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## Vietnam's Natural Hazards - 1999 Flood

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# Vietnam's Natural Hazards – 1999 Flood

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## Introduction

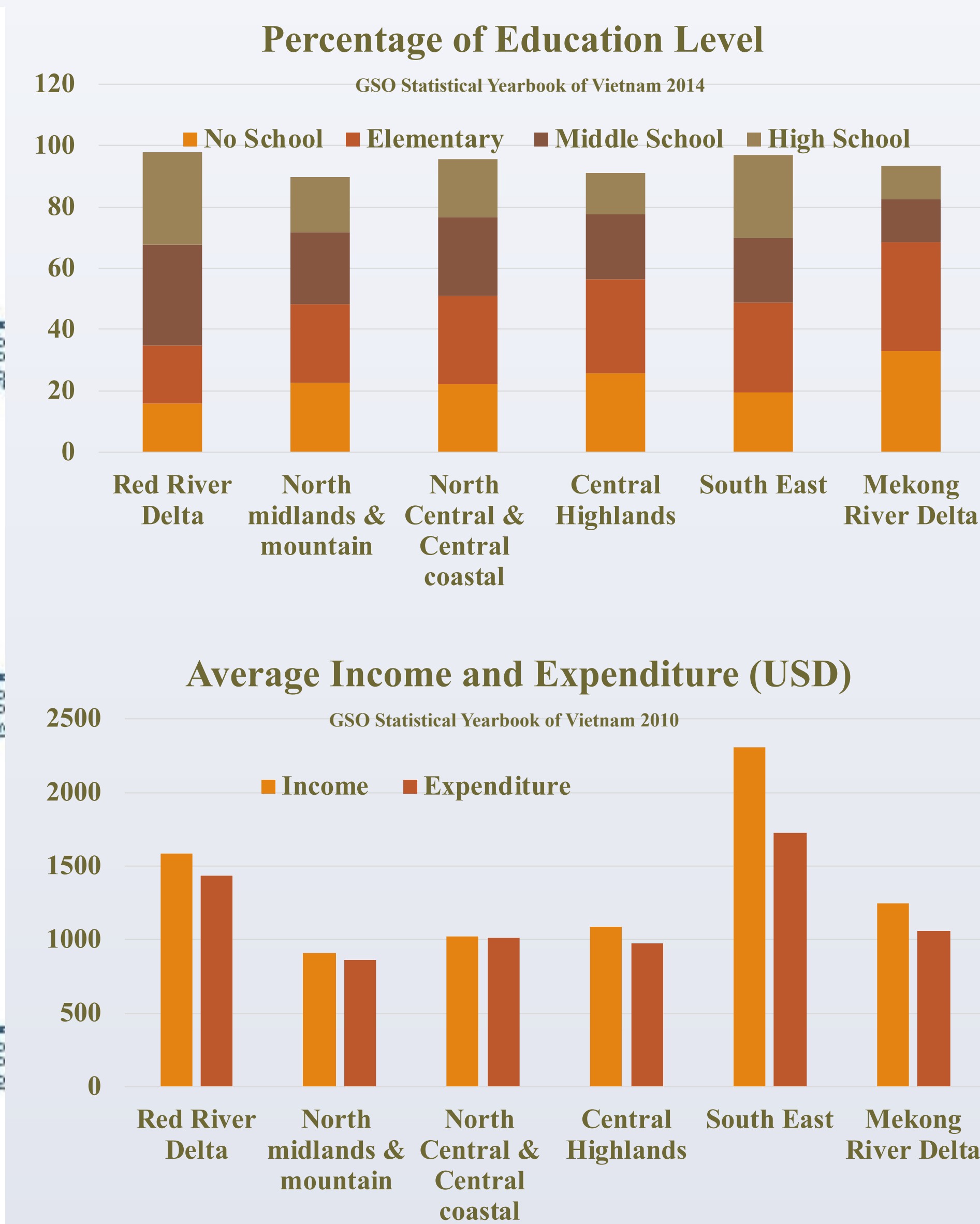
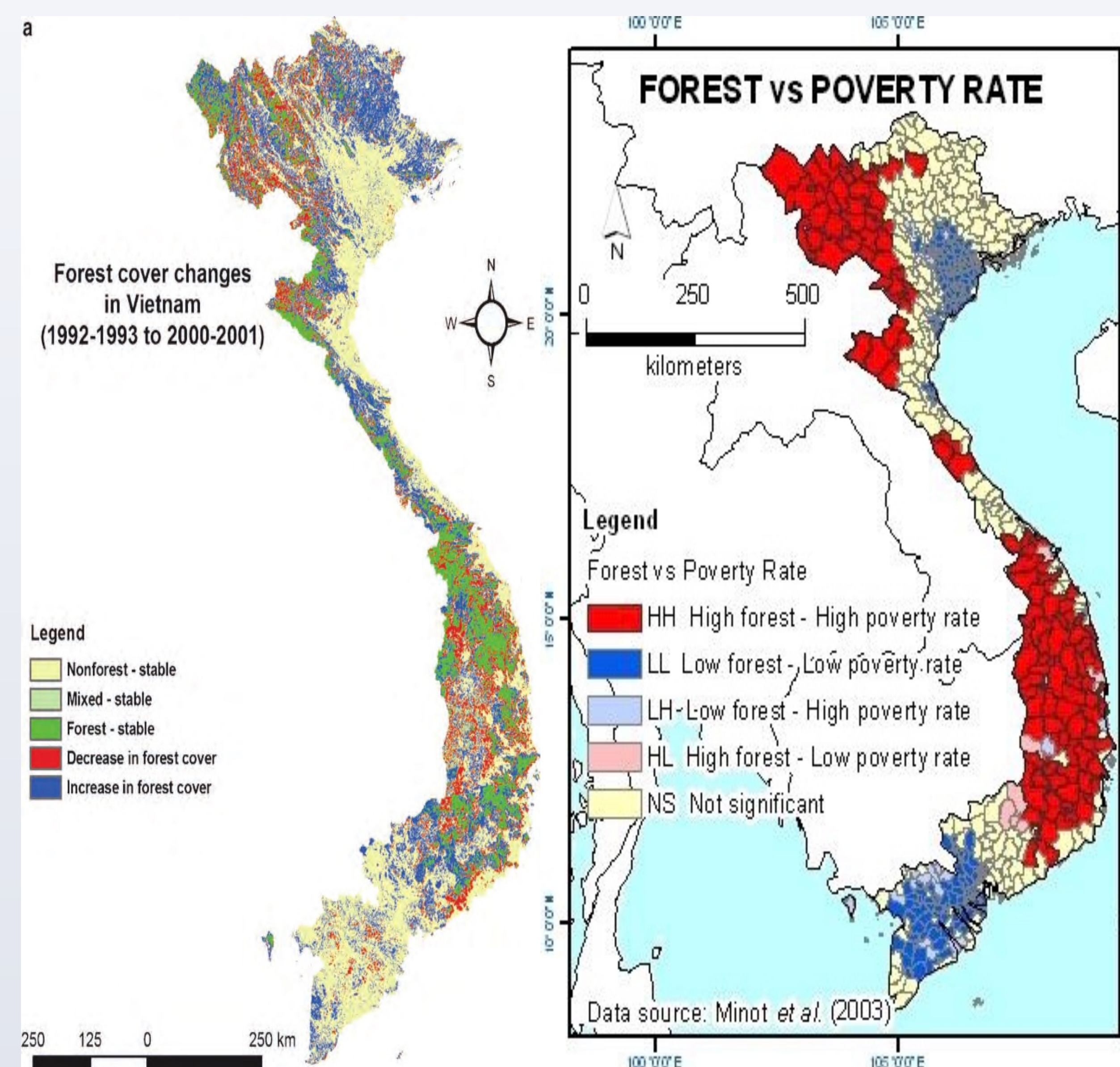
- Vietnam is one of the countries most affected by floods. The country experienced numerous floods, particularly in its central and southern regions. Located in Southeast Asia, bordered by China in the north, Laos and Cambodia in the west, and the South China Sea in the east, the country has 2,860 small and large rivers.
- Moreover, Vietnam is located at the end of the Red River in the north and the Mekong River in the south. All of these rivers carry an estimated 300 million tons of eroded mud per year, which is one of the reasons why Vietnam frequently experiences floods (ODM 2005).
- The central region of Vietnam is narrow, mountainous, and close to the coastline. Many rivers pass through the region, which had a total population of 7.5 million in 1999. These rivers originate in the western mountain range and flow into the South China Sea. Moreover, Vietnam is influenced by a monsoon type of climate; thus, these regions receive heavy rainfall during the summer.

## Methodology

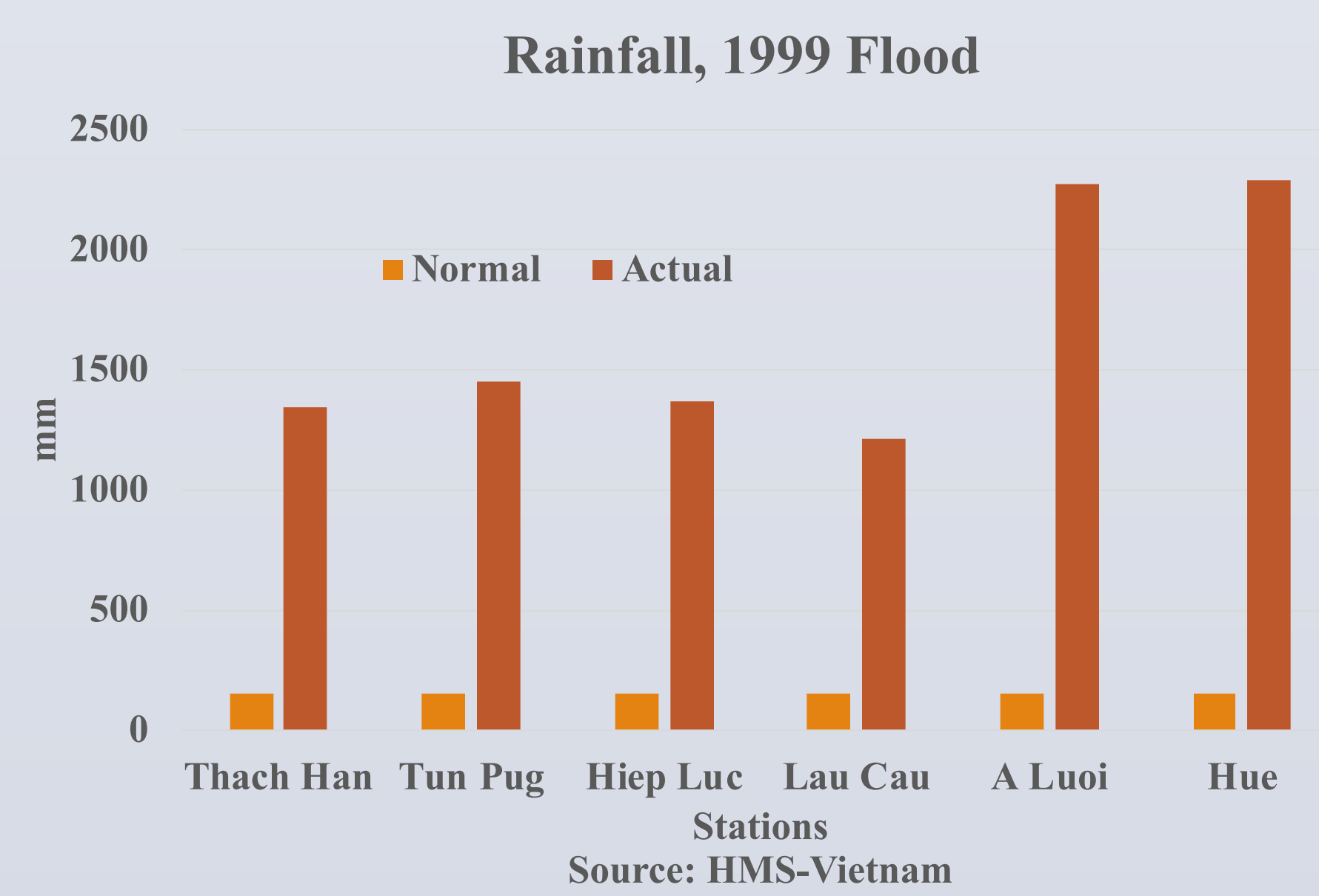
- Collecting the general information from public articles, books, and magazines to make a big frame background and understand the topic.
- Collecting demographic and data from the General Statistics Office of Vietnam.



## Results



## 1999 Flood



- From 1-6 of November, this region received 23.6 to 39.4 inches (600 to 1000 mm) of rainfall in a short time period.
- In Hue City, the average rainfall reached over 51 inches (1,300 mm), the highest level in the city since 1886 (ADPC 2003).
- On December 8, 1999, additional flooding caused by heavy rainfall from December 1-6 once again attained historical levels in some rivers in the Central provinces from Thua Thien Hue to Khanh Hoa.
- Rainfall average reached 78.7 inches (2,000 mm) and caused destructive inundation (UN OCHA 1999).

Human activities increase the impacts of disasters:

- Changes in land use and narrowing of the forest zone increases vulnerability with decreased surface protection.
- Diminishing household income and education level with the high poverty rate.
- Lack of support from government, construction skills, and investment all reduce resiliency.

Houses destroyed	41,846
Houses damaged	870,000
Classrooms destroyed and damaged	94,000
Clinics flooded and damaged	510
Rice fields flooded and damaged	66,308 ha
Other crops	30,700 ha
Bridges destroyed	1,470
Shrimp and fish farms destroyed	3,117ha
Boats and ships damaged and sunk	1,162
Estimated total economic loss	US\$ 488 million

## 1999 Flood (Cont.)

- In response, the strategy of the Vietnamese Government on disaster management for central Vietnam is:
  - To promote flood and storm prevention measures with the policy of pro-active prevention, mitigation, and adaptation.
  - Management and mitigation measures include construction of upstream reservoirs and dykes in the plain areas.
  - Combining such infrastructure with irrigation systems for stabilizing and enhancing agricultural production.
  - The government could take more proactive role to prepare for and reduce death, loss, and vulnerability.

## Conclusion

- Vietnam is subject to several natural hazards which are dangerous to the human life, property, the economy, and the environment. This creates many concerns, including health, water quality, housing, and environmental change.
- Human activities increase the impacts of natural disasters. The changes in land use and economic activities are causing deforestation; the related soil erosion increases the vulnerability of the country to hazards like floods and landslides.
- The education level, housing structure, household income, and lack of the effective policies from the government increase the hazard impacts and fail to provide resiliency.

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