

A Brief Report on the Site Inspection at Thaliparamba Taluk, Kannur District, Kerala

Location: Thaliparamba Taluk

Dates of Inspection: 22-09-2018 and 23-09-2018

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Thiruvananthapuram

Maps Prepared & Report Approved by: Parvathy S., Hazard & Risk Analyst, KSEOC,
Thiruvananthapuram

The Additional Advocate General has directed (Vide writ petition No: AAG-RT/WPC 24261/2018; dated 18-09-2018) the Kannur District Collector & the Member Secretary, Kerala State Disaster Management Authority (KSDMA) to report whether any landslide occurred in Udayagiri village and Thaliparamba taluk for the period from June 2018 to September 15, 2018. Based on the instruction (Vide E-mail dated 21-09-2018) from the Member Secretary (KSDMA) we visited the landslide occurred locations in Thaliparamba taluk on September 22 & 23, 2018. The Deputy Collector (Disaster Management), Kannur Collectorate has provided vehicle and supporting staff.

On September 22, 2018 Morning, after the meeting with the Deputy Collector (DM) we met Mr. Jennyfer Varghese, Udayagiri Village Officer and discussed the matter. The village officer told us that he has noticed a minor soil slip in the Malabar Sand & Stones Pvt. Ltd. quarry premises. We visited the Malabar Sand & Stones quarry site along with the Udayagiri Village Officer. One debris flow* and one minor landslip with flow marks have been noticed. In our opinion this landslip can be categorized into a minor debris flow. The details are included in the table.

Sl. No.	Name of location	Village	Latitude & Longitude	Zone
1.	Malabar Sand & Stones Pvt. Ltd. Site 1 (L-1)	Udayagiri	12° 14' 37.6" N & 75° 27' 25.4" E	RED
2.	Malabar Sand & Stones Pvt. Ltd. Site 2 (L-2)	Udayagiri	12° 14' 36.5" N & 75° 27' 23.7" E	RED

After that we visited other landslide incident sites in Eruvessy (along with Mr. Vijayan, Junior Superintendent, Thaliparamba Taluk), Vellad (along with Mr. Thomas Chacko, Special Village Officer), and New Naduvil (along with Mr. Valsan, Special Village Officer) villages, and visited the landslides sites in Payyavoor village (along with Mr. Anil Varghese, SVO) on September 23, 2018. A total of 12 landslide (debris flow) incidences, (including the two in Udayagiri Village) have been reported from the Thaliparamba taluk during the period from June 2018 to September 15, 2018. The co-ordinates have been collected using the handheld GPS. The details of the landslides are shown in the table.

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Sl. No.	Name of Place	Village	Latitude & Longitude	Date	Zone
1.	Vanchiyam	Eruvessy	12° 08' 57.2" N & 75° 35' 17.9" E	August 8, 2018	Not in LSZ
2.	Areekkamala	Eruvessy	12° 08' 19.7" N & 75° 34' 26.9" E	August 8, 2018	RED
3.	Paithalmala	Eruvessy	12° 09' 25.2" N & 75° 34' 37.2" E	August 8, 2018	RED
4.	Purathotty	Eruvessy	12° 09' 45.4" N & 75° 34' 11.8" E	August 8, 2018	RED
5.	Munnoor Kochi	New Naduvil	12° 09' 40" N & 75° 32' 13.2" E	August 14, 2018	RED
6.	Mukkuzhi	Payyavoor	12° 07' 46.8" N & 75° 37' 42.6" E	August 8, 2018	RED
7.	Thenamkayam 1	Payyavoor	12° 07' 35.2" N & 75° 38' 28.4" E	August 8, 2018	RED
8.	Thenamkayam 2	Payyavoor	12° 07' 34.7" N & 75° 38' 30.7" E	August 8, 2018	RED
9.	Maadakolli	Payyavoor	12° 08' 56.0" N & 75° 36' 24.0" E	August 8, 2018	RED
10.	Udumberi	Vellad	12° 11' 16.8" N & 75° 29' 52.8" E	August 7, 2018	RED

The co-ordinates of the landslide incidences have been overlaid on the Landslide Susceptible Zones (LSZ) using ArcGIS software to identify whether it falls on **RED** or **ORANGE** zone and the maps have been prepared.

*A debris flow is a form of rapid mass movement in which a combination of loose soil, rock, organic matter, air, and water mobilize as slurry that flow down slope. Debris flows include <50% fines. Debris flows are commonly caused by intense surface-water flow, due to heavy precipitation or rapid snowmelt that erodes and mobilizes loose soil or rock on steep slopes.

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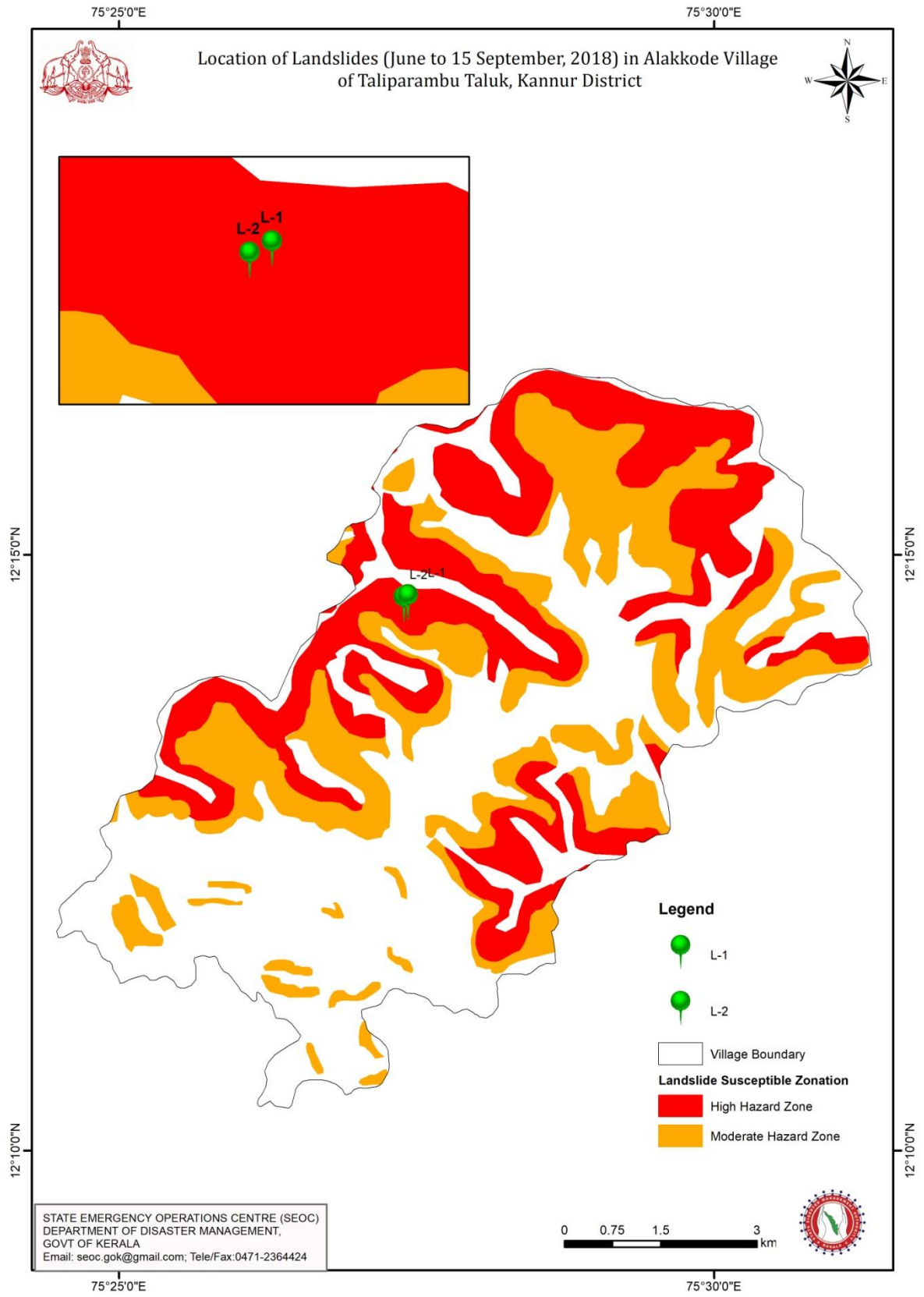
VARNES' CLASSIFICATION OF SLOPE MOVEMENTS (1978)

Varnes, D. J. 1978. Slope movement types and processes. In: *Special Report 176: Landslides: Analysis and Control* (Eds: Schuster, R. L. & Krizek, R. J.). Transportation and Road Research Board, National Academy of Science, Washington D. C., 11-33.

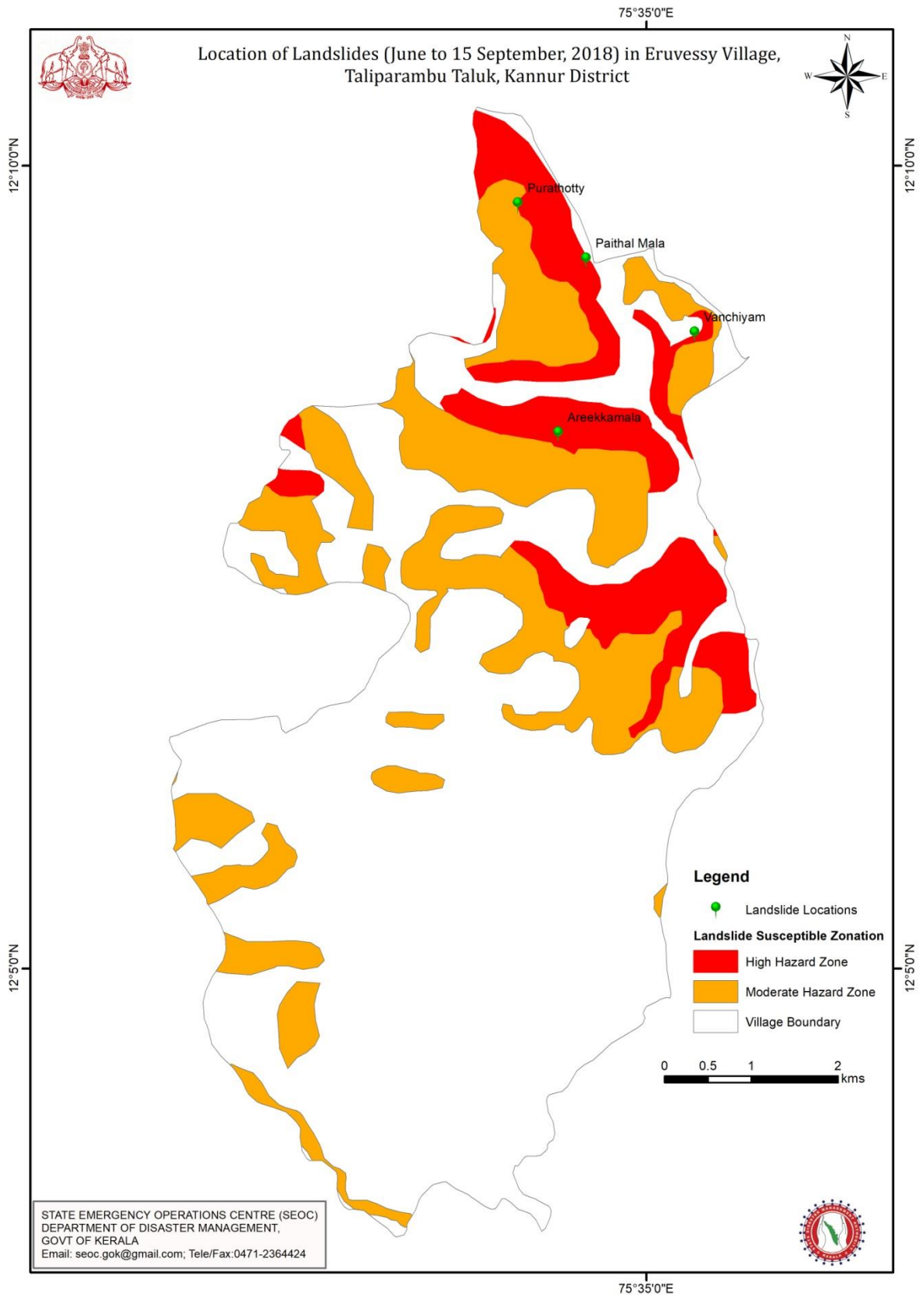
TYPE OF MOVEMENT		TYPE OF MATERIAL		
		BEDROCK	ENGINEERING SOILS	
			Predominantly coarse	Predominantly fine
FALLS		Rock fall	Debris fall	Earth fall
TOPPLES		Rock topple	Debris topple	Earth topple
SLIDES	ROTATIONAL	Rock slide	Debris slide	Earth slide
	TRANSLATIONAL			
LATERAL SPREADS		Rock spread	Debris spread	Earth spread
FLOWS		Rock flow (deep creep)	Debris flow (soil creep)	Earth flow
COMPLEX		Combination of two or more principal types of movement		

Abbreviated version of Varnes' classification of slope movements (Varnes 1978)

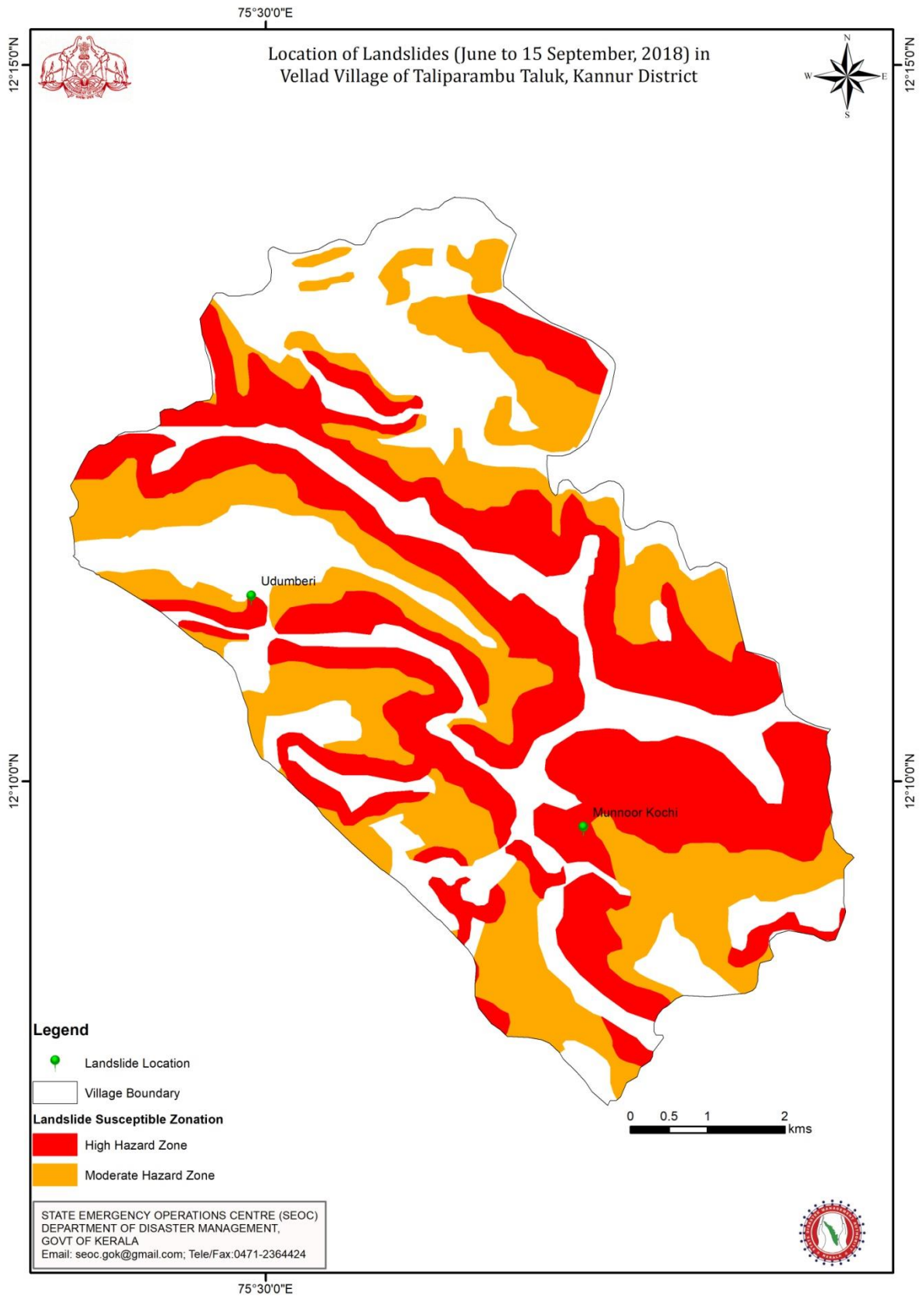
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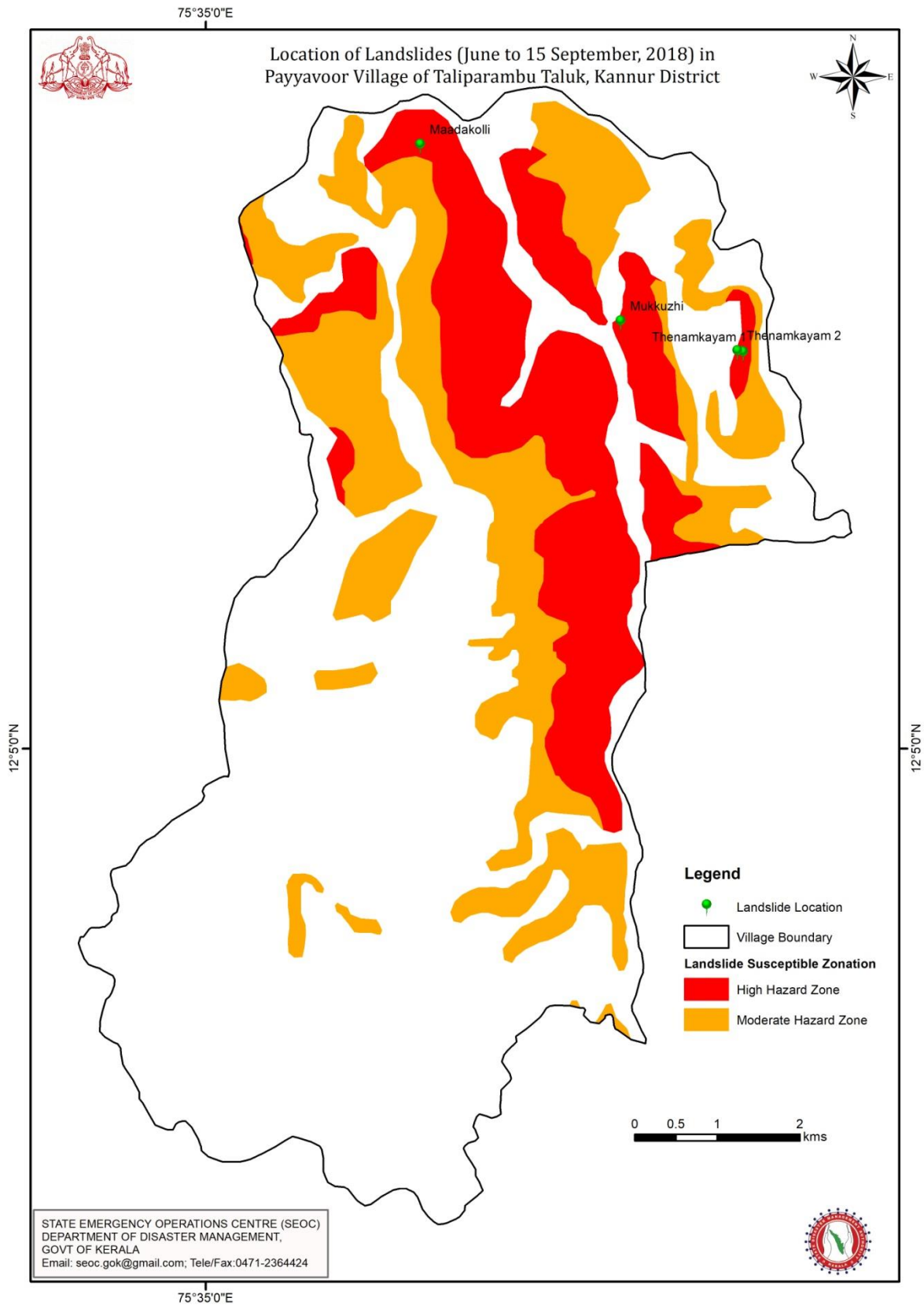
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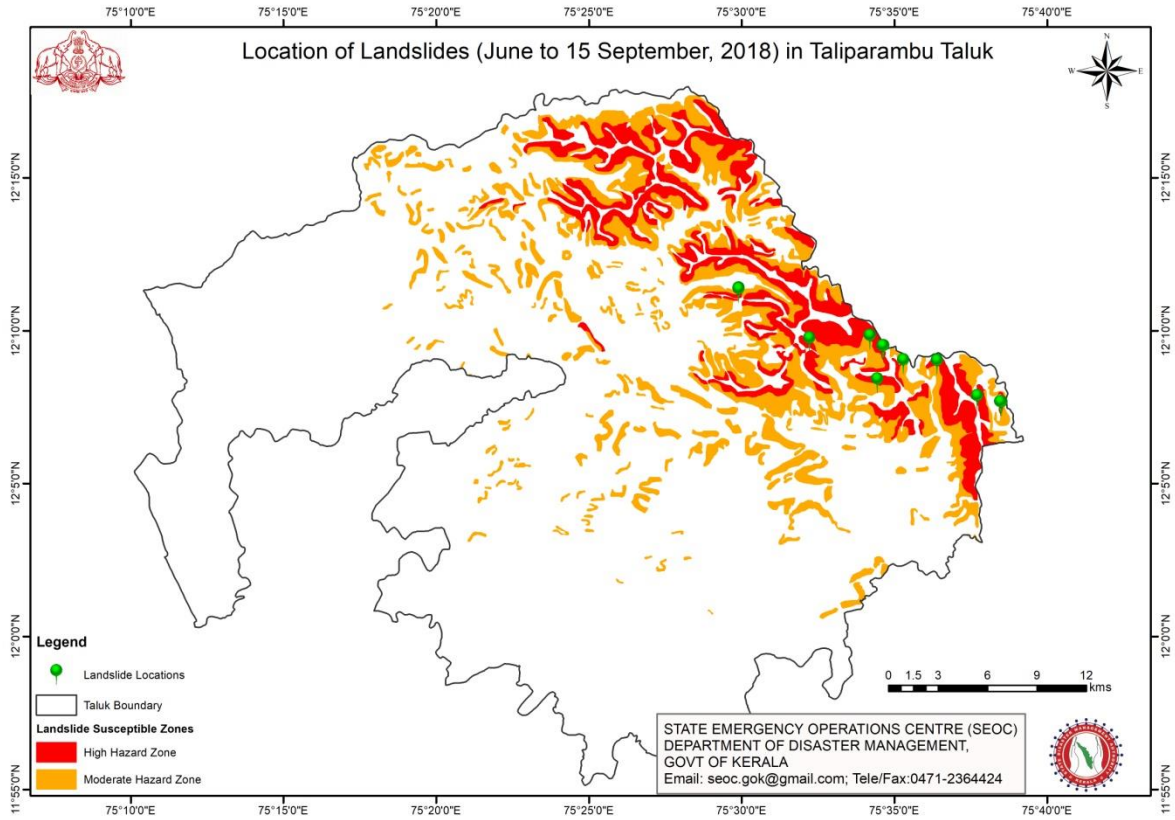
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QUARRY SITE 1



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QUARRY SITE 2



VANCHIYAM



AREKKAMALA



PAITHALMALA



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PURATHOTTY



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MUNNOOR KOCHI



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MUKKUZHI



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THENAMKAYAM 1



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THENAMKAYAM 2



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MADAKOLLI



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UDUMBERI



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