



National workshop and field training
on
**“Land disturbance due to soil piping in the
Western Ghats”**

July 5 and July 6-9, 2017



ESSO – National Centre for Earth Science Studies (NCESS),
Govt. of India



State Disaster Management Authority (SDMA),
Govt. of Kerala

Background

Landslides and floods are common features in the Western Ghats during monsoon. But during the last decade land subsidence due to collapse of subsurface cave and tunnel roofs have largely been reported from various part of Western Ghats of Kerala. The agriculture productivity was affected and the terrain often becomes inhospitable. Development of subsurface tunnels alters the hydrogeology of the area and open wells often becomes unsustainable even during high rains. Formation of underground cavities due to subsurface soil erosion affect the structures and roads on the surface. Subsurface soil erosion was even detected very near to a large earth dam made of local earth in Kerala. The studies conducted by NCESS at the affected sites indicated that the land subsidence and subsurface cavity formation is due to process called “Soil piping”.

Soil piping (tunnel erosion) is the formation of underground tunnels due to subsurface soil erosion. When the tunnel grows bigger and bigger the roof collapses and subsidence occurs. In the Western Ghats, it usually occurs in the lateritic terrains. Land subsidence due to soil piping was first reported in Thirumeni village, Kannur district, where a large ground subsidence occurred in 2005. A detailed field inspection by CESS (now NCESS) indicated that this subsided area is connected with large underground tunnels. In the beginning it was thought that this was an isolated incidence. But subsequently several such incidences were noticed in different part of the highlands. Investigations Carried out by NCESS have indicated that the areas adjoining Kannur/ Kasaragod districts in the Coorg locality of Karnataka are the most infested zones with soil piping. Apart from Kannur and Kasaragod other districts such as Kozhikode, Wayanad, Palakkad, Ernakulam, Kottayam, Idukki, Pathanamthitta are also reported to be prone to soil piping

Realising the seriousness of the problem the NDMA Govt. of India has sponsored a research programme to study soil piping in Kerala highlands during 2012-16. Under this programme a data base of soil piping locations was created, carried out mapping of underground tunnels using geophysical methods, studied the causative factors and finally proposed certain site specific mitigation methods. Further, SDMA, Govt. of Kerala has sponsored a programme in 2017 to follow up the studies on soil piping by NCESS.

Based on the recommendation given by NCESS the state Government has declared “Soil Piping” as a state specific hazard. To address this problem on a larger platform involving many institutions NCESS proposes to conduct a national workshop on soil piping as part of providing awareness to stake holders and also to bring academician, researchers and officers of line departments together to discuss the related issues.



The workshop is will be held on Wednesday 5th of July 2017 at NCESS, Thiruvananthapuram, Kerala with a field component during 6-9 July, 2017 around Cherupuzha, Kannur District, Kerala.

You are requested to kindly confirm your participation before May 5, 2017 . We are envisaging about 40 participants for the workshop and about 15 for the field programme.

Please mail your confirmation to

G Sankar [sankarazhakath @gmail.com](mailto:sankarazhakath@gmail.com) (co-chairman),

Mob: 9447008391 & Phone 0471 2511637

Dr. D. S. Suresh Babu dssbabu@gmail.com (Org.Secretary)

Phone 0471 2511504