Pearson Edexcel Level 3 GCE

Tuesday 12 May 2020

Afternoon (Time: 1 hour 45 minutes) | Paper Reference **8GE0/01**

Geography

Advanced Subsidiary

Paper 1: Dynamic Landscapes

Resource Booklet

Do not return this Resource Booklet with the question paper.

Turn over ▶

P62364A

1/1/1/1/1/1/1

P 6 2 3 6 4 A

Pearson

SECTION A

The following resource relates to Question 1.

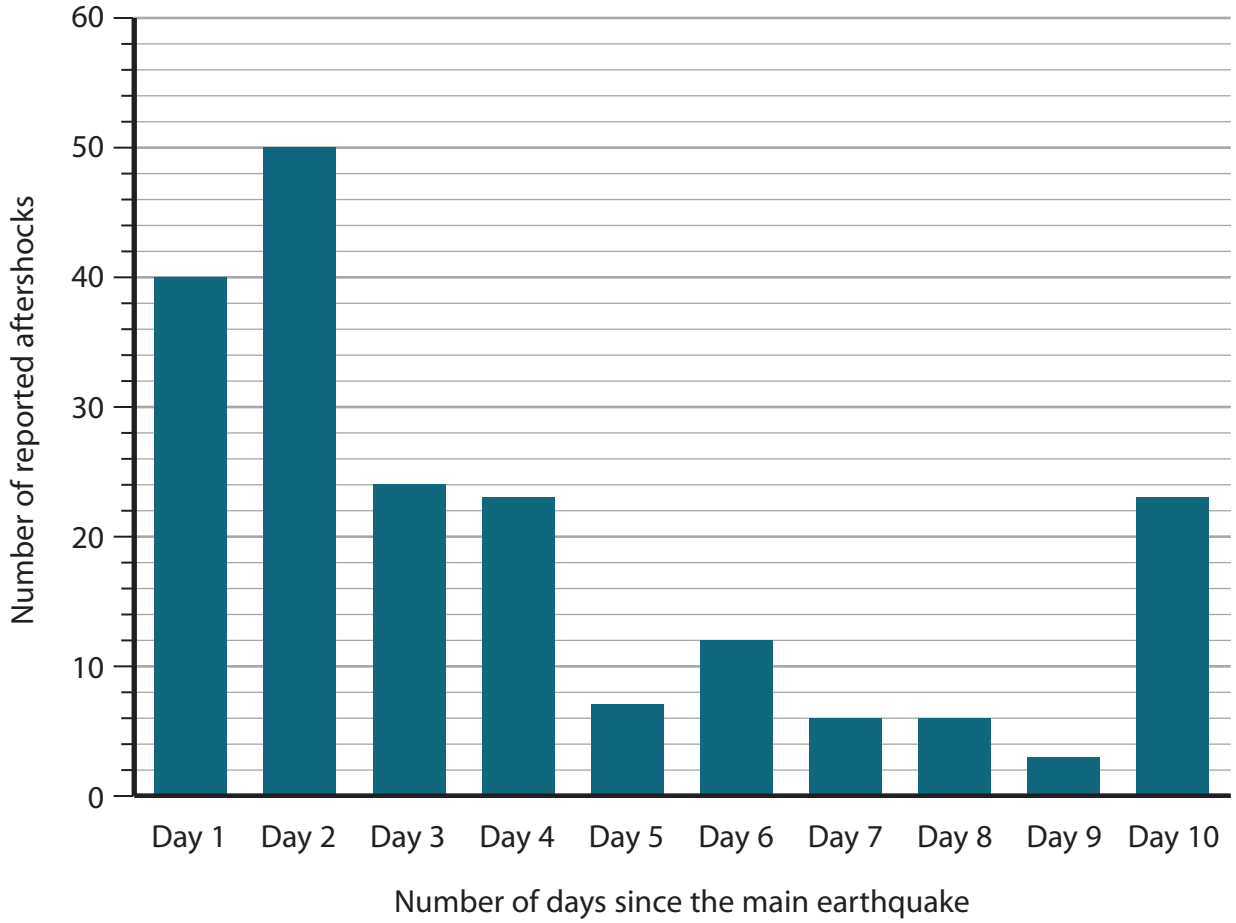


Figure 1

Aftershocks reported after the February 2018 earthquake in Papua New Guinea

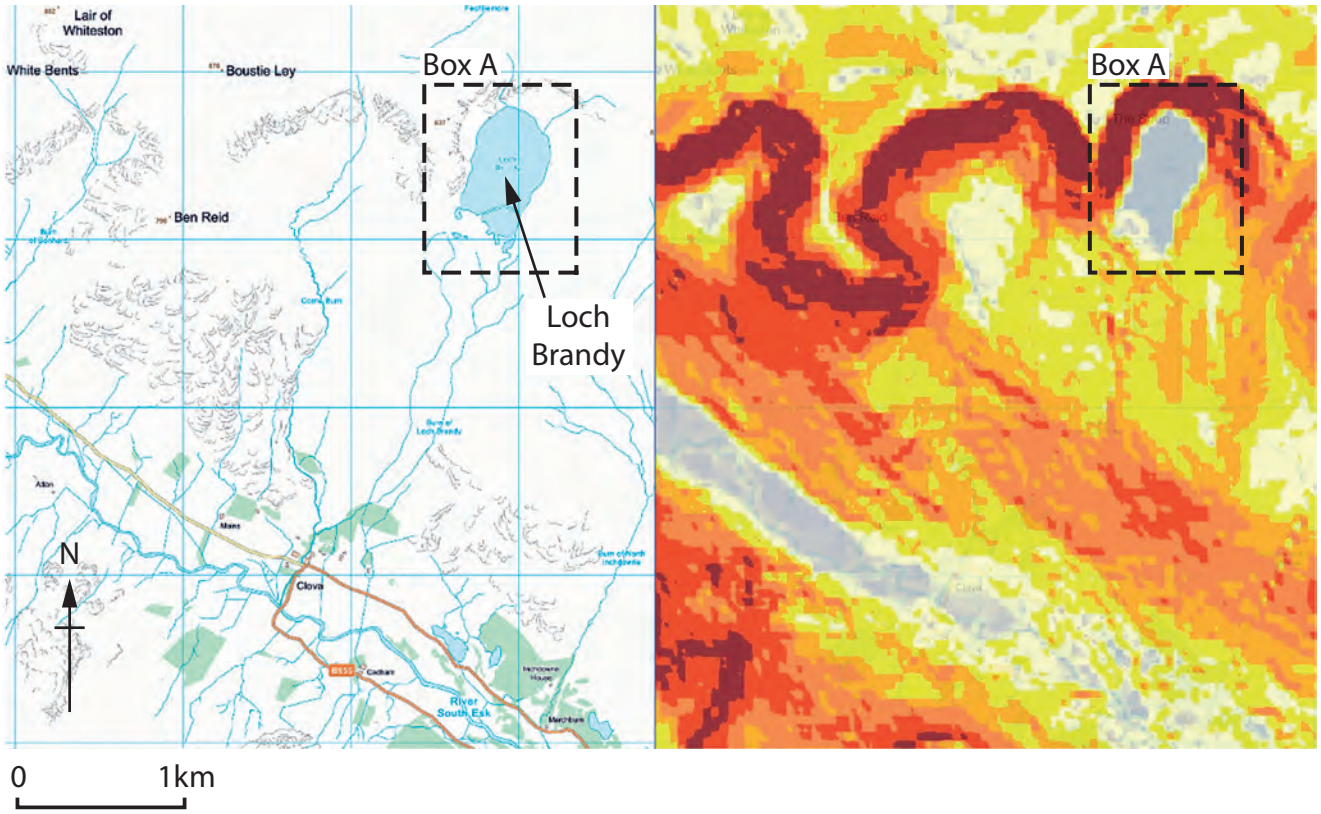
SECTION B

The following resources relate to Questions 2–4.

Degrees of freedom	0.20	0.10	0.05	0.02	0.01	0.001
18	1.330	1.734	2.101	2.552	2.878	3.922

Figure 2b

Significance table for t-test



Key		Slope angle	
	Roads		Extremely high / steep 31–90°
	Rivers / Streams / Lakes		21–30°
	Craggy rock areas		16–20°
	Study area		11–15°
			6–10°
			Extremely low / gentle 1–5°
			Flat or water level 0°

Figure 3

Geographic Information System (GIS) maps showing slope angle around Glen Clova valley, Cairngorms National Park, Scotland

The following resources relate to Question 4.

- Volcan Villarrica is a composite volcano near a destructive plate boundary between the Nazca and South American plates. It is one of the most active volcanoes in the world.
- The volcano is covered by 40 km^2 of glaciers, however these are shrinking. 25% of the surface area was lost between 1961 and 2003.
- The volcano erupted in 1971. Poisonous gases and lahars flowed down river valleys towards the nearby towns of Molco and El Turbio. 12 people were killed. Another eruption began in 2015.
- Chile's Gross Domestic Product (GDP) per capita in 2017 was US$24,643. The volcano is situated in Villarrica National Park, popular with winter skiers, summer hikers and for the geothermal springs in nearby towns. The park authorities are responsible for the management of hazard risks.

Figure 4a

Information about Volcan Villarrica in the Andes, Chile, South America

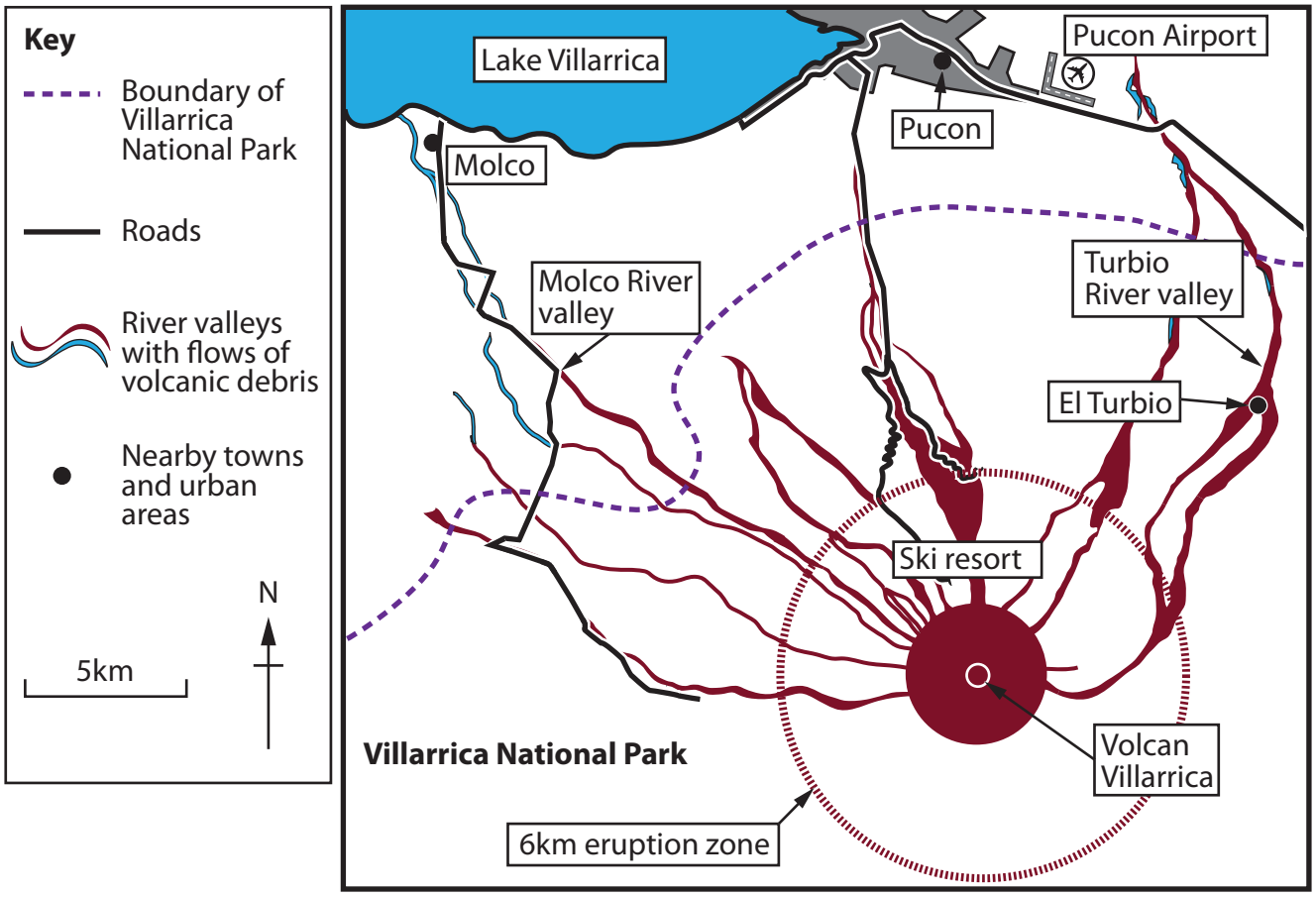


Figure 4b

Villarrica National Park showing nearby towns and major threats

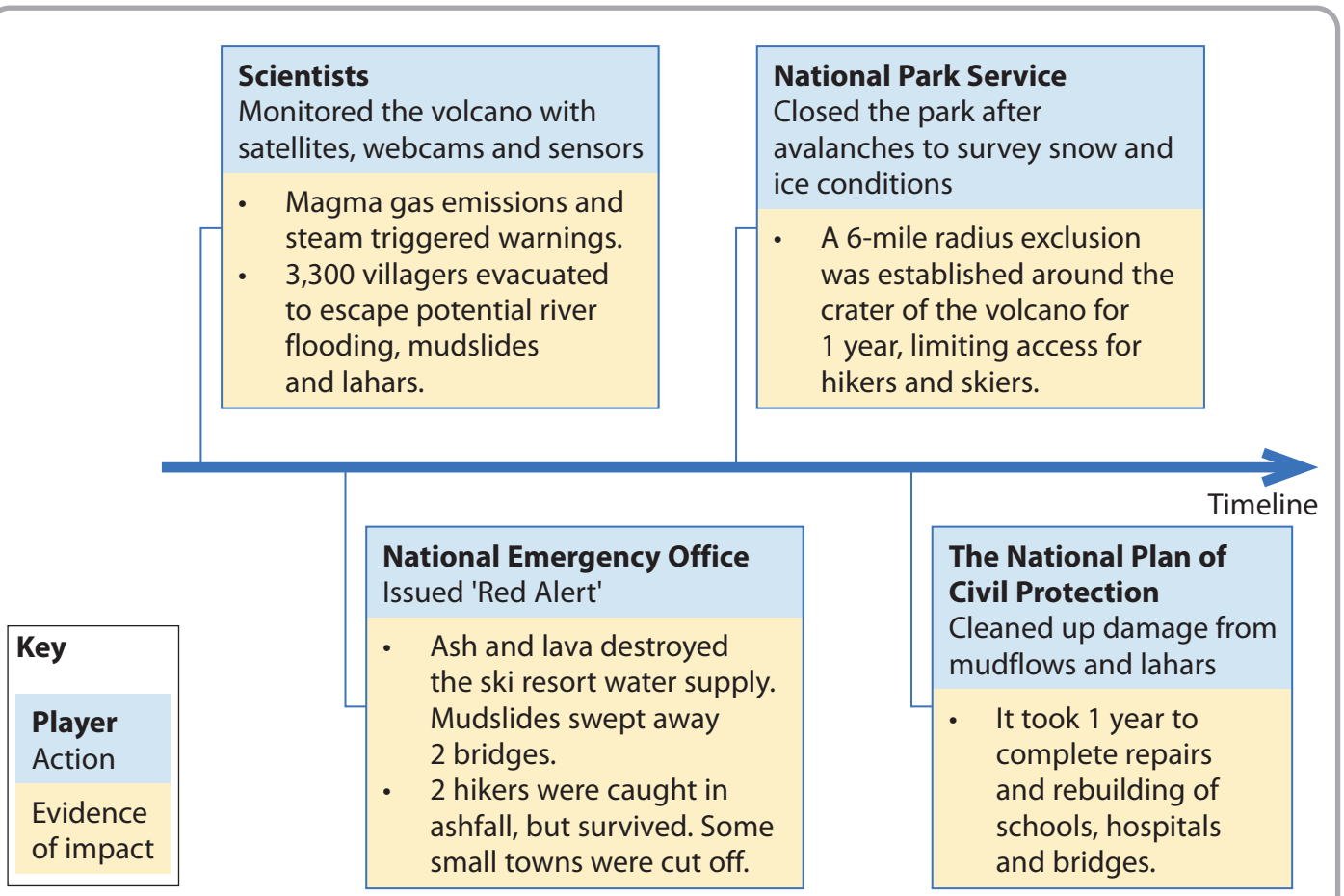


Figure 4c

Hazard responses during the 2015 eruption of Volcan Villarrica

Ski resort infrastructure on the sides of Mt Villarrica.

100 m wide snow avalanches in 2010 seriously injured 1 tourist.

15 people were killed by asphyxiation in 1971. Mudflows here killed 100 people over the 20th century.

Evacuation of tourists from Pucon during an eruption of Mt Villarrica in 2017.

Ash layers on top of glaciers on Mt Villarrica.

Ash absorbs sunlight, increasing ablation.

Figure 4d

Three scenes from Mt Villarrica

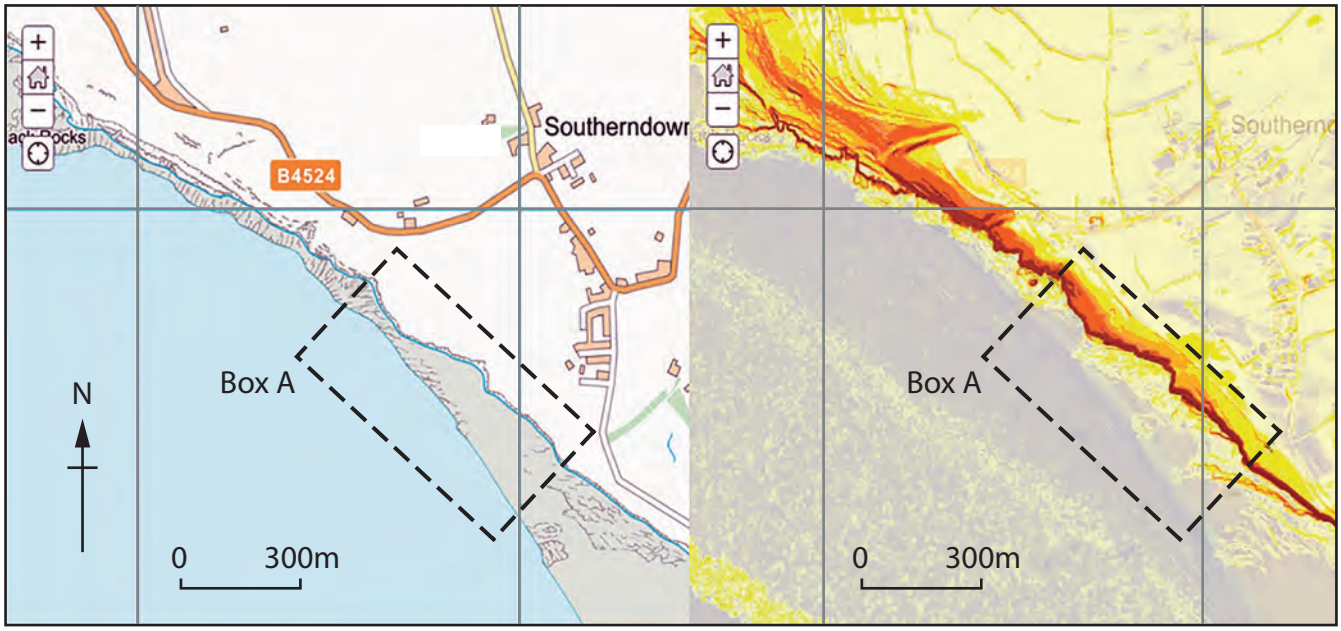
SECTION C

The following resources relate to Questions 5–7.

Degrees of freedom	0.20	0.10	0.05	0.02	0.01	0.001
18	1.330	1.734	2.101	2.552	2.878	3.922

Figure 5b

Significance table for t-test



Key		Slope angle	
	Roads		Extremely high / steep 31–90°
	Rivers / Streams / Lakes		21–30°
	Craggy rock areas		16–20°
	Study area		11–15°
			6–10°
			Extremely low / gentle 1–5°
			Flat or water level 0°

Figure 6

Geographic Information System (GIS) maps showing slope angle around Southerndown, Glamorgan Heritage Coast, Wales

The following resources relate to Question 7.

- Bali is known for its beautiful beaches, surrounded by coral reefs. Most coastal resorts are near the capital city, Denpasar. There are many coastal and hill villages scattered all over the island, all with temples.
- Bali is on a destructive plate boundary, with two major composite volcanoes, Mt Batur and Mt Agung. In 1963, Mt Agung erupted (VEI5), triggering pyroclastic flows and lahars, killing 15,000 people in surrounding villages. Mt Agung erupted periodically during 2017–2019 and both volcanoes are predicted to erupt within the next 100 years.
- Tropical storms, earthquakes, landslides and tsunamis are other threats facing the island, as well as long-term erosion of sediment from beaches.
- Indonesia is an emerging economy, with a Gross Domestic Product (GDP) per capita of US$3,846 in 2017. There is no integrated coastal zone management strategy in Bali and hazard management is focused on tourist areas. Many rural villages have no disaster risk mapping or community awareness drills.

Figure 7a

Information about Bali, a volcanic island in Indonesia

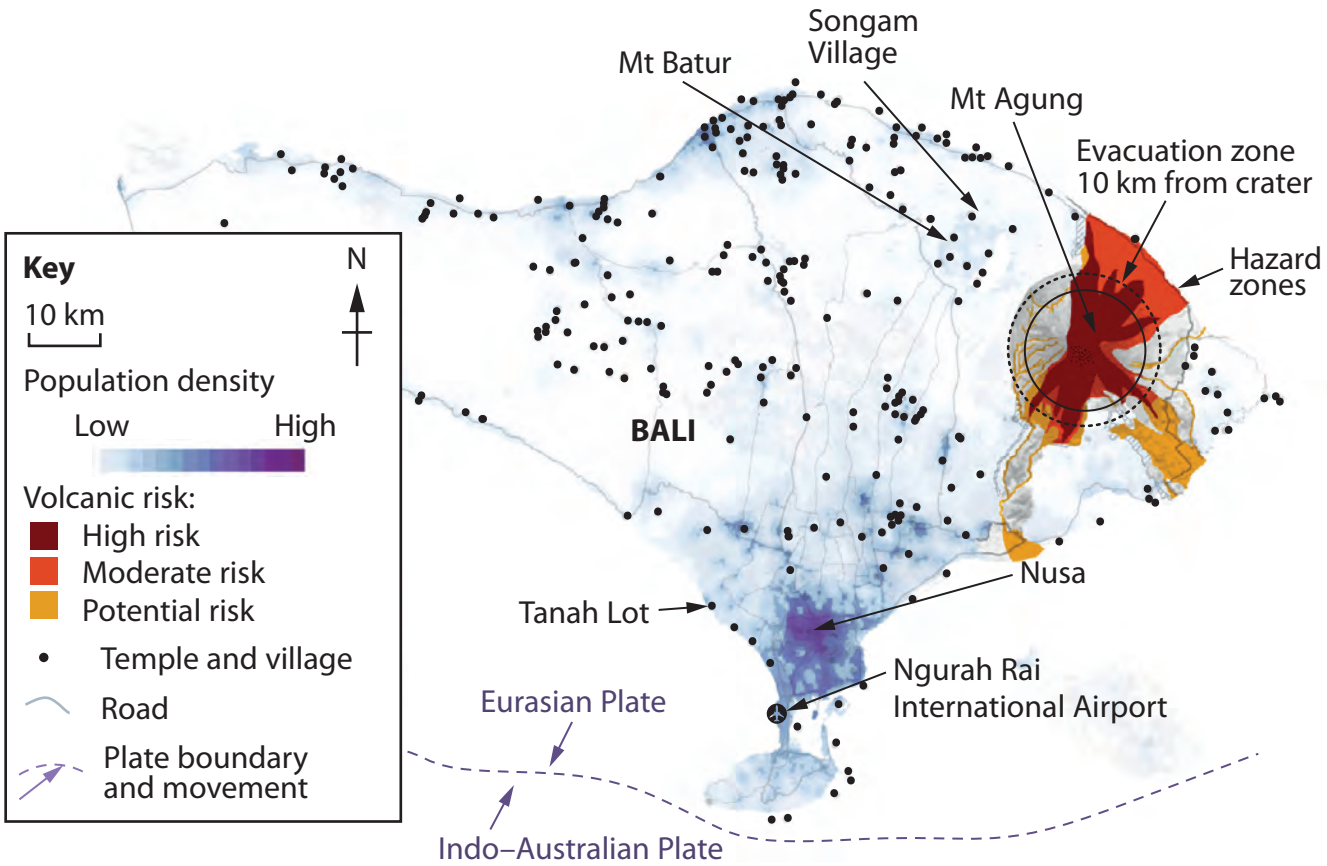


Figure 7b

Major threats and concentration of population in Bali

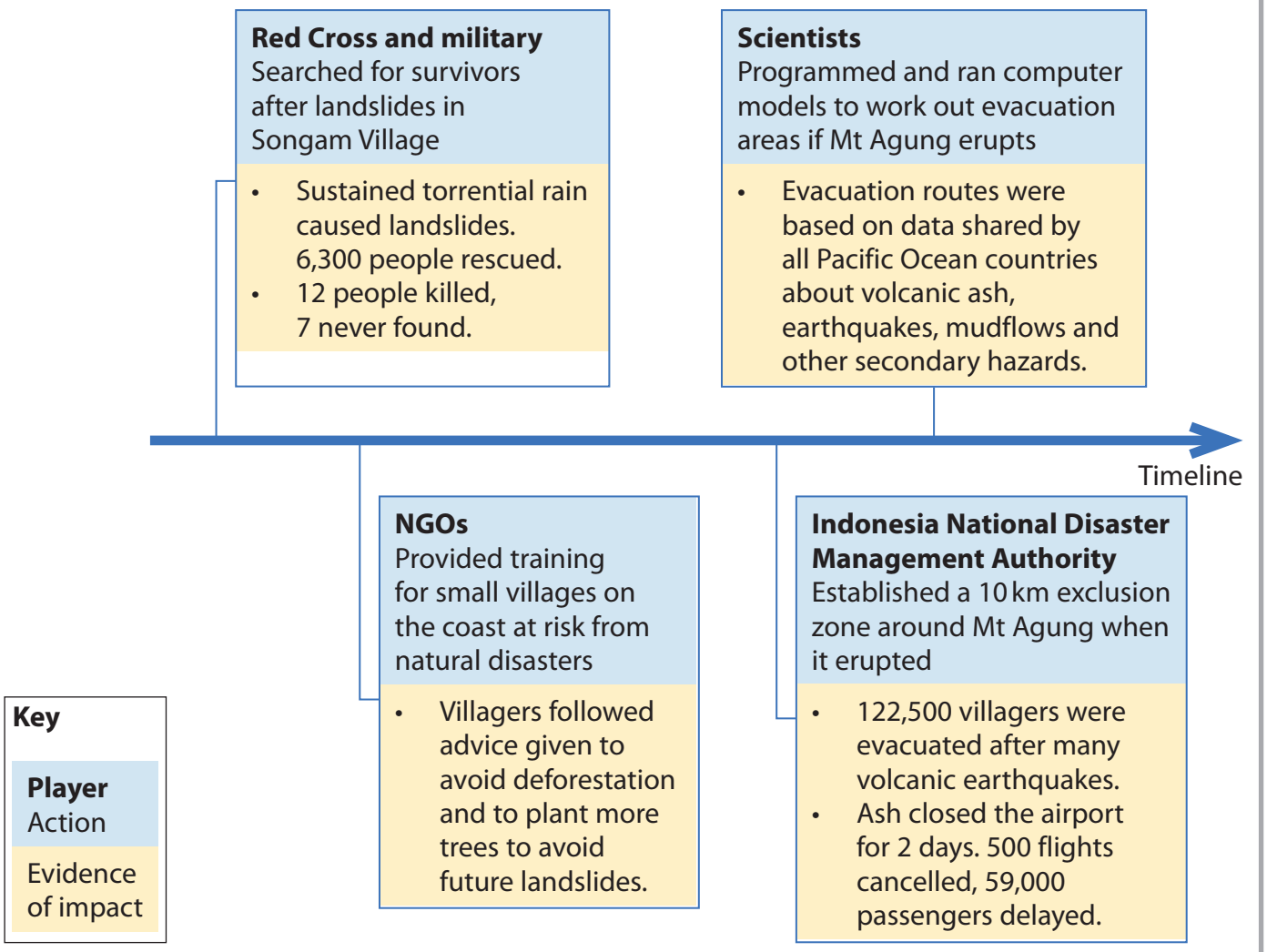


Figure 7c

Hazard responses during landslides and volcanic eruptions in 2017

Damage to beaches at Tanah Lot temple in Bali.

The coastline is eroding at 2 m/year, exacerbated by rising seawater levels.

Coral and river sediment are illegally removed for hotel construction.

Storm and tidal surges threaten coastal resorts up to 100 m inland and can sweep people out to sea – 10 tourists killed in 2013, 2 in 2016.

A tsunami warning sign in Nusa, a village in Bali.

Infrastructure is not being maintained.

Figure 7d

Images showing a lack of planned coastal management

BLANK PAGE

BLANK PAGE

BLANK PAGE

BLANK PAGE

Pearson Education Ltd. gratefully acknowledges all following sources used in preparation of this paper:

Figure 1 (Source: https://www.usgs.gov/news/magnitude-75-earthquake-papua-new-guinea)

Figure 3 (Source: https://www.arcgis.com/lochbrandy)

Figure 4b (Source: ArcGIS.com)

Figure 4d (Source: Picture 1 © Andrew Bargery/Alamy Stock Photo, Picture 2 © Xinhua/Alamy Stock Photo)

Figure 6 (Source: ArcGIS.com)

Figure 7b (Source: https://graphics.straitstimes.com/STI/STIMEDIA/Interactives/2017/11/mount-agung-interactive-reuters/index.html)

Figure 7d (Source: Picture 1 © Robert Harding/Alamy Stock Photo, Picture 2 © Neil McAllister/Alamy Stock Photo, Picture 3 © Philip Game/Alamy Stock Photo)

Every effort has been made to contact copyright holders to obtain their permission for the use of copyright material. Pearson Education Ltd. will, if notified, be happy to rectify any errors or omissions and include any such rectifications in future editions