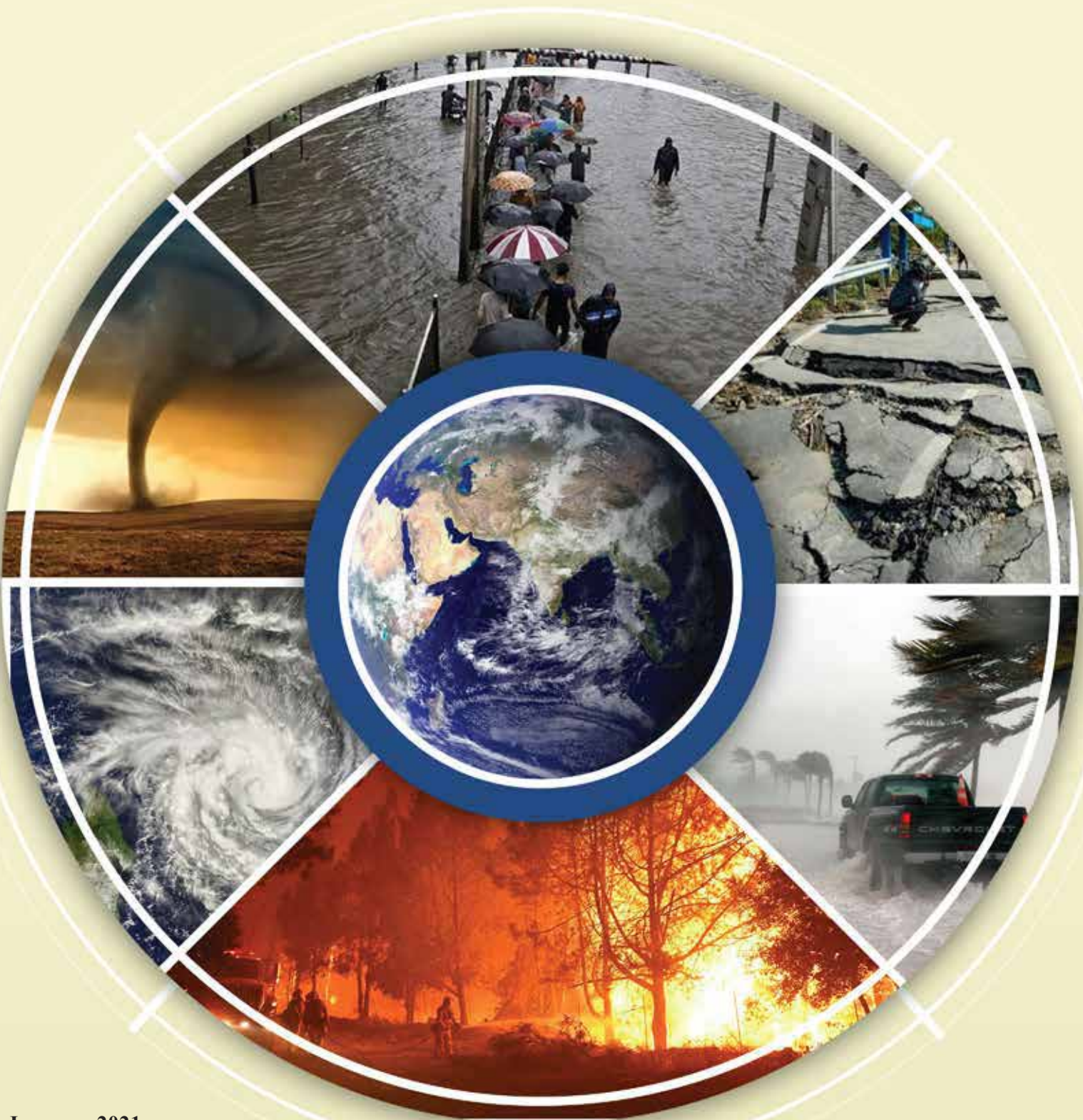




**J.B.BODA**

# **EARTH**



January, 2021





# Heavy Floods Hit East Coast of Malaysia

Streets are submerged in Kota Tinggi of south Malaysia's Johor state, Jan. 5, 2021.

Source: Xinhua

Significant heavy rains which began on 2 January 2021 caused by Northeast Monsoon winds hit the East Coast of Malaysia and caused flooding in five states in Peninsular Malaysia – Johor, Pahang, Kelantan, Selangor and Perak. The floods were the worst of the area in half a century.

Heavy rains forced thousands of people to flee their homes. Many roads were shut, including the main expressway that connects the east coast states.

The worst affected state was Pahang, where around 27,000 people were displaced according to the social welfare department.



**Severe damage to roads after flooding in Gua Musang district in southern Kelantan State | Source: Public Works Department, Malaysia**

## Floods in Malaysia

Flood is the most devastating natural disaster experienced in Malaysia. Throughout Malaysia, including Sabah and Sarawak, there is a total of 189 river basins (89 of the river basins are in peninsula Malaysia, 78 in Sabah and 22 in Sarawak), with the main channels flowing directly to the South China Sea and 85 of them are prone to recurrent flooding. The estimated area, vulnerable to flood disaster is approximately 29,800 km<sup>2</sup> or 9% of the total Malaysia area, and is affecting around 22% of the total population of the country.

Floods in Malaysia have been classified into two categories by the Malaysian Drainage and Irrigation Department, i.e. flash flood and monsoon floods. Based on the hydrological perspectives, the clear difference between these two disasters is the period taken by the river flow to recede to the normal level. Flash floods take only some hours to return to the normal water level, while monsoon flood can last for a month.

Figure 1 below shows the rainfall pattern in Malaysia and how is it influenced by the two monsoons: the southwest and northeast Monsoons. The location of Malaysia itself consists of West Malaysia (Peninsula Malaysia) and East Malaysia (Sabah and Sarawak) and they are divided by the South China Sea.





**Figure 1: Southwest and Northeast Monsoons in Malaysia**

Floods are prevalent during the north-east monsoon season. The east coast and southern states are especially vulnerable to flooding during this period.

In Malaysia, the earliest recorded major flood was back in 1886. The 1926 floods, known as “The storm forest flood” destroyed thousands of hectares of forests. Other major floods occurred in 1931, 1947, 1949, 1954, 1957, 1965, 1967, 1970, 1971, 1988, 1993, 1996, 2000, 2003, 2006, 2007, 2008, 2009, 2010, 2011, 2013, 2014, 2017 and 2018 (Floods in Pahang, Johor, Terengganu and Sarawak in Jan – Feb 2018, Flash Floods in Kuala Lumpur in Nov 2018).

**THE TABLE SHOWS SOME RECENT MAJOR FLOODS AND LOSSES CAUSED BY THEM**

Date / Year	Incidence	Property, Material, Crop or other losses (USD)
- 1971 Floods		- 60 Million
- December 1996	- Floods brought by Tropical Storm Greg in Keningau (Sabah State)	- Possibly large amounts of sediment-Erosion
- December 2006 & January 2007 #	- Floods in Johor State	- 454.6 Million. Insured Loss of around 30.4 Million
- 2008	- Floods in Johor State	- 21.19 Million
- 2010	- Floods in Kedah and Perlis	- 8.48 Million (Aid alone)
- December 2014 - January 15	- Heavy rains in the northeast monsoon.	- Ravaged 190,000 hectares of oil palm plantations. Estimated Losses of 560 Million.

In their efforts to control floods, the government got the flood maps developed; and as a result,

1. Flood Inundation Map
2. Flood Hazard Map
3. Flood Risk Map

were developed and, thus, helped better decision making and risk management.

## Impact of Floods

Most of the economic centers in Malaysia are located in low-lying terrain and near the coastline. As such, these economic centers are vulnerable to flooding and are therefore at high risk to significant structural damage and economic loss in the event of a major flood occurring.

During 1998 – 2018, 38 flood events occurred in Malaysia. Out of these, 20 were the riverine floods and 8 were the flash floods. These floods have affected over 770,000 people, killed 148 people, and caused USD 1.4 billion or roughly RM5.82 billion in damages.

High impact floods have become a virtually annual experience in Malaysia, yet flood insurance has remained a grossly neglected part of comprehensive integrated flood risk management.

The flood insurance claims during the 2006 – 2007 floods were USD 30.4 Million, just around 7% of the total economic losses. The reason for low insurance claims from floods may lie in the fact that flood insurance penetration rate in Malaysia was very low, only about 5%.

It was observed that the 2014 flooding in Kelantan affected over 13,000 SMEs, or almost 38% of all such businesses in the state, according to the Ministry of International Trade and Industry. In 2017, a similar incident in the area cost the state over RM30 million (USD 7.2 million) in damages.

A survey in 2019, observed that only around 15% of small and medium enterprises (SMEs) had flood insurance in Malaysia. Insurers hope SMEs take the right steps to protect their businesses in the event of flooding, which has become more prevalent in the country over the years.

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For more details email us at [earth@jbbodagroup.com](mailto:earth@jbbodagroup.com)  
Address: **J.B.Boda Insurance and Reinsurance Brokers Pvt. Ltd.**  
Maker Bhavan No. 1, Sir. Vithaldas Thackersey Marg, Mumbai 400 020, India

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