Q15

Describing the distribution of rubber producing countries, indicate the major environmental issues faced by them.

UPSC Civil Services Mains 2022 · GS I · 15 marks · World's Physical Geography

Salient features of world's physical geography.

Core demand of the question

- Describing the distribution of rubber producing countries, indicate the major environmental issues faced by them
- Map equatorial South-East Asia and other producers, then name forest, soil, and climate costs
- Keep a 15-mark length

Revision summary

Hevea rubber is an equatorial crop now centred on Thailand, Indonesia, and Vietnam.

Malaysia, India, China, and West Africa complete the main map; Amazonia is no longer the export core.

Plantation advance replaces rainforest with monoculture and fragments wildlife corridors.

Erosion, pesticides, mill waste, and carbon loss are the working environmental costs.

Climate change tightens the rain and disease window for the same belt.

Introduction

Natural rubber is an equatorial crop of Hevea brasiliensis, native to the Amazon and now grown mainly in South-East Asia. The map of producers is also a map of rainforest loss, monoculture, and chemical stress.

Body

Distribution of producing countries

- Thailand, Indonesia, and Vietnam are the leading Asian producers, with Malaysia still important though it has shifted some land to oil palm.
- India grows plantation rubber in Kerala's midlands and in parts of the north-east and Andaman belt, a smaller but regionally dense share.
- China has expanded in Yunnan and on Hainan, often at the climatic edge of the tree.
- West Africa, especially Côte d'Ivoire and others on the Guinea coast, is a growing African pole.
- Latin America, the plant's home, is a smaller exporter today because of South American leaf blight and later plantation geography.
- The belt is wet equatorial and monsoon margins, roughly within the tropics, because Hevea needs rain, heat, and a dry tap season that is not a true temperate winter.

Forest and biodiversity issues

• Conversion of lowland rainforest to rubber, especially in mainland South-East Asia and on Indonesian islands, cuts habitat for elephants, hornbills, and other forest species.

• Monoculture blocks are biological deserts compared with mixed dipterocarp forest, even when the crop is a tree.

• Expansion into montane and seasonal forests, as in parts of the Mekong uplands, fragments corridors and raises landslide risk on steep grades.

Soil, water, chemicals, and climate

• Clean-weeded slopes erode; laterite and poor tropical soils lose organic matter under repeated tapping landscapes.

• Pesticides, fertilisers, and mill effluent pollute streams that village fisheries still use.

• Smoke-houses and processing can add local air and water loads around factory towns.

• Climate change shifts the rain window and raises disease pressure, while producers also face the irony that rubber replaced forest that stored more carbon.

• **Labour and land conflicts sit beside ecology:** smallholders may over-tap, and concessions may ignore customary forest.

A fair close on distribution and harm

• The environmental issue is not the tree in a home garden; it is landscape-scale replacement of rainforest by one industrial species across the equatorial producing states.

Flow diagram

Hevea tropics -> Thailand Indonesia Vietnam

Hevea tropics -> India Kerala NE

Hevea tropics -> West Africa China

Thailand Indonesia Vietnam -> Rainforest loss

Rainforest loss -> Erosion chemicals carbon

Conclusion

Rubber production clusters in equatorial South-East Asia, with India, China, and West Africa as other nodes. Those countries face deforestation, monoculture, erosion, chemicals, and a tightening climate envelope; the map of latex is a map of tropical forest under pressure.

Facts & figures

Hevea brasiliensis

Amazon-origin tree that now dominates world natural-rubber supply.

Thailand and Indonesia

Leading producers in the South-East Asian equatorial belt.

Kerala rubber

India's classic plantation belt in the western monsoon midlands.

South American leaf blight

Disease that helped keep large Amazon plantations from matching Asian scale.

Oil palm substitution

In Malaysia and parts of Indonesia, a rival tree crop that also drives forest conversion.

Mekong upland expansion

Mainland South-East Asian push of rubber into seasonal and montane forest.