waste Management Rules, 2016; the Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016; and all other applicable standards prescribed by the MoEFCC, CPCB and KSPCB.

This note sets out the technical basis on which the Government of Kerala seeks calibrated, case-by-case relaxation — rather than continuation of the blanket prohibition — for a defined list of activities: milk processing and dairy products; slaughterhouses and meat processing; Common Effluent Treatment Plants (CETPs); diesel generator (DG) sets above 5 MVA; hotels with wastewater generation of 100 KLD or more; new healthcare establishments; Pumped Storage Hydroelectric Projects (PSPs); and disaster-rehabilitation townships exceeding 50 hectares.

Sector-Wise Technical Justification

1. Milk Processing and Dairy Products

Dairy farming is a vital component of Kerala's rural economy, contributing to livelihood security, nutritional security and women-led economic development. Unlike many other States, dairying in Kerala is predominantly undertaken by small and marginal farmers within integrated homestead farming systems, complementing plantation agriculture through recycling of farm residues and providing year-round supplementary income. The sector is organised chiefly through dairy cooperative societies and self-help groups with extensive women's participation: as of date, approximately 2.5 lakh dairy farmers and over 3,000 cooperative societies are registered on the Dairy Development Department's Ksheerasree portal, and in 2023–24 these societies procured 6,780.22 lakh litres of milk, of which 4,573.77 lakh litres were supplied to processing dairies and 2,079.32 lakh litres marketed locally.

The high-range districts of Idukki, Wayanad, Attappady (Palakkad) and Kuttampuzha (Ernakulam), together with adjoining plantation regions, contribute

substantially to this production owing to favourable climate, fodder availability and the predominance of mixed farming. Several strategically important dairy and chilling facilities already operate within villages proposed for ESA notification — including the MILMA Dairy at Kattappana, the Wayanad Dairy and Chilling Plant at Chundale, the Indo-Swiss Dairy Project at Mattupetty, and various cooperative facilities across the high ranges — forming the backbone of milk procurement in terrain where transport to plains-based processing centres is both time-consuming and economically inefficient, and providing a working precedent of coexistence with the surrounding landscape.

Because milk is highly perishable and production is geographically dispersed across thousands of small holdings, decentralised chilling and processing infrastructure is essential to maintaining the cold chain. Restricting such facilities would force milk to be transported over long mountainous distances, raising costs, spoilage, energy consumption and greenhouse gas emissions while depressing farmer returns and the competitiveness of the cooperative sector — outcomes a genuinely conservation-oriented policy should avoid. While dairy processing falls under the Red Category owing to its wastewater generation, modern units employ equalisation tanks, dissolved air flotation, anaerobic treatment, sequencing batch reactors, membrane bioreactors, tertiary treatment and scientific sludge management, with treated water reused for gardening, flushing and other non-potable purposes; unlike many heavy industries, dairy processing involves no hazardous chemicals, toxic emissions or hazardous solid waste, and its impacts are readily manageable through compliance with Pollution Control Board standards. Continuing growth in demand — from population growth, rising incomes, tourism, and institutional and nutritional programmes — further supports locating processing capacity closer to production centres rather than concentrating it in urban areas.

The Government accordingly requests that milk processing plants and dairy product units be permitted within ESA villages subject to: mandatory Environmental Clearance wherever applicable; Consent to Establish and Consent to Operate from the KSPCB; Zero Liquid Discharge or equivalent treatment technology wherever feasible; rainwater harvesting and renewable energy use; scientific sludge management; continuous environmental monitoring; and full compliance with applicable regulations.

2. *Slaughterhouses and Meat Processing*

Akin to dairy sector, the livestock rearing is also integral to Kerala's rural economy, characterised by smallholder production integrated with homestead and plantation agriculture rather than the land-intensive systems typical elsewhere. It provides supplementary income to marginal farmers, livelihood opportunities for women and rural youth, nutritional security, organic manure and resilience against fluctuations in crop income, and is actively supported through the Kerala Livestock Development Board, the Animal Husbandry and Dairy Development Departments, Kudumbashree, the Kerala Cooperative Poultry Federation, Kerala Feeds Ltd. and Integrated Livestock Development Schemes.

Kerala records one of India's highest per-capita levels of animal protein consumption, and demand continues to rise with income growth, urbanisation and tourism; in 2023–24, meat production stood at 6.08 lakh metric tonnes against an estimated requirement of 8.80 lakh MT, a gap presently met through imports from neighbouring States. Animal protein is recognised as central to balanced nutrition under the National Nutrition Mission, Poshan Abhiyaan and related programmes, and scientific expansion of meat production accordingly supports Sustainable Development Goals 2, 3 and 8. The Government's flagship Kerala Chicken Project — encompassing breeder farms, hatcheries, broiler farms, feed units, scientific slaughterhouses, blast freezers, rendering plants, cold storage and branded retail outlets — together with the State's broader Integrated Livestock Development Programme (goat, pig, indigenous cattle, male-calf rearing, sheep and fodder development), depends on corresponding investment in modern processing infrastructure.

Much of the slaughter capacity presently operating in rural Kerala is old, undersized and technologically outdated, lacking scientific wastewater treatment, rendering facilities or solid-waste management; a blanket prohibition on new facilities would entrench this obsolete infrastructure rather than encourage its replacement. Modern integrated abattoirs, by contrast, achieve materially lower environmental impact through equalisation tanks, anaerobic reactors, sequencing batch reactors, membrane bioreactors, tertiary treatment and UV disinfection meeting KSPCB discharge standards; recovery of blood, bone, fat, hide, offal and feather into bone meal, tallow, gelatin, pet-food ingredients and organic manure, substantially reducing waste; biogas and compressed-biogas generation from organic waste, supporting circular-economy objectives; and enclosed processing,

negative-pressure ventilation, biofilters and scrubbers for effective odour control. Scientific slaughterhouses also materially improve meat hygiene, veterinary inspection, zoonotic-disease control and traceability — considerations of growing importance given rising concern over antimicrobial resistance and emerging zoonotic disease.

The highland districts of Idukki, Wayanad, Pathanamthitta, Palakkad and Kannur support substantial livestock populations and rising tourist demand for hygienically processed meat; transporting live animals long distances to plains-based processing centres increases animal stress, cost, emissions, mortality and quality loss relative to decentralised, modern processing. The Government accordingly requests that scientifically designed slaughterhouses and meat-processing facilities be treated as a regulated activity within ESA villages, subject to Environmental Clearance wherever applicable, Consent to Establish and Operate, Zero Liquid Discharge wherever feasible, scientific effluent treatment and rendering, odour control, enclosed processing, renewable energy and rainwater harvesting, online monitoring, veterinary supervision, scientific carcass disposal and periodic environmental audit — rather than a blanket prohibition.

3. ***Common Effluent Treatment Plants (CETPs) and Common Treatment, Storage and Disposal Facilities***

Under current CPCB categorisation, Common Effluent Treatment Plants (CETPs) and certain Common Treatment, Storage and Disposal Facilities (TSDFs) fall in the Red Category owing to the nature of the wastes they handle, even though their function is environmental protection rather than industrial production. Kerala's industrial base is dominated by geographically dispersed micro, small and medium enterprises engaged in agro-processing, food processing, dairy processing, rubber and latex products, spice processing, herbal and ayurvedic manufacture, and plantation-based value addition; the highland districts, in particular, hold substantial potential for such processing given local availability of rubber, tea, coffee, cardamom, pepper, cocoa, ginger, turmeric, fruit, vegetables, milk and livestock products, and the State has accordingly encouraged industrial parks, food parks, rubber parks and processing clusters in these areas.

Individual effluent treatment is frequently uneconomic for such small units given limited land, high capital cost, operational complexity and a shortage of trained personnel; CETPs address this by consolidating treatment into a single, professionally managed facility employing technologies — dissolved air flotation,

anaerobic digesters, sequencing batch reactors, membrane bioreactors, reverse osmosis, tertiary treatment and online monitoring — that are generally beyond the reach of individual small industries, while also enabling water recycling, sludge stabilisation and biogas recovery, reducing land requirement relative to multiple individual plants, and ensuring professional technical supervision and compliance. This is directly relevant to ESA villages: many, including Munnar, Kattappana, Nedumkandam, Adimali, Kumily and Kalpetta, are established townships hosting numerous commercial and agro-processing units whose wastewater generation will grow with continued economic activity; absent CETPs, the likely outcome is not less industrial activity but more untreated discharge and a proliferation of small, poorly maintained individual plants — a materially worse environmental outcome. CETPs also support the water-security and climate-adaptation objectives of the State Action Plan on Climate Change 2.0 through wastewater reuse and reduced freshwater abstraction, and it is notable that under the Ministry's revised national framework, CETPs have themselves been reclassified as Essential Environmental Services within a distinct "Blue Category" to be actively promoted rather than restricted.

Common TSDFs perform an analogous function for hazardous and industrial waste generated in small quantities by highland industries, for which authorised common facilities are environmentally preferable to long-distance transport or on-site storage; the Government proposes that such facilities be considered only after detailed environmental appraisal, site-suitability analysis, hydrogeological investigation and risk assessment. The Government accordingly requests that CETPs and TSDFs be treated as regulated environmental infrastructure rather than prohibited Red Category industries, subject to prior Environmental Clearance wherever applicable, Consent to Establish and Operate, continuous online effluent monitoring, Zero Liquid Discharge wherever technically feasible, scientific sludge management, periodic third-party audits, emergency response and risk-management plans, and full compliance with the Environment (Protection) Act, the Water Act, the Air Act and the Hazardous and Other Wastes Rules.

4. DG Sets above 5 MVA

The Government seeks relaxation limited to specific, essential-service contexts — large hospitals, medical colleges and industrial parks — where diesel generator sets above 5 MVA provide backup power critical to life-safety systems, medical equipment and continuity of operations during grid outages, which are more

frequent in terrain-constrained highland areas. Such installations are, in any event, independently regulated for emissions and noise under the applicable Central Pollution Control Board standards for diesel generator sets, irrespective of their location, so that permitting their use in defined, essential-service settings does not remove the underlying environmental safeguard.

5. Hotels with Wastewater Generation of 100 KLD or More

Tourism occupies a central place in Kerala's development strategy; the State was the first in India to accord industry status to tourism, and the sector generated an estimated ₹43,621 crore in direct and indirect revenue in 2023, recovering rapidly from the pandemic with strong growth in domestic arrivals. The proposed ESA villages encompass many of India's best-known hill destinations — Munnar, Thekkady, Vagamon, Wayanad, Meppadi, Vythiri, Kalpetta, Banasura, Nelliyampathy, Attappady, Peerumedu, Kumily and Gavi among them — where tourism has, in many places, effectively replaced traditional plantation-based livelihoods, with thousands of families now dependent on hotels, resorts, homestays, adventure tourism, transport, guiding, plantation tourism, handicrafts and local food enterprises. The State's Responsible Tourism Mission has demonstrated that well-managed tourism can enhance rural livelihoods and local economies while providing a genuine incentive for conserving the forests, landscapes and wildlife on which the sector depends, rather than being inherently incompatible with conservation.

Continued growth in arrivals — driven by improved connectivity, rising incomes, and growth in wellness, eco-, medical and conference tourism — is straining existing accommodation during seasonal peaks, and homestays and small establishments alone cannot serve international conferences, organised tour groups or institutional and medical tourism, creating a genuine need for appropriately located medium and large hospitality establishments. Contrary to the assumption that larger hotels pose greater environmental risk, well-regulated large hotels typically outperform numerous small, poorly regulated establishments: modern facilities incorporate sewage treatment plants with tertiary treatment and water reuse, rainwater harvesting and low-flow fixtures; source-segregated solid waste management with composting, biogas generation and elimination of single-use plastics; rooftop solar, solar water heating, efficient HVAC, LED lighting and building management systems; and increasingly follow GRIHA, LEED or IGBC green-building standards. The sector also carries substantial multiplier effects,

supporting employment in housekeeping, food production, transport, agriculture, dairy, fisheries, floriculture, handicrafts and construction, and procuring significant quantities of locally produced vegetables, spices, milk, meat and flowers.

Given Kerala's increasing exposure to landslides, extreme rainfall and flash floods, future tourism infrastructure should be permitted only where it incorporates slope-stability assessment, climate-resilient structural design, nature-based drainage, on-site wastewater recycling, renewable energy and disaster-management and evacuation plans — with well-designed facilities then able to double as emergency shelters during disasters, enhancing rather than undermining regional resilience. The Government accordingly requests that hotels generating 100 KLD or more of wastewater be treated as a regulated activity within ESA villages, subject to prior Environmental Clearance wherever applicable, Consent to Establish and Operate, advanced sewage treatment with reuse for flushing, landscaping and cooling, rainwater harvesting and groundwater recharge, scientific solid-waste management, energy-efficient design and renewable energy use, a prohibition on untreated discharge, mandatory carrying-capacity assessment for ecologically sensitive destinations, geotechnical and disaster-risk evaluation in landslide-prone areas, and periodic environmental audit and monitoring.

6. New Healthcare Establishments

Healthcare infrastructure is an essential public service and forms part of the State's constitutional obligation, under Article 21, to protect life and public health. Kerala's healthcare delivery network — Primary and Family Health Centres, Community Health Centres, Taluk and District Hospitals, Government Medical Colleges, and speciality, private and mission hospitals — is built around the objective of equitable access irrespective of geography, an objective the highland districts' terrain makes difficult to meet: rugged mountains, deep valleys, scattered settlements, steep and landslide-prone roads and periodic road closures mean patients in many locations require several hours to reach tertiary care, particularly during the monsoon.

The ESA villages are not uninhabited landscapes: they support permanent residents, plantation workers, migrant labourers, tribal communities, students and seasonal workers, alongside millions of domestic and international tourists visiting destinations such as Munnar, Thekkady, Wayanad and Vagamon, all of whom generate demand for emergency, trauma, obstetric, paediatric, intensive-care and infectious-disease services. This need has been thrown into sharp relief by recent

disasters — the 2018 and 2019 floods, the 2020 Pettimudi landslide and the 2024 Mundakkai–Chooralmala landslide in Wayanad — each of which demonstrated the critical importance of local capacity for emergency triage, trauma stabilisation, disaster response and epidemic management in remote mountainous terrain. Kerala's ongoing demographic transition toward an ageing population and a rising burden of non-communicable disease, documented in successive Kerala State Planning Board Economic Reviews, is further increasing demand for dialysis, oncology, cardiology, orthopaedic and rehabilitative services that highland residents should not have to travel repeatedly to distant urban centres to access.

While healthcare establishments fall under the Red Category chiefly owing to biomedical waste and wastewater generation, modern hospitals are already required to comply with the Bio-Medical Waste Management Rules, 2016, the Solid Waste Management Rules, 2016, the Water Act, the Air Act and the Environment (Protection) Act, and routinely incorporate advanced sewage treatment, authorised biomedical-waste segregation and disposal, infection control, energy-efficient design, rainwater harvesting and renewable energy — rendering their environmental impact manageable through existing regulatory oversight. The Government accordingly requests that healthcare establishments, as defined under the Bio-Medical Waste Management Rules, 2016, be treated as regulated public-service infrastructure within ESA villages rather than subject to blanket prohibition, subject to prior Environmental Clearance wherever applicable, Consent to Establish and Operate, compliance with the Bio-Medical Waste Management Rules, advanced sewage treatment, scientific biomedical-waste disposal through authorised facilities, rainwater harvesting, renewable energy use, green-building principles for major institutions, disaster-preparedness planning and periodic environmental audit.

7. Pumped Storage Hydroelectric Projects (PSPs)

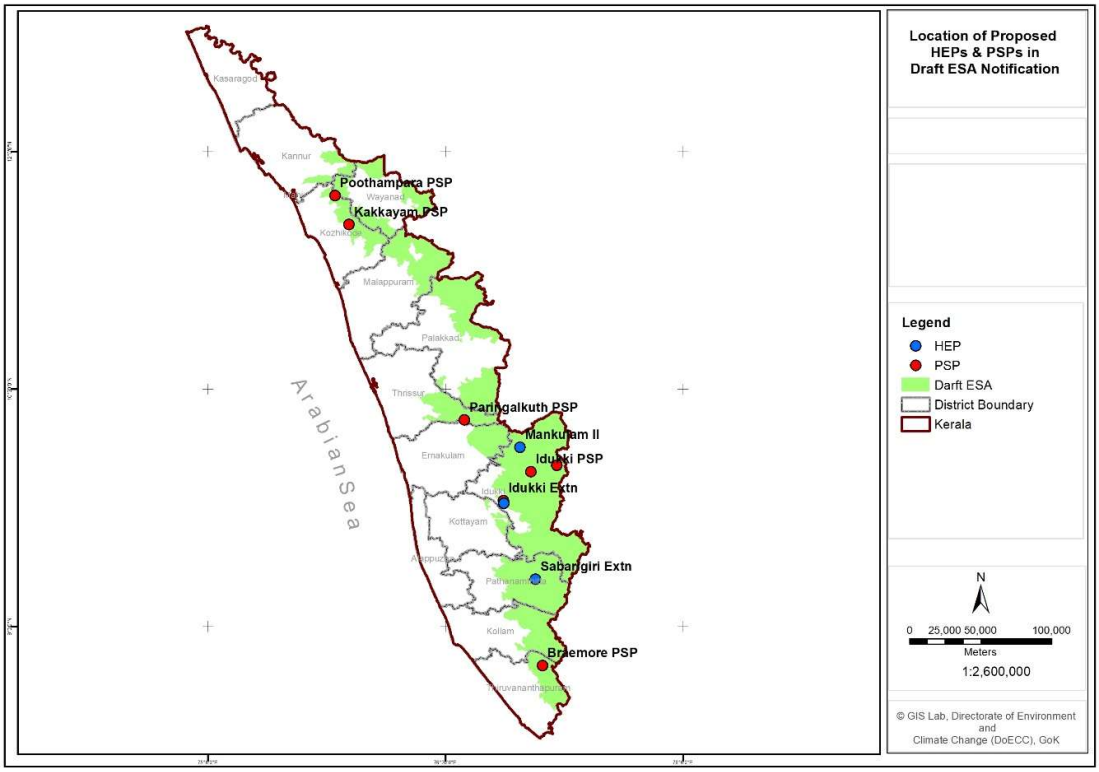
Pumped Storage Projects (PSPs) present a specific regulatory anomaly under the draft Notification. Clause 3(2)(a) already recognises new hydropower projects as a regulated — not prohibited — activity, subject to conditions including a minimum thirty percent ecological flow, cumulative basin-level impact assessment and a minimum three-kilometre spacing between projects. However, because CPCB categorisation classifies hydropower projects above 50 MW as Red, the same class of project becomes prohibited under Clause 3(1)(c) despite being expressly and separately regulated under Clause 3(2)(a). The Government requests that PSPs and

capacity-enhancement of existing hydropower projects be explicitly exempted from the Red Category prohibition and continue to be governed under the dedicated hydropower provisions of Clause 3(2)(a).

This request is grounded in the strategic importance of storage to India's energy transition. Solar and wind generation are inherently variable, and maintaining grid stability as their share increases requires large-scale, long-duration storage; pumped storage is presently the most mature, reliable and economically viable technology for this purpose, and the Government of India has actively encouraged States to identify suitable PSP sites in support of the National Electricity Policy, National Electricity Plan and India's Nationally Determined Contributions under the Paris Agreement. Kerala's own energy position makes this particularly pressing: the State presently meets close to eighty percent of its electricity requirement through external power purchases, with internal generation contributing roughly twenty percent, and its geography — bounded by the Arabian Sea and the Western Ghats, with limited interstate transmission corridors and extensive protected forest — constrains further transmission expansion. Electricity demand is projected to grow at a compound annual rate of approximately 5.1 percent between 2023–24 and 2029–30 per the 20th Electric Power Survey of India, even as the State pursues carbon neutrality by 2050 and rapidly expands solar generation, creating a structural mismatch between daytime solar surplus and evening peak demand that pumped storage is specifically designed to resolve.

Unlike conventional Red Category industries, PSPs generate no industrial effluent, hazardous chemical, toxic emission or process waste; they operate by cycling water between an upper and lower reservoir, storing surplus generation as potential energy and releasing it through turbines at peak demand, and the Ministry of Power has recognised hydropower above 25 MW as a renewable energy source. Kerala State Electricity Board Limited has identified approximately 2,200 MW of PSP capacity together with hydropower extension schemes, prioritising the use of existing reservoirs specifically to minimise additional land acquisition, forest diversion and submergence relative to greenfield development. The map depicting the potential PSPs identified and proposed by KSEB is enclosed. Given that Clause 3(2)(a) already provides a comprehensive, condition-based regulatory pathway — ecological flow, cumulative impact assessment, biodiversity assessment and inter-project spacing — an additional blanket Red Category prohibition would duplicate regulation rather than add safeguard value, while significantly constraining the State's ability to integrate renewable energy, reduce fossil-fuel dependence and

meet its climate commitments. The Government accordingly proposes that PSPs be permitted subject to Environmental Clearance under the EIA Notification, 2006, comprehensive and cumulative basin-level impact assessment, maintenance of prescribed ecological flows, biodiversity and wildlife assessment, geological and geotechnical investigation, disaster-risk assessment, a sediment-management plan, compensatory afforestation wherever required, and full compliance with the Environment (Protection) Act, the Forest (Conservation) Act and the Wildlife (Protection) Act — with preference given to projects utilising existing reservoirs and involving minimal additional forest diversion.



Conclusion

None of the relaxations sought in this note seek exemption from environmental regulation. In each case, the Government requests that a defined, essential activity — one already operating in several ESA villages, or one for which comparable oversight exists under dedicated Central legislation such as the Bio-Medical Waste Management Rules or the hydropower-specific provisions of Clause 3(2)(a) — be treated as a regulated activity subject to stringent, activity-specific safeguards, rather than being placed under a blanket Red Category prohibition that does not distinguish scale, mitigation technology or socio-economic necessity. Dairy and

meat processing, CETPs and TSDFs, tourism accommodation, healthcare, and pumped storage hydropower are each, on the technical grounds set out above, better served by calibrated regulation than outright prohibition — an approach consistent with the CPCB's own classification philosophy, with existing national practice in Eco-Sensitive Zones, and with the conditional, safeguard-based regulation the draft Notification already applies to comparable activities elsewhere. The Government accordingly requests that the Ministry consider case-by-case relaxation of Clause 3(1)(c) for the activities addressed in this note, subject to the specific safeguards proposed for each.