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Title: Marine Dust from the Sahara Desert in Africa Nourishing the Mighty Amazon Rainforest of South America

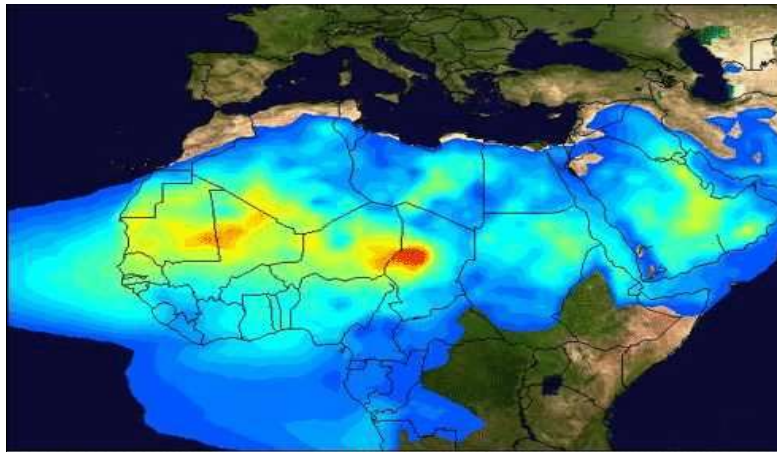
Introduction:

The Bodélé Depression which is also known as the Bodele, is located at the southern edge of the Sahara Desert in the republic of Chad and it is the lowest point in Chad.

Fig.1: Showing a World map with the location of the republic of Chad:

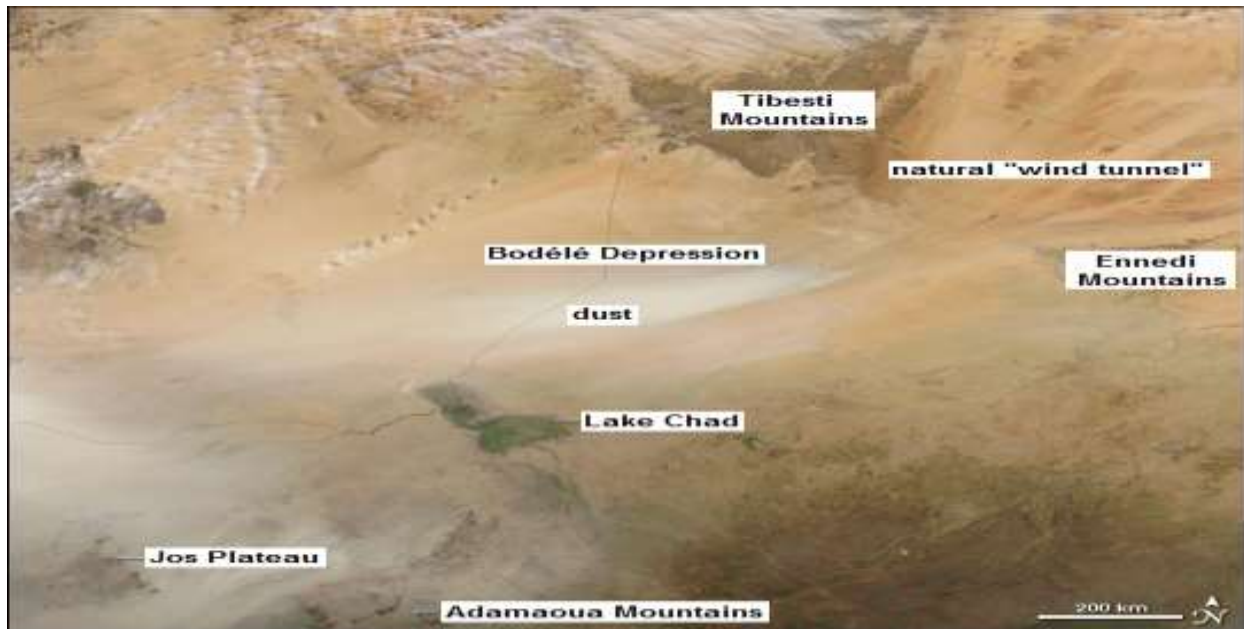


Fig.2: An imagery indicating the position of Bodele in red colour:



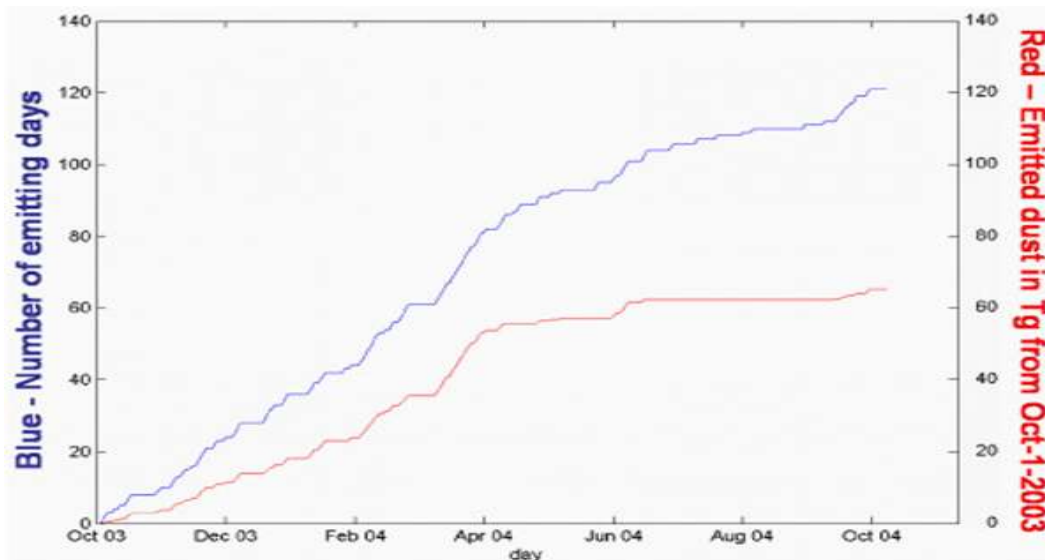
The Republic of Chad located at 15.4542° N, 18.7322° E is a large landlocked country in the heart of the Sahara desert region of Africa between the west and central regions of Africa. It has a total land area of 495,800 mi² (1,284,000 km²) and a population of just 14, 268, 344 people as at 2015. Standing in its northern part, is the rugged granite uplands of the Tibesti Mountains which has extinct volcanic peaks that reach an altitude of 11,204 feet (3,415 meters). The Ennedi and Wadai plateaus stands along the eastern border with Sudan which has peaks that reach 1,969 feet (600 meters) in between lies the Bodele depression which is an ancient lake bed with very rich nutrients made of marine sediments, geographically Bodele is located at 16°57'22.4"N 17°46'51.2"E.

Fig. 3: An imagery showing the geography of Bodele Depression and the Wind system from the NASA World Wind:



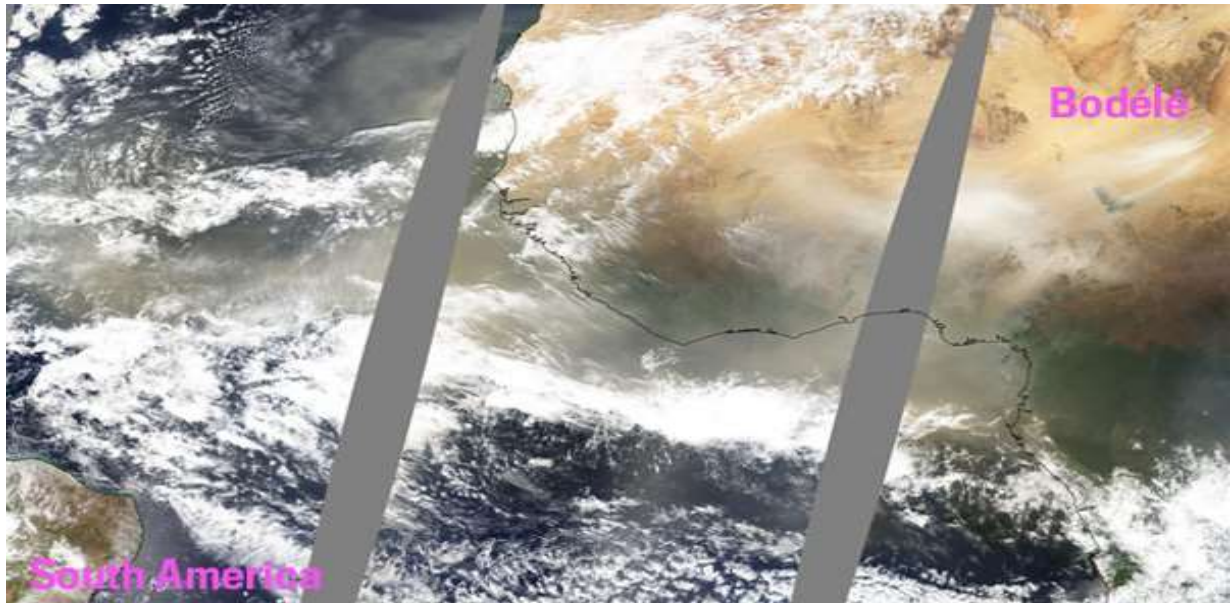
The World has wind systems that originates in one part of the World carrying surrounding dust particles with them from the place of origins graduating in to a strong wind referred to as the Jet streams travelling thousands of miles across very high altitudes in Space and end up depositing these particles in another part of the World through rain, snow falls and others. The same principles applies with the Bodele depression when Wind sweeps the dust between the Tibesti and the Ennedi Mountains in Northern Chad which is channel across the depression resulting in Dust storm graduating in to jet stream and subsequently getting settle on the Amazon rainforest of South America. The dry bowl that forms the depression is marked by a series of ephemeral lakes, many of which were last filled during wetter periods of the Holocene. Dust storms from the Bodélé occurs on an average of about 100 days per year. In accordance to the NASA's Terra and Aqua satellites, indicated that these storms moves across the Bodélé Depression at about 47 km/h (29 mi/h)—two times faster than previously believed. Diatoms from these fresh water lakes, once part of the Mega-Lake Chad, now make up the surface of the depression and are the source material for the dust, which, carried across the Atlantic Ocean and rains over the great Amazon rainforest which is also known as the Amazon Jungle in South America which has an Area of 5,500,000 km² (2,123,562 mi²).

Graph 1: A graph explaining the scenario:



The study shows that the dust emitted from the Bodélé amounted to more than 60 Tg (60 million metric tons) in the year spanning Oct 2003 to Oct 2004.

Fig. 16: A satellite imagery showing the magical Dust from the Bodélé Depression in Africa crossing to the Amazon rainforest in South America:



Dust from the Bodele depression contains fossilized fish apatite – a mineral rich in fertilizing phosphorus a nutrient essential for photosynthesis. This magical dust is made up decomposed fish and similar marine animals sediments, the Bodele dust is from the decomposed fish sediments that lived within the ancient Bodele lake which was once part of the Lake Mega-Chad, meaning that the present day Lake Chad of just 1800 km^2 in size in 2001 and now located at Coordinates 13°0'N 14°0'E with Surface area of 1,350 km^2 (520 mi^2) as at 2005, was once so big that it even included the Bodélé Depression forming part of its Seabed. But the Bodele portion of this Lake Mega-Chad dried up over the last 10,000 years to form the present day dry dusty lands of the Bodele made up very rich marine sediments and its located in the heart of a very dry and very unviable desert in Africa called the Sahara Desert ,but yet keeps fertilizing the very viable Amazon rainforest in South America with phosphorus from the biogenic sources (such as fish bone) which is more soluble than inorganic sources (such as in rock) for a very long time(thousands of years) resulting in the emergence of this mighty Amazon jungle.

Fig.3: Showing a sub-fossil skeleton of a 1.15 metre Nile Perch found in the Bodélé depression:

