

## **A Reconnaissance Report on Capacity Assessment of Kerala State for Landslides Risk Reduction and Management**

Thursday, 11 October 2018: A reconnaissance visit has been made to the Kerala state during 9-11 October 2018 to get a rapid assessment of the landslides related initiatives and capacities in post disaster situation.

In this regard, meetings have been held with the officials from the relevant departments like Geological Survey of India (GSI), National Centre for Earth Science Studies (NCESS), Department of Geology, University of Kerala, Institute for Land and Disaster Management (ILDMA), UNDP Coordinator Ms. Rita and Environmental specialist Mr. Easa along with Mr. Manish Mohan Das and Shri Rajaram Mahendra, UNICEF, Additional Chief Secretary (Economics and Planning), Dr. Vishwas Mehta, IAS, Additional Chief Secretary (Revenue and Disaster Management), Shri P.H. Kurian, IAS and Member Secretary Kerala State Disaster Management Authority (KSDMA), Dr. Sekhar L. Kuriakose as well as local administration in the hill districts.

It emerged from the meetings that NCESS has prepared Landslide Hazard Zonation Maps of the state in the scale of 1:50,000 using BIS methodology. GSI has also done landslides hazard zonation (LHZ) studies covering about 50% of the total hilly terrain in the state and the rest 50% area, the work is in progress in the scale of 1:50,000. These maps can be utilized for policy and regional planning / development. However, these maps cannot be used for site specific planning and development and detailed studies / mapping is required on a large scale depending upon area of study. It has been informed by DDG GSI that the organization has prepared landslide inventory map for the state and hence, landslides specific information / parameters can be taken from these inventory maps. However, the studies are not yet complete and the GSI teams are working in the field to gather necessary information and prepare complete inventory and maps in the post monsoon / flood situation for this year.

The meetings also indicated lack of coordination and integration among different stakeholders as well as gaps in technical capacities for site specific investigations, monitoring and remediation works.

During the discussions with UNDP team, it has been informed that huge damages and losses to properties and infrastructures from the landslides in the

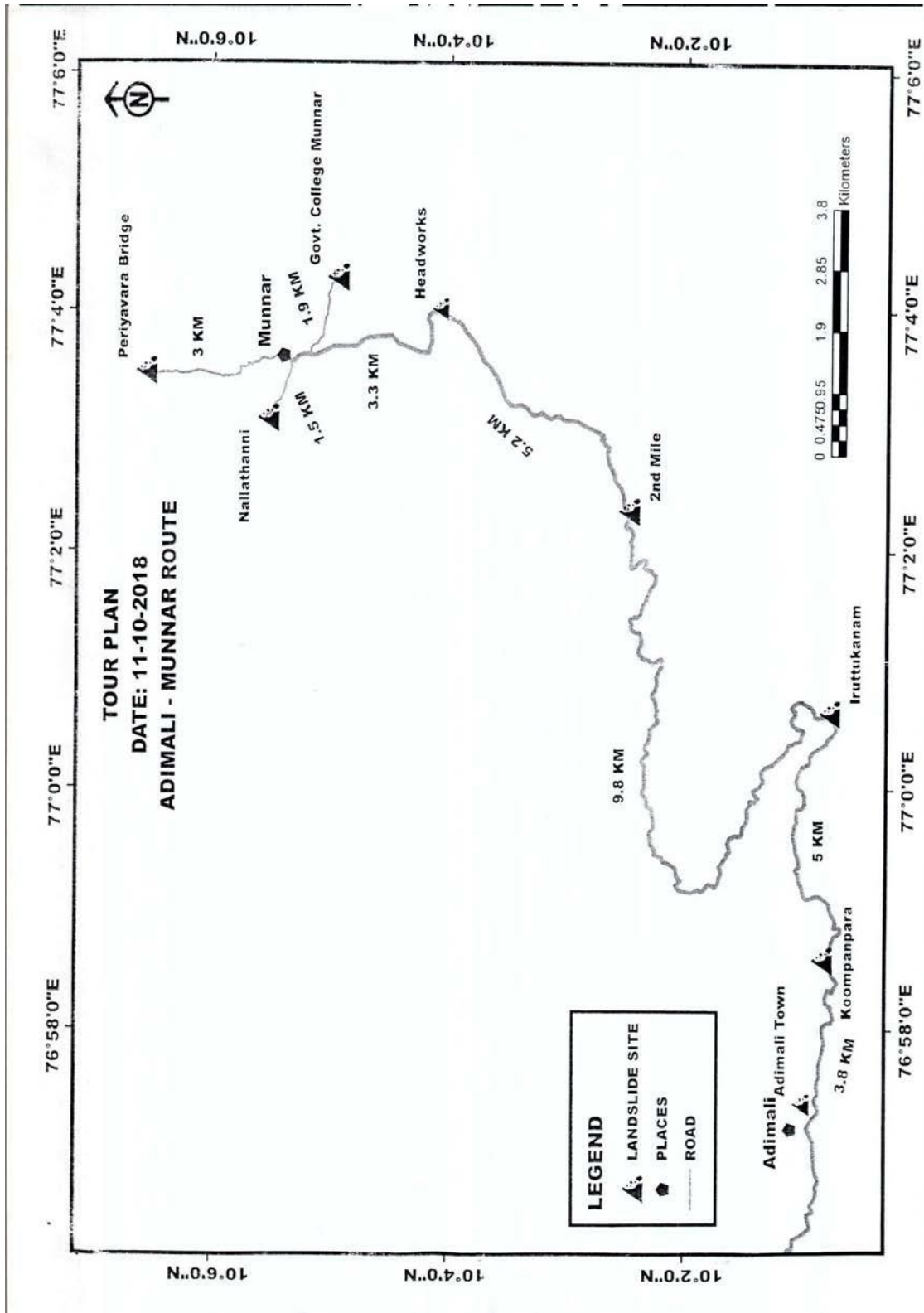
hilly terrains besides the large number of human deaths attributed to landslides. Hence, it is very important to consider landslides risk reduction and management in the reconstruction and recovery phase for building back better with reduced risks in the future.

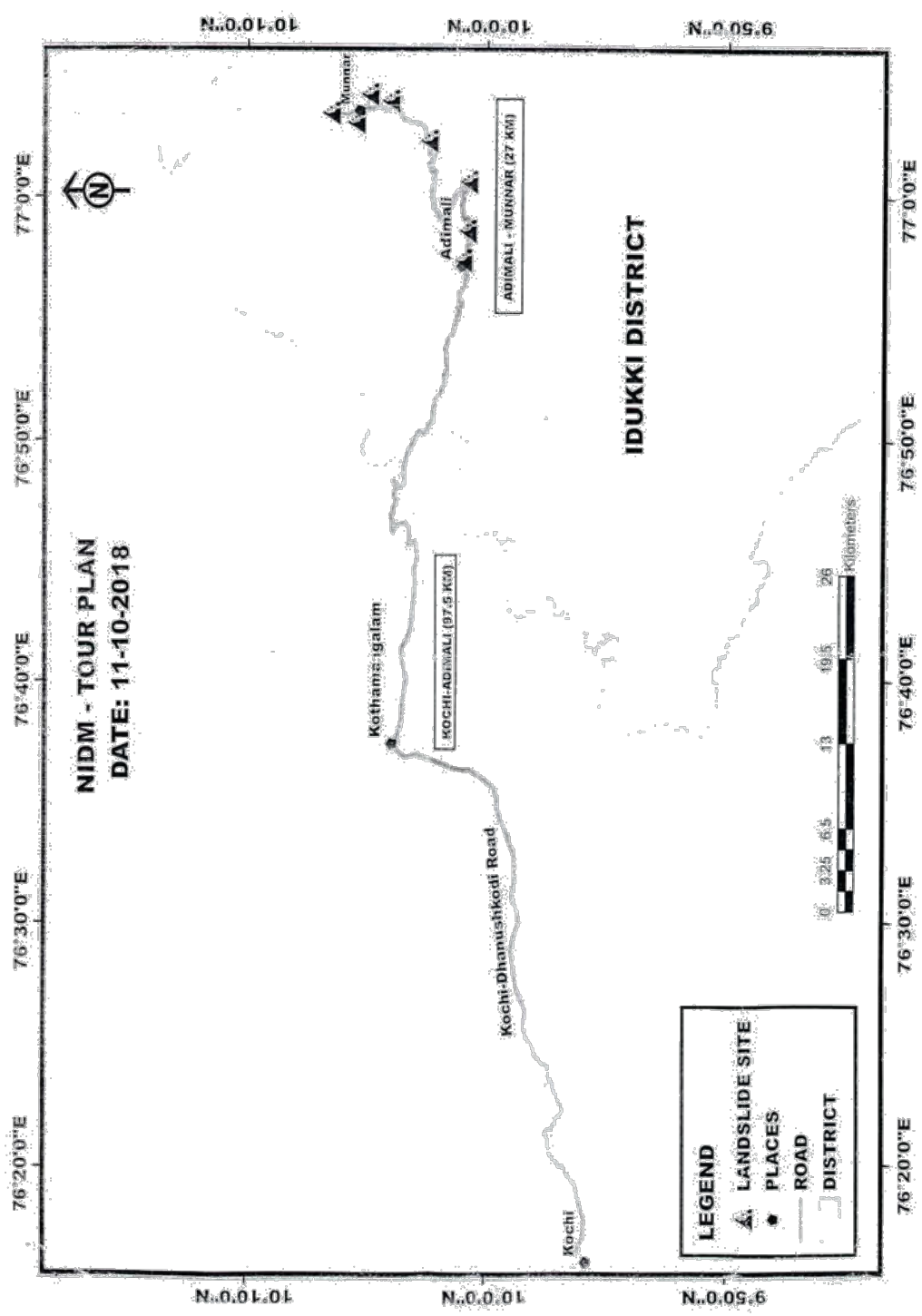
The meeting were followed by field visit to Munnar, Idukki District, jointly with Mr. Ajin, representative from KSDMA and Mr. P.K. Shaji, Tehsildar, Devikulam Taluk, Idukki district, to get an idea about the recent landslides and actions taken at local level by respective agencies.. The team visited different landslide sites as shown in the attached map. The sites included Periyavara bridge, Government College Munnar, Headworks, 2<sup>nd</sup> mile, Iruttukanam, Koompanpara and Adimali. The field observations indicated that the area is predominantly occupied by Tea Estate workers but the construction of houses and road is haphazard and unplanned. The drainage system is also not well maintained. The area lies at about 1600m above mean sea level and forms part of the mountain ranges of Western Ghats. Geologically it constitutes charnockites, khondalites, migmatites of Proterozoic age.

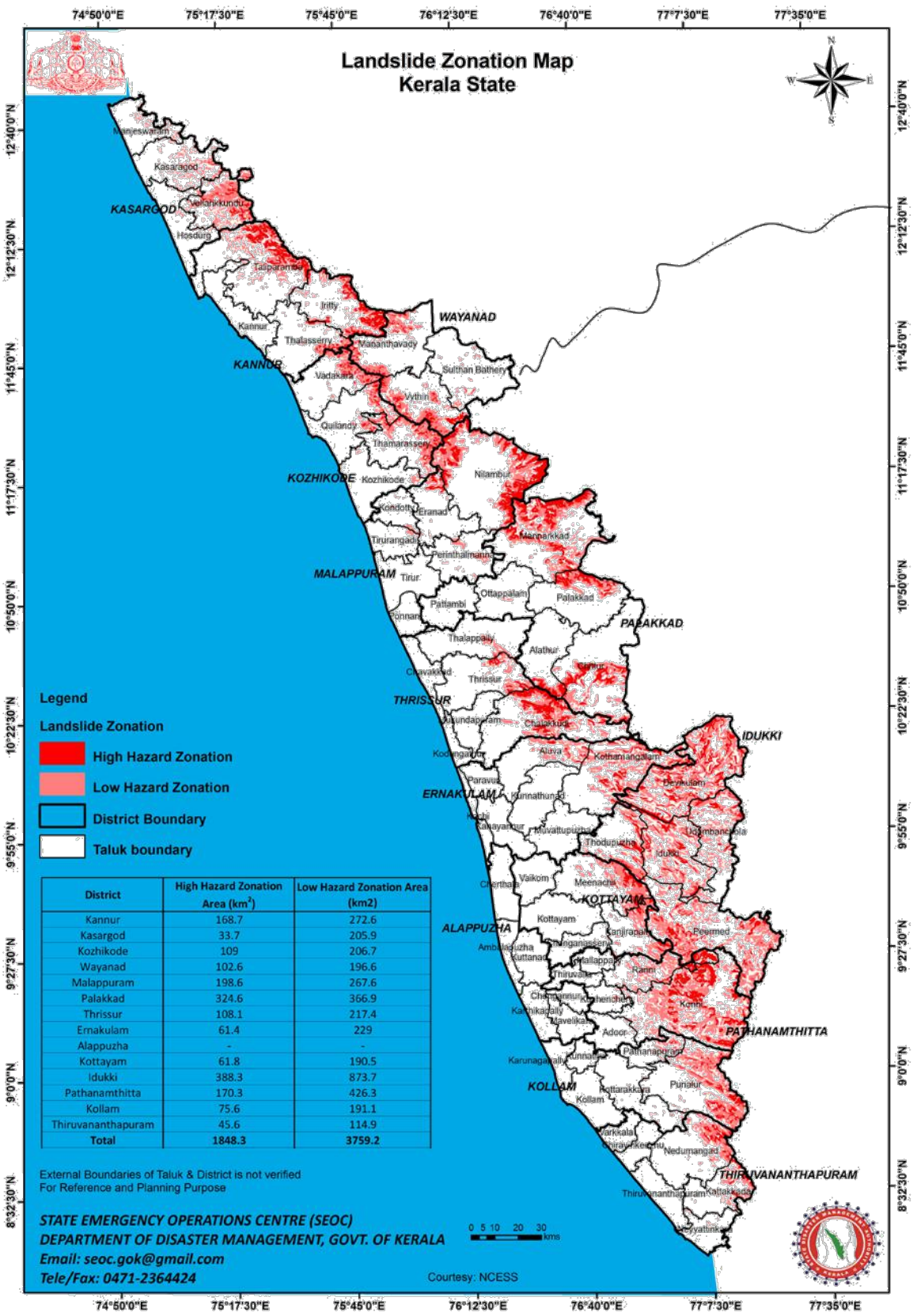
The following suggestion are made on the basis of the meetings and the field visit to landslide affected sites.

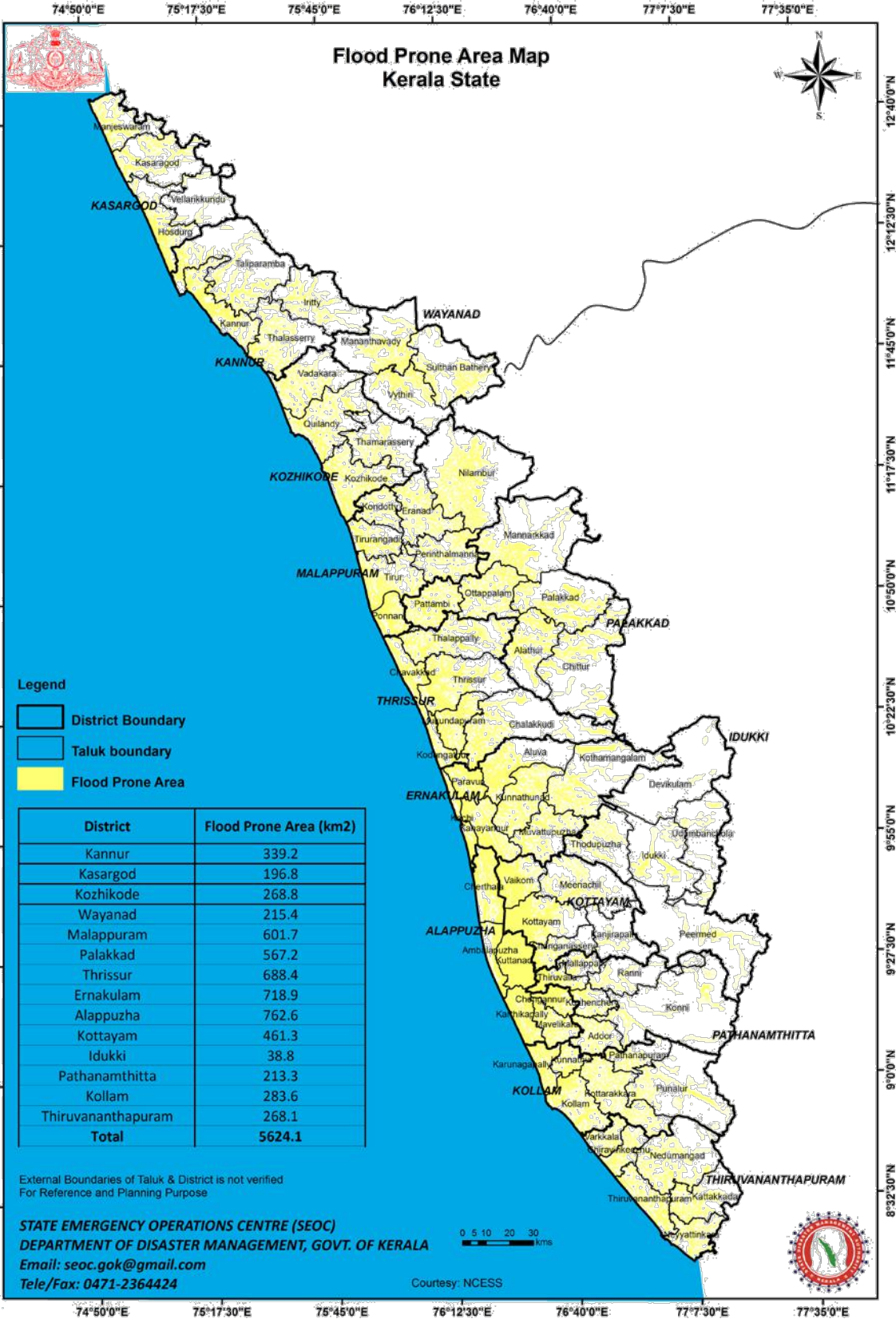
- Training and Capacity Enhancement in the field of Landslides Risk Reduction and Management at local levels in the State is very much required. NIDM may support KSDMA and GSI along with other stakeholders in development and enhancement of the local capacity for landslides risk reduction and resilience.
- There is a dire need for coordination, networking and linkage among different organizations and experts working on landslides in the state including KSDMA, GSI, NCESS, PWD, Department of Geology, Civil Engineering, Irrigation and Flood Control, Forest, Agriculture, and other relevant departments / organizations.
- Strengthening of infrastructures, facilities and services for undertaking landslides studies, research and management.
- Sensitization and awareness among public, particularly affected communities and responsible officials / organizations
- Establish Demonstrative Best Practices of Landslides Management

- Better regulations and enforcement for landuse, construction and development including policy, advocacy, implementation, monitoring and management



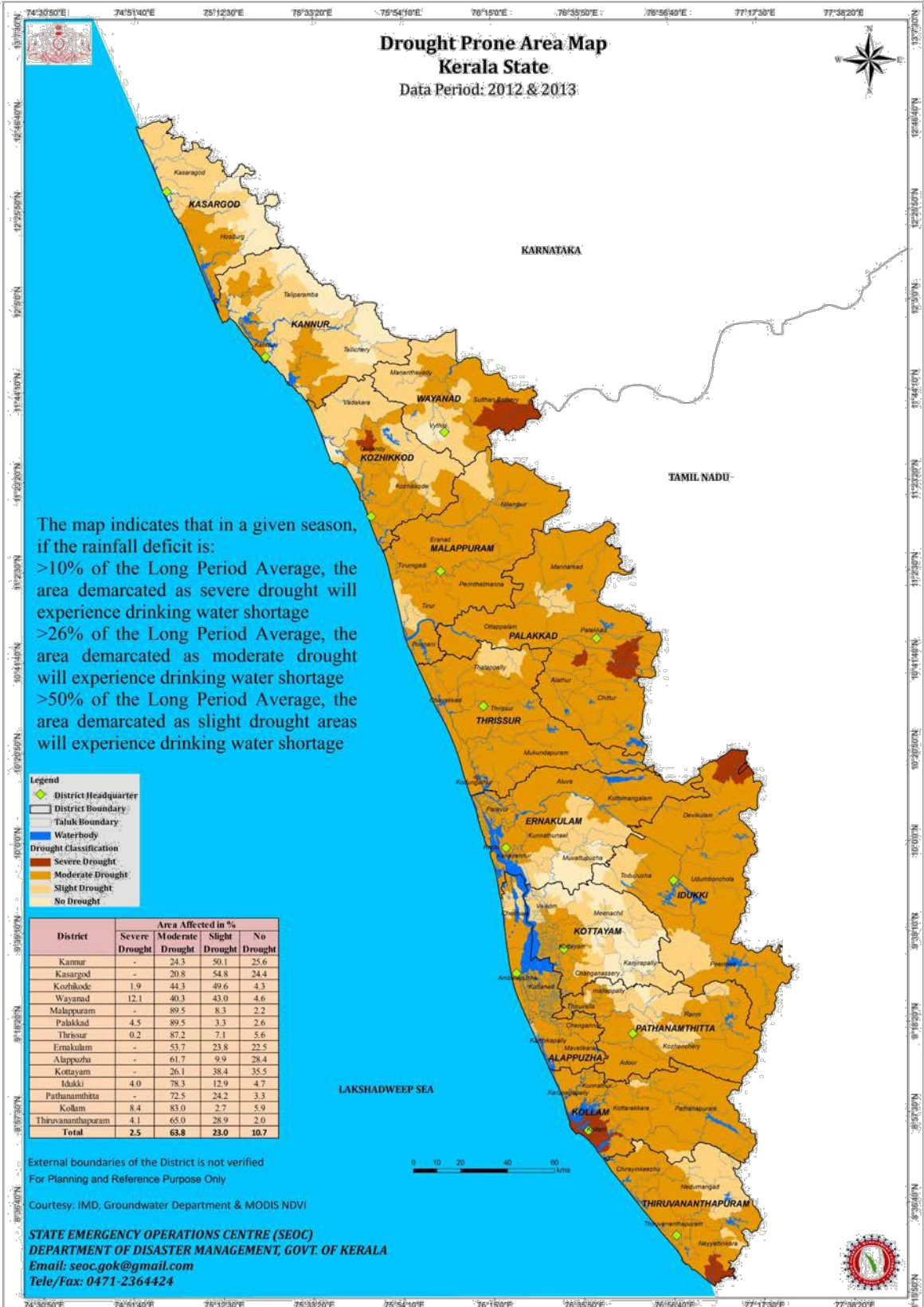






# Drought Prone Area Map Kerala State

Data Period: 2012 & 2013



The map indicates that in a given season, if the rainfall deficit is:

- >10% of the Long Period Average, the area demarcated as severe drought will experience drinking water shortage
- >26% of the Long Period Average, the area demarcated as moderate drought will experience drinking water shortage
- >50% of the Long Period Average, the area demarcated as slight drought areas will experience drinking water shortage

- Legend**
- ◆ District Headquarter
  - ▭ District Boundary
  - ▭ Taluk Boundary
  - ▭ Waterbody
  - Severe Drought
  - Moderate Drought
  - Slight Drought
  - No Drought

District	Area Affected in %			
	Severe Drought	Moderate Drought	Slight Drought	No Drought
Kannur	-	24.3	50.1	25.6
Kasaragod	-	20.8	54.8	24.4
Kozhikode	1.9	44.3	49.6	4.3
Wayanad	12.1	40.3	43.0	4.6
Malappuram	-	89.5	8.3	2.2
Palakkad	4.5	89.5	3.3	2.6
Thrissur	0.2	87.2	7.1	5.6
Ernakulam	-	53.7	23.8	22.5
Alappuzha	-	61.7	9.9	28.4
Kottayam	-	26.1	38.4	35.5
Idukki	4.0	78.3	12.9	4.7
Pathanamthitta	-	72.5	24.2	3.3
Kollam	8.4	83.0	2.7	5.9
Thiruvananthapuram	4.1	65.0	28.9	2.0
<b>Total</b>	<b>2.5</b>	<b>63.8</b>	<b>23.0</b>	<b>10.7</b>

External boundaries of the District is not verified  
For Planning and Reference Purpose Only



Courtesy: IMD, Groundwater Department & MODIS NDVI

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