



Government of India
Geological Survey of India

Kolkata, 19th July 2014

No./150/CD/ Geological Heritage Site/Andhra Pradesh/2014

RESOLUTION

On

DECLARATION OF THE *ERRA MATTI DIBBALU* – THE DISSECTED AND
STABILIZED COASTAL RED SEDIMENT MOUNDS LOCATED BETWEEN
VISHAKHAPATNAM AND BHIMUNIPATNAM, ANDHRA PRADESH AS
GEOHERITAGE SITE

1. Natural processes of weathering and erosion sculpt exquisite artefacts from the rock sequences. The best landscapes, illustrating the evolutionary history of the earth and at times including the climatic conditions that once existed at the site of their formation need to be regarded as invaluable inheritance that not only needs to be conserved as Geoheritage sites, but also publicised through a conscious effort amongst the masses so that their significance and the need to protect them from the natural degradation and more importantly anthropogenic forces of destruction is understood by the geoscientists as well as the population at large. Conservation and protection of such marvels of nature which silently speak volumes about the journey of our planet through time is vital for posterity because once lost it can never be retrieved again.
2. The optimal and sustainable approach for conservation of Geological Heritage sites that is being long practiced in the world is to establish Geoparks. Geoparks are nationally protected areas containing one or a group of

geological heritage sites of distinctive importance, rarity or aesthetic appeal. These are the special landscapes that are not to be disturbed or destroyed for temporary satiation through human encroachments but are to be preserved for their immense geoheritage value.

3. The development of Geoparks is done through a three pronged approach involving Conservation, Education and Geotourism. Under 'Conservation', the management authority of Geopark needs to ensure adequate protection measures in consultation with collaborating geological surveys, academic institutions and/ or relevant statutory bodies in accordance with local traditions and legislative obligations. Within the realm of 'Education', these sites need to be used as research bases for important geoscientific issues, educational field bases for Earth Science students and scientific popularization bases for the general public. In the sphere of 'Geotourism', Geological Heritage sites can support local economies and promote local employment that would further sensitize local governments as well as local inhabitants through the development of the feeling of ownership amongst them. The tourism aimed at encouraging interest in geosciences or enhancing geoscientific knowledge or promoting recreation in natural settings can generate revenues to support conservation and maintenance of the Geoheritage sites and provide the sustainable source of livelihood to the local population.

4. In Indian context, Geological Survey of India has the necessary authority (as per its Charter of Functions) to identify and delineate areas of such unique geological significance. Accordingly, the Geological Survey of India has identified many sites of geological importance and exceptional geomorphic expression/ landscapes. The Geological Survey of India has till date declared twenty-nine sites as National Geological Monuments/ Geoheritage Sites across the country. Recently, a piece of legislation on "Geological Heritage Sites (Declaration, Conservation, Protection and Maintenance): Act 2014" has also been prepared which once enacted would formally accord and legally




recognize already declared and newly identified sites of geoscientific importance as "Geological Heritage Sites".

5. Through this official proclamation, the Geological Survey of India resolves to recognise and declare the *ERRA MATTI DIBBALU* – the dissected and stabilized coastal red sediment mounds/ dunes forming characteristic badlands located between Vishakhapatnam and Bhimunipatnam, Andhra Pradesh as a **Geoheritage Site**.
6. The dissected and stabilized coastal red sediment mounds, locally known as *Erra Matti Dibbalu* are bounded by 17°51'55"N and 17°52'46"N latitudes and 83°24'29"E and 86°26'39"E longitudes. Situated about 20 km northeast of Vishakhapatnam and about 4 km southwest of Bhimunipatnam and located at an elevation of about 10 to 90m above sea level, they vary in width between 200 m and 2 km in the east – west direction and extend for about one km in north – south.
7. Although first reported by the Geological Survey of India over a century ago as 'badlands' representing great sand banks or as isolated banks around the then buried hills (King, 1886), the *Erra Matti Dibbalu* did not attract the attention of the earth scientists almost till the middle of the 20th century. Thereafter, they have continued to be the focus of attention of the earth scientists including geologists, geomorphologists and sedimentologists, as well as the archaeologists and other culture historians.
8. The multifarious studies that have taken place in the area have concluded that the 'red sediments' are in fact made of a sequence of yellow (oldest), reddish brown, brick red and light yellow (youngest) sediments that vary in size from sand to clay through silt and at places contain calcrete and siliceous columnar concretions. The distribution of various components of the largely Holocene *Erra Matti Dibbalu* sequence appears to be controlled by changes in the aeolin, fluvial and marine agencies operating on the sediments as well as the neo-tectonic activities whereas, the distribution of the calcareous and siliceous



columnar structures is controlled by erosional processes operative on the irregular topography of the basement.

9. The proposed Geoheritage site, the *Erra Matti Dibbalu* presents varied landforms such as sand dunes, gullies, buried channels, beach ridges, valley in valley, paired terraces, etc. They also record events of paleoenvironmental/ climatic changes and ancient human activity. Moreover, it is also unique and rare because it is one amongst the only three remaining gullied red dunes formations in south-east Asia. It is therefore necessary that the *ERRA MATTI DIBBALU* – the dissected and stabilized coastal red sediment mounds located between Vishakhapatnam and Bhimunipatnam, Andhra Pradesh are protected, conserved and maintained through the time tested practice of establishing Geopark so that the geological treasure is neither disturbed nor destroyed and is instead protected, conserved and valued for posterity owing to its geoscientific significance and geotourism potential.


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