

# AMAZON RAINFOREST

- An area of tropical rainforest
- 750% of remaining rainforests on Earth
- Cattle sector = 80% of deforestation
  - 1995: 70% of formerly forested land = cattle ranching
    - ~ 91% deforested since 1970
- Other = small - scale subsistence farming / mechanised cropland
- Slash & Burn
  - small area of land cleared, vegetation burned
  - nutrients turn ash
  - soil = fertile for a few years
  - when depleted, move on to another part
  - area regenerates
  - no lasting damage = sustainable
- Norwegian gov. donated \$1 bn to Amazon fund in 2008
- Sep 2015: president Dilma Rousseff told UN Brazil had reduced rate of deforestation by 82%
- Restoration: aim to restore + reforest 120,000 km<sup>2</sup> by 2030
- National Parks

# CASE STUDY: COASTAL MANAGEMENT IN HOLDERNESS

- The opportunities presented by an area of coastline, the hazards associated ~~but~~ with it and their management
  - Location: North-East of England
  - One of the world's most vulnerable coastlines: retreat at a rate of 1~2m per year
    - Strong prevailing winds = longshore drift = material moves south
    - Cliffs are made of a soft boulder clay = erodes quickly
  - Threatens the village of Mappleton (approx. 50 properties)
  - 1991: coastal management scheme costing £2 mil introduced
    - Rock armour built along the base of the cliff
    - Two rock groynes
- ↳ Mappleton and the cliff no longer at risk from erosion
- ↳ Rock groynes have stopped beach material from being moved south of Mappleton

# CASE STUDY: THE GREAT BARRIER REEF

- A coral reef
- Formed 13,000 years ago, when the sea level = 61m
- Requirements:
  - Sunlight
  - No pollution
  - Temp: 23°C - 25°C
  - Tropical areas
- World Heritage Area since 1981
- Employs 6% of the workforce of Australia
- 12% of Australia's export
  - ↳ Nearly A\$5bn generated from tourism annually.
- Covers an area of 344,400 km<sup>2</sup> (2900 indiv. reefs, 900 islands)
- 30 species of whales, dolphins, and porpoises, 5000 species of mollusk, 1500 species of fish

# CASE STUDY: MISSISSIPPI RIVER

- Opportunities presented by a river, the hazards associated with it and their management

## Opportunities:

- Fertile soil for farming corn, rice, and sweet potato
- Water for irrigation
- Transport = trade routes, ports (economic opp.)
- Flat land for building houses, roads, and railways (e.g. New Orleans and Baton Rouge)
- Source of fish - aquaculture (famous for shrimp)

## Hazards:

- Farmland can be flooded
- Stores off of food could be damaged by floods
- Foundations of homes unstable
- Bridges needed = large investments of time + money needed (Horace Wilkinson Bridge)
- Insurance companies may refuse to insure homes (e.g. in Morgan City)
- Poor market value

# CASE STUDY: MOUNT ST HELENS

- A volcano

Stratovolcano

Erupted 18<sup>th</sup> May 1980

Plates: Juan de Fuca subducted by. N. American Plate

Environmental Effects:

- Removed 396m of the summit, leaving a massive crater
- Contaminated Toutle River
- Filled in Spirit Lake

Social Effects:

- 57 deaths due to asphyxiation, burns, trauma

Economic Effects:

- \$449.80 mil on restoring forestry
- \$ 363.90 mil spent on clean-up
- \$ 969.80 mil in total

# SAHEL REGION

- An area of hot desert

## Geopolitics:

### 2012 Drought:

- Crop Failure & Mass famine
  - FAO: agricultural production dropped by 25% from 2010
  - Mauritania: 52% crop production drop
  - Chad: 50% crop production fall
  - 2012: grain harvest down by ~1.4 mil tons
  - 15 mil malnourished in W. Africa & Sahel Region
  - Malnutrition exceeded threshold levels of 15%
- Econ. productivity
  - Food prices increase
  - Fewer workers

] vicious cycle
- Responses
  - Feb. 2012: UN convened emergency meeting
    - ↳ Appealed for \$725m
    - ↳ Only 20% raised by March
  - Mar. 2012: Oxfam launched \$36.3m emergency appeal
  - UNHCR appealed for \$36.5m to help avg. ~1500 arriving in Mauritania daily
  - Cloud seeding in Burkina Faso (start 1998)
  - AMETD/AMETSOC monitors droughts
  - 2012: FAO Dryland Restoration Initiative

# CASE STUDY: THE GREAT HANSHIN EARTHQUAKE

## An earthquake

17<sup>th</sup> January 1995

Magnitude: 6.9

Ground move 18cm horizontally, 12cm vertically

Plates: Philippines plate subducted by Eurasian plate at the Nojima Fault

### Environmental Effects:

- 300 fires
- 716 reported aftershocks
- ~~Liquefaction~~ of soil = subsidence of artificial islands (e.g. Rokkō Island)

### Social Effects:

- 400,000 buildings irreparably damaged
- 120/150 quays in the port of Kobe damaged
- 70% of Osaka-Kobe railway tracks out of operation
- Daikai Station on Kobe Rapid Railway line collapsed
  - ↳ brought down part of National Route 28

### Economic Effects:

- Mitsubishi + Panasonic forced to close
- \$120bn in damage
- 2.5% of Japan's GDP