

Pearson Edexcel Level 3 GCE

Tuesday 14 May 2019

Afternoon (Time: 1 hour 45 minutes)

Paper Reference **8GE0/01**

Geography

Advanced Subsidiary

Paper 1: Dynamic Landscape

Resource Booklet

Do not return this Resource Booklet with the question paper.

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SECTION A

The following resources relate to Question 1.

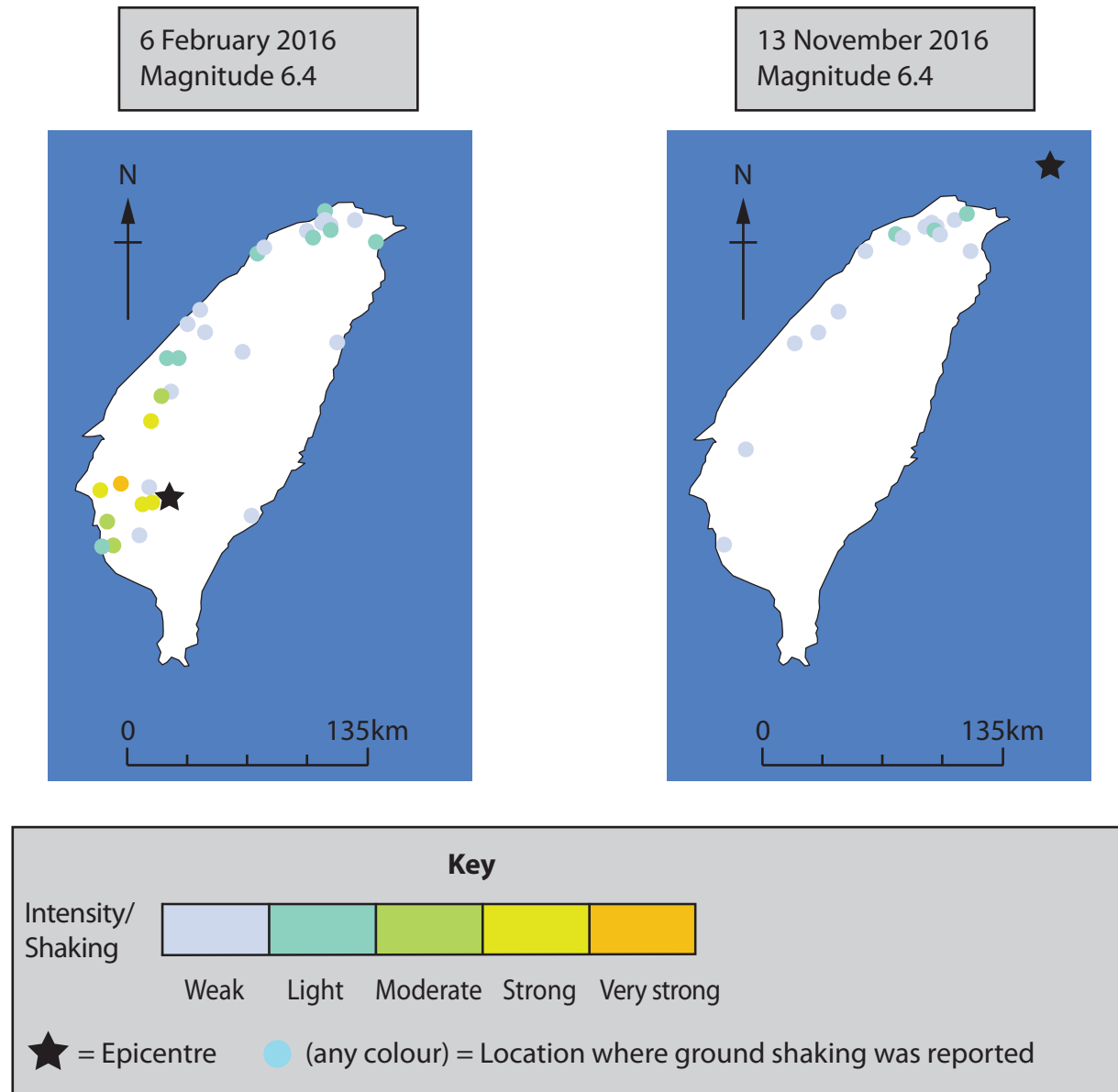
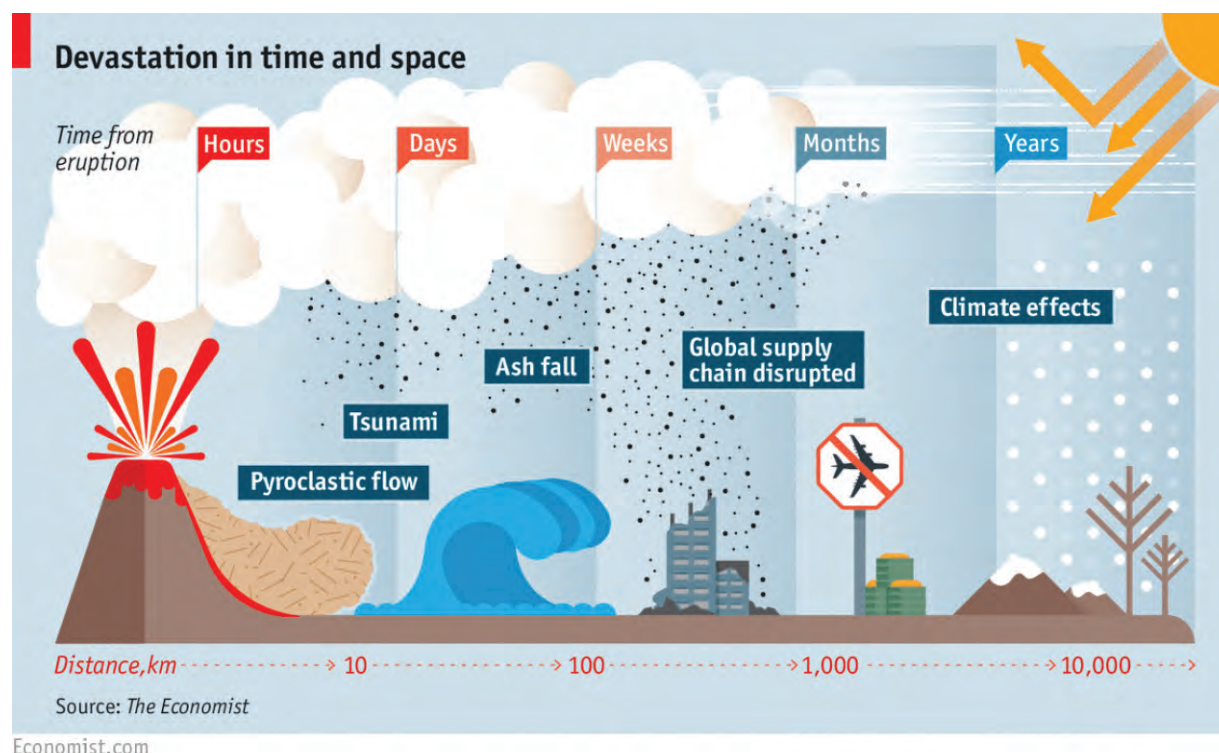


Figure 1a

Reported ground shaking after two earthquakes in Taiwan in the Pacific Ocean



Mount Tambora, Indonesia 1815 (VEI 7)

- Tsunami wave travelled 500 km
- Global temperatures reduced by 1–2 °C
- 60,000–120,000 estimated deaths from effects of the eruption

Mount Pinatubo, Philippines 1991 (VEI 6)

- 300–800 deaths and 96,000 hectares of land damaged by ash fall
- \$250m of damage to farmland and forestry due to pyroclastic flows
- 0 deaths from climate effects of 0.5 °C temperature reduction

Eyjafjallajökull, Iceland 2010 (VEI 4)

- 100,000 flight cancellations affected international trade and tourism
- Airline losses of >\$1.4bn
- Kenyan economy losses of > \$3.8m as flowers and vegetables could not be exported by air

Soufrière Hills, Montserrat 1997 (VEI 4)

- 19 deaths by pyroclastic flows
- Capital city, Plymouth, destroyed by lava flows and ash
- 60% of the island's residents left for nearby islands or UK

Figure 1b

**A simplified interpretation of the areal extent of volcanic eruptions,
and actual data on 4 volcanic disasters**

SECTION B

The following resources relate to Questions 2–4.



Figure 2b

An avalanche in the French Alps

The following resources relate to Question 4.

Figure 4: Information about the Swiss Alps, Europe

- The Swiss Alps are fold-mountains formed by uplift along a collision plate boundary separating the European and Adriatic plates. There are 500–800 earthquakes a year, but most are too small to be reported.
- The Swiss Alps are a multi-use location. A number of glaciated valleys have hydro-electric power (HEP) dams and reservoirs. Tourism, especially skiing, is highly important economically and dependent on a modern transport infrastructure.
- The high Alpine environment is still glaciated after the main advance of 18,000 years ago, which left a dramatic landscape dominated by 63 glaciers, most of which are retreating.
- The environment is very dynamic with both tectonic activity and climate change contributing to mudflows, glacial retreat and an increase in the number of avalanches, all of which threaten the tourist industry.

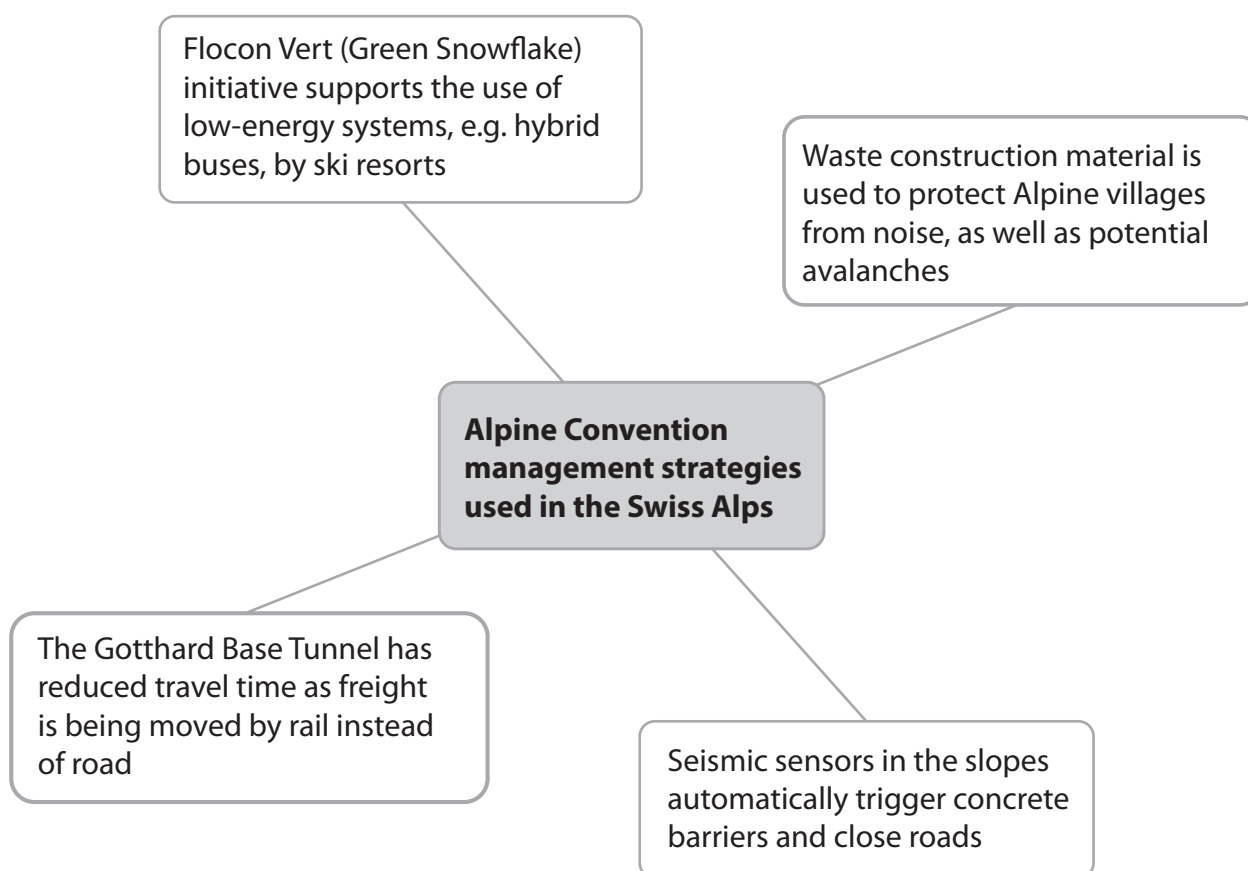


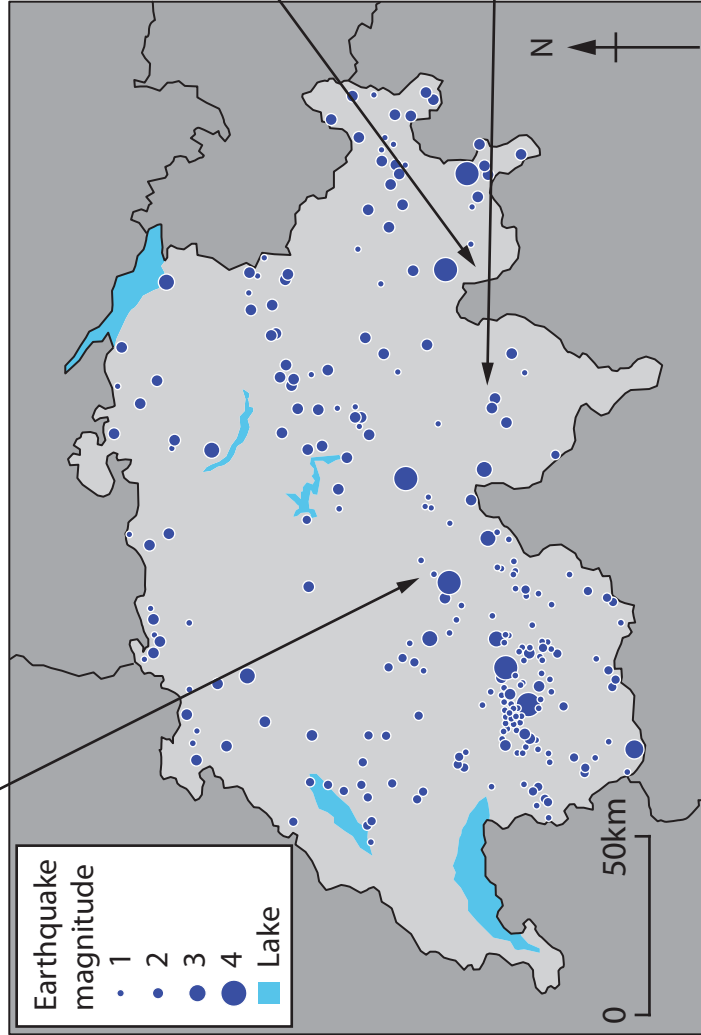
Figure 4a

Management strategies used in the Swiss Alps



First Cliff Walk in Grindelwald

- A unique, scenic attraction that helps tourists appreciate the valleys and waterfalls of the Alps.
- Cliff walks help connect Swiss Alpine villages on remote mountain sides.
- Locals are concerned that the landscape, used to inspire many films, now features a Chinese buffet restaurant.



Bondo village mudflow

- In 2017, mudflows swept 8 people away.
- Melting ice is causing glacial lakes to overflow.
- Melting snow and ice fields threaten the tourist industry.
- 120 million people visit Switzerland annually.



The Gotthard Base Tunnel

- CO₂ emissions from road freight and passenger transport caused air pollution.
- World's deepest tunnel opened in 2016 to reduce this.
- Steel and reinforced concrete used to protect workers and safeguard the tunnel from seismic movement.



Figure 4b
Threats to Swiss Alpine landscapes

SECTION C

The following resources relate to Questions 5–7.



Figure 5b

Recent cliff collapse on the South East coastline of the United Kingdom

The following resources relate to Question 7.

Figure 7: Information about Aqaba, Jordan, Middle East.

- The Gulf of Aqaba is at the northern end of the Dead Sea Transform fault, part of an active constructive plate boundary separating the Arabian and African plates.
- Plate movement formed a coastal plain and a basin now filled by warm sea water, an ideal habitat for coral reefs.
- Aqaba is a small coastal city ideally located for trade and more recently tourism. Its special economic zone (SEZ) offers tax-incentives to encourage tourist resorts and dive centres, as well as container ports.
- This is a dynamic coastal landscape. Earthquakes create landslides in the surrounding mountains and coastal flooding is also a hazard. The 1995 Aqaba earthquake killed 8 people and injured 30.

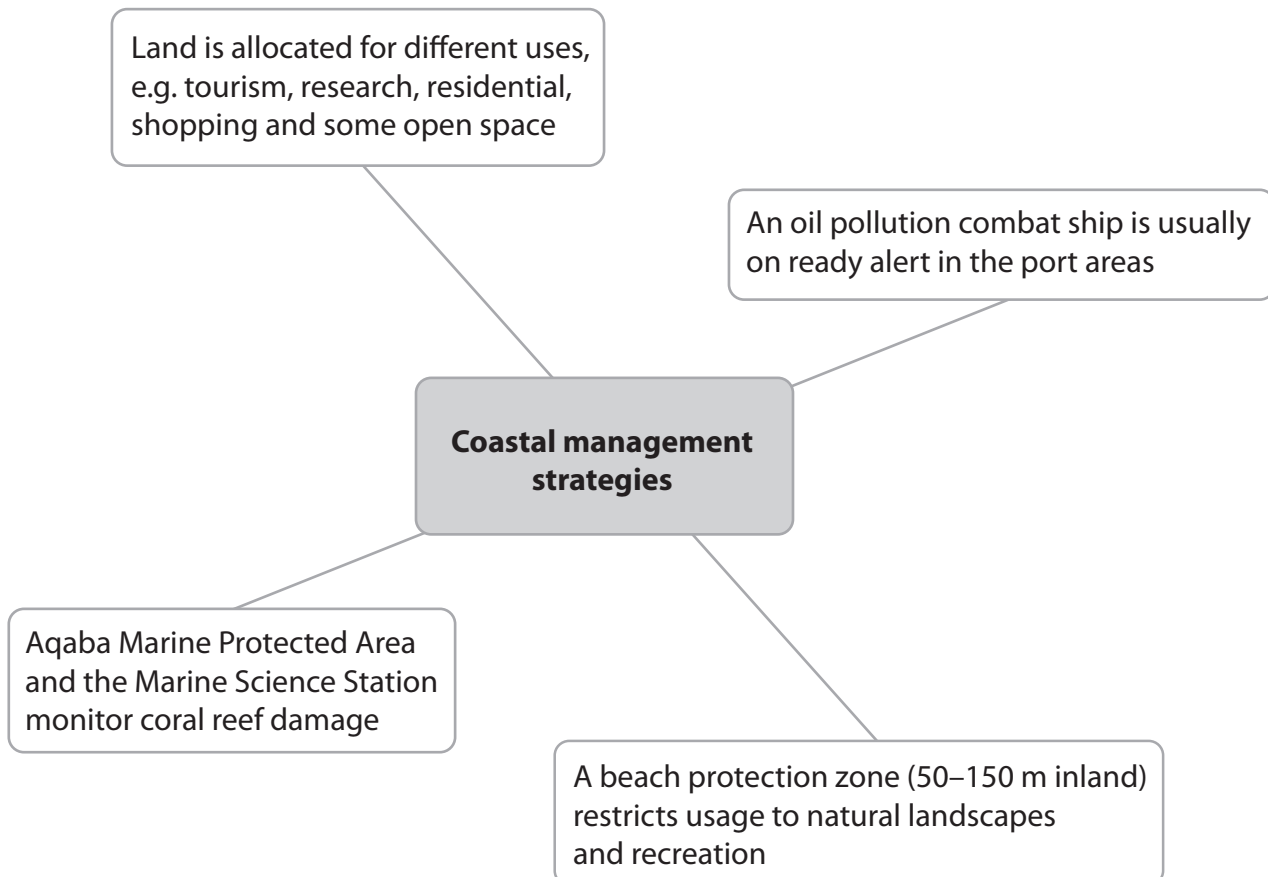
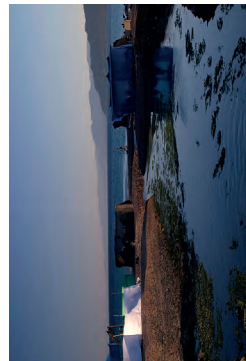


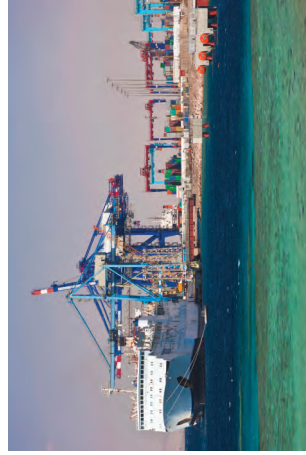
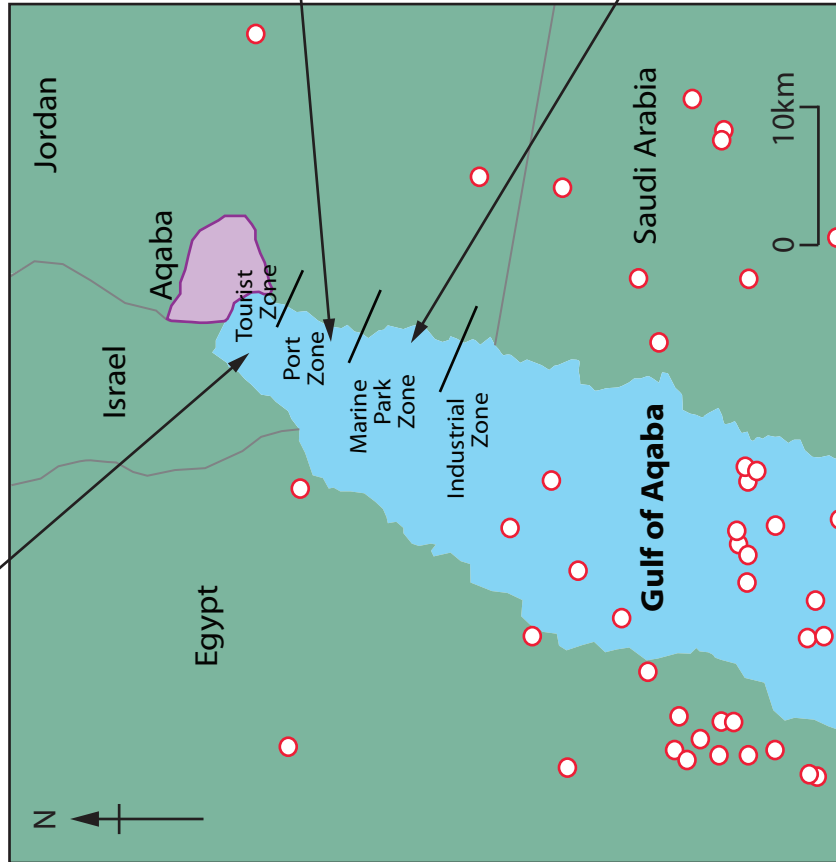
Figure 7a

Management strategies used in Aqaba



Tourist zone

- 500,000 visitors a year visit Aqaba.
- More tourist resorts are planned creating 500 jobs in luxury hotels.
- Wastewater from resorts is sometimes dumped into the Gulf of Aqaba.
- 30–50% of the coastline has been dredged and excavated for shoreline construction.



Port zone and industrial zone

- More than 2,300 ships unload 3.5 m tonnes of oil every year, as well as phosphate and fertilisers.
- 20,000 m³ of chlorinated cooling water is released every hour into deeper water.
- Occasional landslides in the mountains cut off access between the coastal plain and other infrastructure.



Marine park zone

- Hotels and dive centres have private beaches to facilitate 30,000 dives a year and trips on 55 glass-bottom boats.
- Coral reefs are being damaged by industrial pollution and tourist use.
- Coastal flooding occasionally causes damage to beach resorts.

Key:

- = Earthquake epicentre
- State border
- Aqaba SEZ (Special economic zone)

Figure 7b

Changing coastal landscapes in Gulf of Aqaba



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