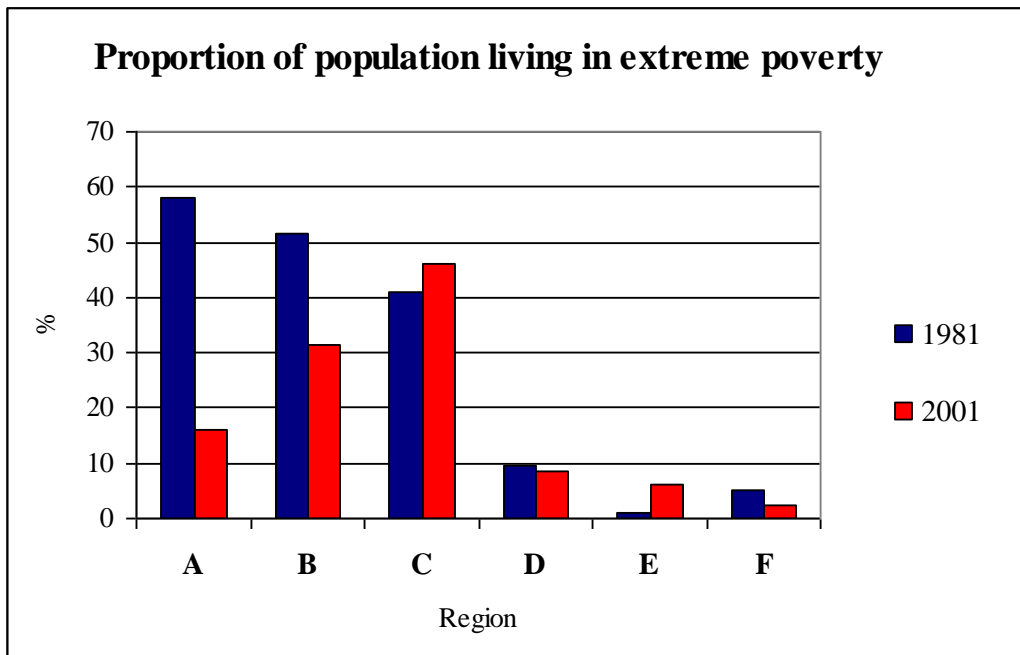


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PART I – DEVELOPMENT GEOGRAPHY

3. Match names of the regions given below with appropriate graphs presenting the proportion of regions' population living in extreme poverty (A, B, C, D, E, F).

- East Asia -
- Eastern Europe and Central Asia -
- Latin America and Caribbean -
- Middle East and North Africa -
- South Asia -
- Sub-Saharan Africa -

Extreme poverty – most severe state of poverty, as per definition affecting people living on less than 1 USD daily



Source: Chen, Shaohua, Ravallion, How Have the World Poorest Fared since the Early 1980s?, World Bank Policy Research Paper 3341, June 2004.

4. Gross domestic product (GDP) is a basic measure of the level of socio-economic development, however it is not the perfect one.

Give 2 disadvantages of GDP as a measure of the level of socio-economic development.

a)

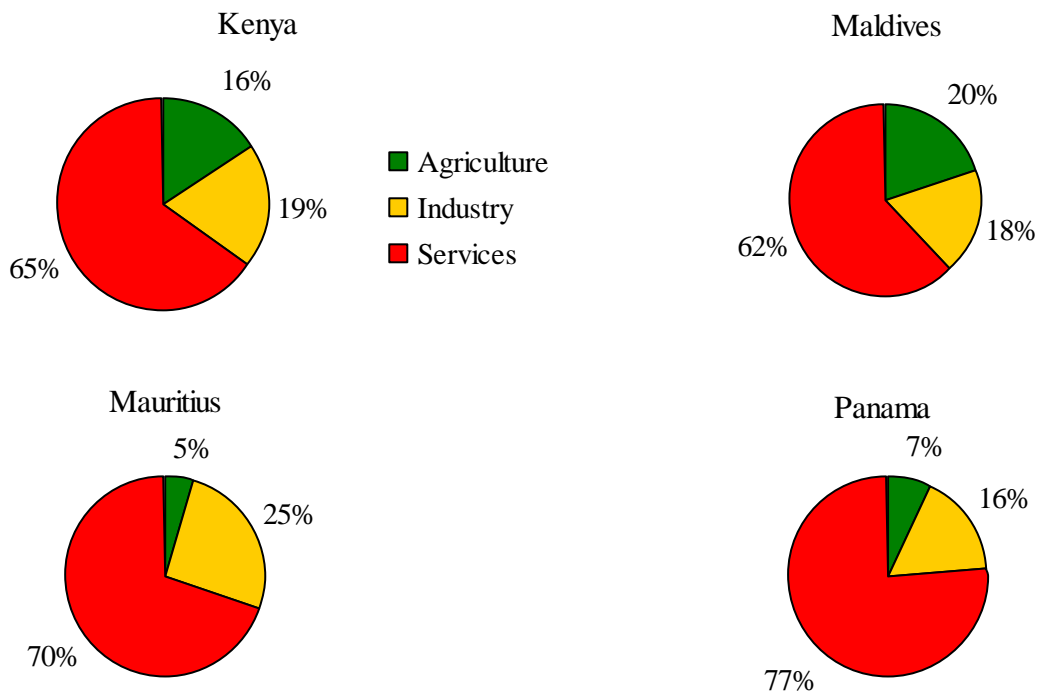
.....

b)

.....

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PART I – DEVELOPMENT GEOGRAPHY

5. The four graphs below present shares of economic sectors (agriculture, industry and services) in GDP of selected developing countries.



a) All structures of GDP presented in the graphs are not typical for developing countries. Which feature, untypical for developing economies, do the graphs present?

.....

.....

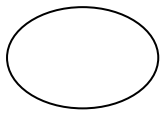
b) Give **two** reasons for the development of such GDP structures in selected countries.

-
-

6. Human Development Index (HDI) is one of the most popular measures of socio-economic development. It was elaborated by the United Nations Development Programme (UNDP). It combines life expectancy at birth, knowledge and education (measured by adult literacy rate and gross enrollment ratio) as well as the standard of living (measured by GDP per capita). It is a unit-free index. Its value ranges between 0 and 1.

A.

Calculate the value of Human Development Index for country X on the basis of the instruction from Human Development Report 2007/2008 in the Appendix 1 and data given below. Write the calculated value in the answer box.



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PART I – DEVELOPMENT GEOGRAPHY

DATA FOR COUNTRY X AND OTHER AUXILIARY DATA:

Life expectancy at birth in country X: **62.6 years**

Adult literacy rate: **48.6 %**

Combined gross enrollment ratio: **58.1 %**

GDP per capita: **1 550 USD**

$$\log (1\ 550) = 3.190$$

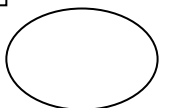
$$\log (100) = 2$$

$$\log (40\ 000) = 4.602$$

PLACE FOR YOUR CALCULATIONS:

Answer box:

The value of HDI in country X is
--



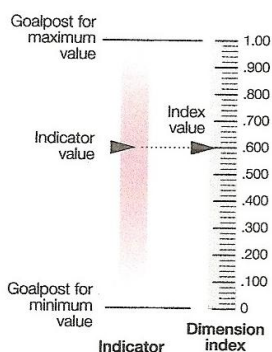
Part I – Appendix 1

The human development index (HDI)

The HDI is a summary measure of human development. It measures the average achievements in a country in three basic dimensions of human development:

- A long and healthy life, as measured by life expectancy at birth.
- Knowledge, as measured by the adult literacy rate (with two-thirds weight) and the combined primary, secondary and tertiary gross enrolment ratio (with one-third weight).
- A decent standard of living, as measured by GDP per capita in purchasing power parity (PPP) terms in US dollars.

Before the HDI itself is calculated, an index needs to be created for each of these dimensions. To calculate these indices—the life expectancy, education and GDP indices—minimum and maximum values (goalposts) are chosen for each underlying indicator.



Performance in each dimension is expressed as a value between 0 and 1 by applying the following general formula:

$$\text{Dimension index} = \frac{\text{actual value} - \text{minimum value}}{\text{maximum value} - \text{minimum value}}$$

The HDI is then calculated as a simple average of the dimension indices. The box on the right illustrates the calculation of the HDI for a sample country.

Goalposts for calculating the HDI

Indicator	Maximum value	Minimum value
Life expectancy at birth (years)	85	25
Adult literacy rate (%)*	100	0
Combined gross enrolment ratio (%)	100	0
GDP per capita (PPP US\$)	40,000	100

* The goalpost for calculating adult literacy implies the maximum literacy rate is 100%. In practice, the HDI is calculated using an upper bound of 99%.

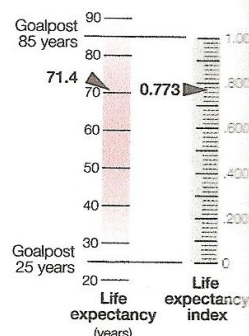
Calculating the HDI

This illustration of the calculation of the HDI uses data for Turkey.

1. Calculating the life expectancy index

The life expectancy index measures the relative achievement of a country in life expectancy at birth. For Turkey, with a life expectancy of 71.4 years in 2005, the life expectancy index is 0.773.

$$\text{Life expectancy index} = \frac{71.4 - 25}{85 - 25} = 0.773$$



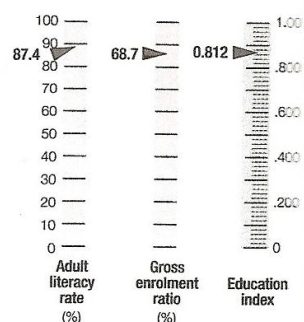
2. Calculating the education index

The education index measures a country's relative achievement in both adult literacy and combined primary, secondary and tertiary gross enrolment. First, an index for adult literacy and one for combined gross enrolment are calculated. Then these two indices are combined to create the education index, with two-thirds weight given to adult literacy and one-third weight to combined gross enrolment. For Turkey, with an adult literacy rate of 87.4% in 2005 and a combined gross enrolment ratio of 68.7% in 2005, the education index is 0.812.

$$\text{Adult literacy index} = \frac{87.4 - 0}{100 - 0} = 0.874$$

$$\text{Gross enrolment index} = \frac{68.7 - 0}{100 - 0} = 0.687$$

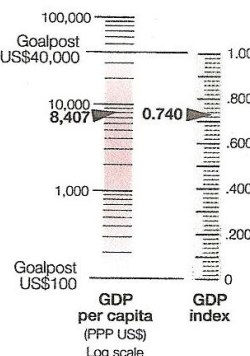
$$\text{Education index} = \frac{2}{3} (\text{adult literacy index}) + \frac{1}{3} (\text{gross enrolment index}) = \frac{2}{3} (0.874) + \frac{1}{3} (0.687) = 0.812$$



3. Calculating the GDP index

The GDP index is calculated using adjusted GDP per capita (PPP US\$). In the HDI income serves as a surrogate for all the dimensions of human development not reflected in a long and healthy life and in knowledge. Income is adjusted because achieving a respectable level of human development does not require unlimited income. Accordingly, the logarithm of income is used. For Turkey, with a GDP per capita of 8,407 (PPP US\$) in 2005, the GDP index is 0.740.

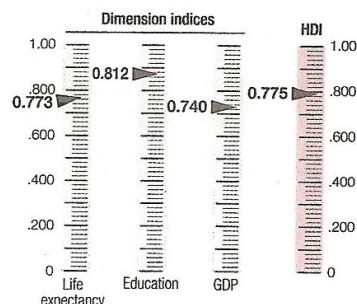
$$\text{GDP index} = \frac{\log(8,407) - \log(100)}{\log(40,000) - \log(100)} = 0.740$$



4. Calculating the HDI

Once the dimension indices have been calculated, determining the HDI is straightforward. It is a simple average of the three dimension indices.

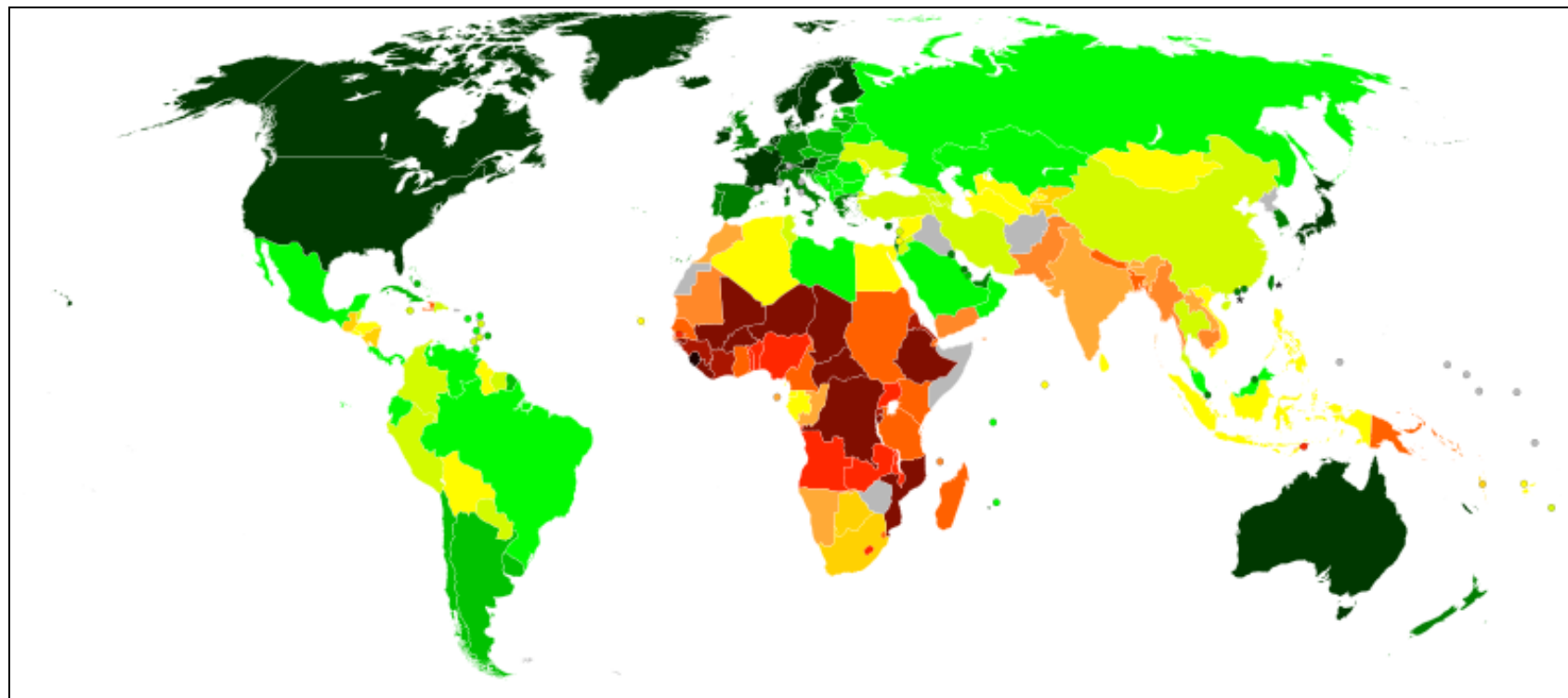
$$\text{HDI} = \frac{1}{3} (\text{life expectancy index}) + \frac{1}{3} (\text{education index}) + \frac{1}{3} (\text{GDP index}) = \frac{1}{3} (0.773) + \frac{1}{3} (0.812) + \frac{1}{3} (0.740) = 0.775$$



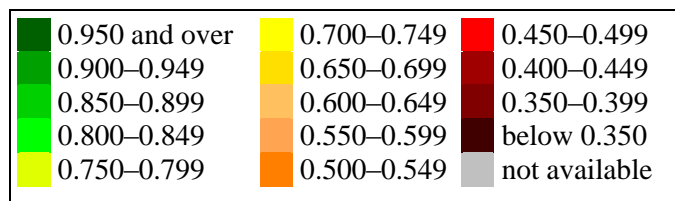
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PART I – DEVELOPMENT GEOGRAPHY

Part I – Appendix 2

World map indicating the level of Human Development Index in 2008



Value of HDI:



Total

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PART II – PLATE TECTONICS & VOLCANOES

1. The world map in Appendix 1 presents the location of major tectonic plate boundaries and hotspots. Do tasks 1A-1E on the basis of the map.
 - A. Decipher the legend of the map by writing the corresponding number of a symbol in the legend next to the explanations below.
 - Convergent plate boundaries -
 - Divergent plate boundaries -
 - Hotspots -
 - Plate boundary zones -
 - Transform plate boundaries -
 - B. Sign the tectonic plates given below on the map in Appendix 1 and mark their boundaries.

a) Arabian Plate	d) Nazca Plate
b) Cocos Plate	e) Philippine Plate
c) Juan de Fuca Plate	f) Scotia Plate
 - C. Draw the movement vectors of tectonic plates at the boundaries between:
 - a) African Plate and South American Plate;
 - b) Indian Plate and Eurasian Plate.

Use arrows to indicate the direction of movement of the plates mentioned above placing them next to:

- the boundary between African plate and South American plate in case of a)
- the boundary between Indian plate and Eurasian plate in case of b).

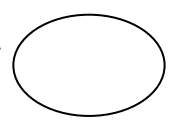
- D. The list below presents different types of plate boundaries. Match their names with numbers representing examples of geographical objects associated with each kind of boundary (*in italics*).

- transform (conservative) plate boundary -
- oceanic divergent plate boundary -
- continental divergent plate boundary -
- oceanic-oceanic convergent plate boundary -
- oceanic-continental convergent plate boundary -
- continental-continental convergent plate boundary -

1 – The Andes, 2 – The East Africa Rift, 3 – The Himalayas, 4 – The Marianas and the Marianas Trench, 5 – The Mid-Atlantic Ridge, 6 – The San Andreas Fault

- E. Mark the above listed geographical objects on the map using appropriate numbers (1-6).

<p>First name and family name:</p> <p>Country:</p>
--



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PART II – PLATE TECTONICS & VOLCANOES

2.

A. Fill in the table below using the terms listed below. All terms must be used only once. It is possible that more than one term needs to be written in one field of the table.

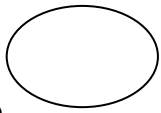
basaltic, broad-shaped and gently sloping cone, effusive, explosive, fluid (runny), high silica, hotspots, large and steep peak, low silica, mid-oceanic ridges with spreading sea-bed, rhyolitic or andesitic, sticky (viscous), subduction zones

	1	2	3	4
Type of volcano	Type of eruption	Type of magma	Shape of volcano	Typical location
shield volcano				
stratovolcano				

B.

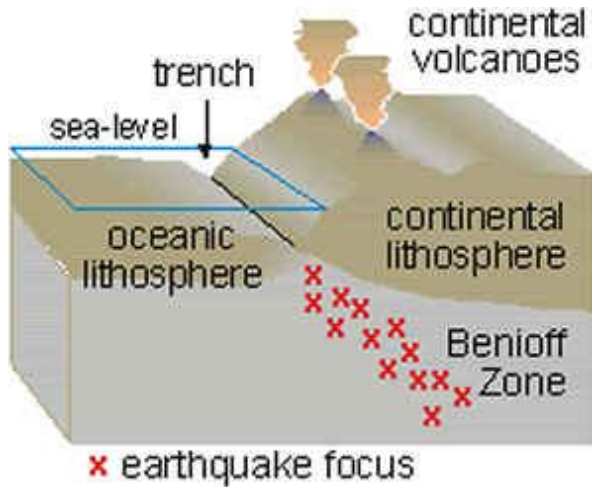
Match the names of volcanoes listed below with a corresponding description in Appendix 2, name of the country or territory and volcano type (shield volcano or stratovolcano). The map in Appendix 1 can be helpful.

Volcano name	Description number	Country or territory	Type of volcano
Erebus			
Erta Ale			
Fernandina (Galapagos)			
Merapi			
Klyuchevskaya Sopka			
Krakatau			
Mauna Loa			
Mount Pelée			
Mount Vesuvius			
Pinatubo			
Piton de la Fournaise			
Tambora			



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PART II – PLATE TECTONICS & VOLCANOES

3. On the basis of the diagram below explain what Benioff zone (or Wadati-Benioff zone) is. Indicate how it is created and in which kind of plate boundaries it occurs.



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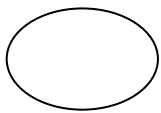
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Source: United States Geological Survey, http://earthquake.usgs.gov/images/glossary/benioff_zone.gif

4. Put the terms associated with volcanic activity into groups indicated below. Each term can be used only once. Each group should contain four terms.

PRODUCTS OF VOLCANIC ERUPTION

1.

2.

3.

4.

VOLCANO STRUCTURE

1.

2.

3.

4.

VOLCANIC LANDFORMS

1.

2.

3.

4.

TYPES OF MAGMA INTRUSIONS

1.

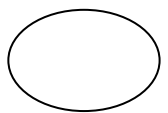
2.

3.

4.

Terms:

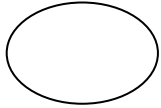
ashes and lapilli, batholith, caldera, columnar basalt, crater, dyke, laccolith, lahar, magma chamber, maar, pyroclastic flow, pumice, pipe, sill, vent, volcanic neck



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PART II – PLATE TECTONICS & VOLCANOES

5. Volcanic eruptions are considered to be a very dangerous natural hazard. However, there are certain advantages of volcanic activity for local communities. List them.

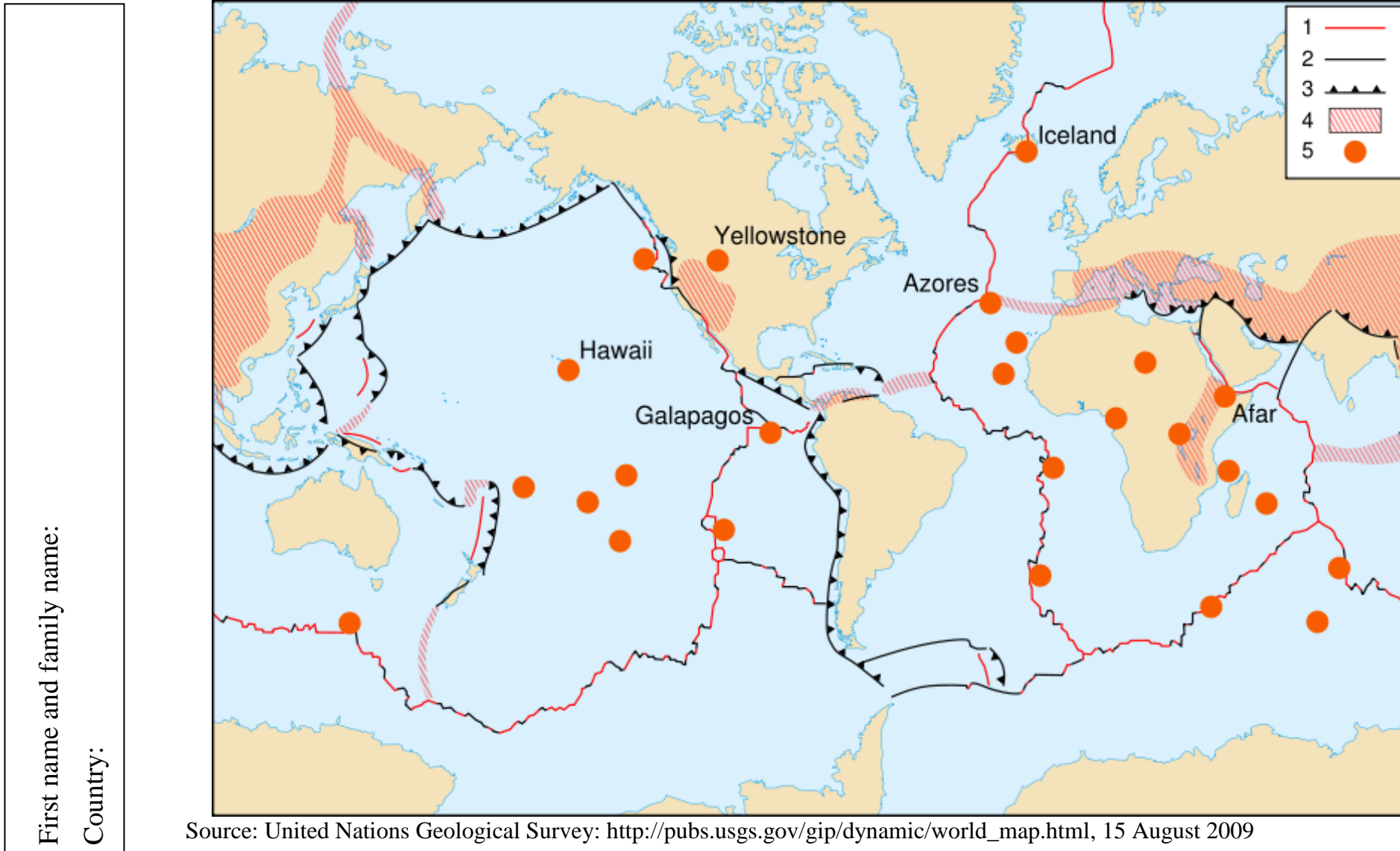
-
-
-



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PART II – PLATE TECTONICS AND VOLCANOES

Part II – Appendix 1

Major tectonic plate boundaries and hotspots



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PART II – PLATE TECTONICS AND VOLCANOES

Part II – Appendix 2

1)

The volcano is the highest active volcano of Eurasia. Its steep, symmetrical cone towers are a mere 100 km (60 miles) from the Bering Sea. The volcano is part of the natural UNESCO World Heritage Site. It is considered sacred by some indigenous peoples, being viewed by them as the location at which the world was created. On June 28, 2007, the volcano began to experience the largest explosions so far recorded.

2)

It is the most active volcano in the country with the maximum number of volcanoes in the world and has erupted regularly since 1548. Its name means *Mountain of Fire*. Thousands of people live on the flanks of the volcano, with villages as high as 1700 m above sea level. Hot gas from a large explosion killed 43 people in 1994, mostly in the town of Muntilan, west of the volcano. Another large eruption occurred in 2006, shortly before the Yogyakarta earthquake. The volcano continues to hold particular significance for the Javanese: it is one of four places where officials from the royal palaces of Yogyakarta and Solo make annual offerings to placate the ancient Javanese spirits.

3)

It is a major tourist attraction on an island being one of the overseas departments of France as well as the outermost part of the European Union. On the island the volcano is called “le Volcan”. It was formed by a hotspot, which is believed to have been active for the past 65 million years. The island belongs to the Archipelago of the Mascarenes. The Arab sailors used to call it “Island of the West”.

4)

It is the southernmost historically active volcano on Earth. With a summit elevation of 3,794 meters (12,448 ft), it is located on Ross Island, which is also home to three inactive volcanoes. It is a part of the Pacific Ring of Fire. Characteristic eruptive activity consists of Strombolian eruptions from the lava lake or from one of several subsidiary vents, all lying within the volcano's inner crater. Scientific study of the volcano is facilitated by the proximity of McMurdo Station (U.S.) and Scott Base (N.Z.).

5)

Before 1991, the mountain was inconspicuous and heavily eroded. It was covered with dense forest, which supported a population of several thousand indigenous people, the Aeta, who had fled to the mountains from the lowlands during the Spanish conquest of the country. The conquest commenced in 1565. The volcano's ultra-Plinian eruption in 1991 produced the second largest terrestrial eruption of the 20th century. Successful predictions of the eruption led to the evacuation of thousands of people from the surrounding areas, saving many lives, but surrounding areas were severely damaged by pyroclastic flows, ash deposits and lahars.

6)

It is located on the youngest island in the archipelago which is a notable tourist destination. The volcano makes an interesting comparison to Kilauea volcano on Hawaii Islands because of the large, deep caldera, the very steep (>35 degree) slopes and the lack of rift zones around it. The name was given in honor of the king of Aragon who sponsored the voyage of Columbus. The fauna of the island, on which the volcano is situated, includes Marine Iguanas, Flightless Cormorant, Galapagos Penguins, Pelicans and Sea Lions.

CERIGEO 2009
PART II – PLATE TECTONICS AND VOLCANOES

7)

The volcano erupted in 1815 with a rating of seven on the Volcanic Explosivity Index, making it the largest volcanic eruption in recorded history. The explosion was heard on Sumatra island (more than 2,000 km away). The eruption created global climate anomalies; 1816 became known as the *Year Without Summer* because of the effect on North American and European weather. Agricultural crops failed and livestock died in much of the Northern Hemisphere, resulting in the worst famine of the 19th century.

8)

It is a volcano considered to be the most active volcano in the country inhabited by the Africa's second most populous nation. The volcano is 613 meters tall, with a lava lake at the summit. It is notable for being the longest existing lava lake, present since the early years of the twentieth century. The volcano is located in the desert area in Afar Depression close the northern border of the country, close to another African country created in 1993. It is surrounded completely by an area below sea level.

9)

Its volcanic cone is composed of layers of volcanic ash and hardened lava. The volcano is now famous for its extremely destructive eruption in 1902 and the destruction that resulted, is now dubbed the worst volcanic disaster of the 20th century. The eruption killed about 30,121 people, most deaths in the destroyed Saint-Pierre, at that time the largest city on the island, due to its deadly pyroclastic flows. One of the eruption types is named after the volcano.

10)

It is the largest volcano on Earth in terms of area covered. It is an active volcano with a volume estimated at approximately 18,000 cubic miles (75,000 km³). Its name in the local language means "Long Mountain". Trade winds blow from east to west across the archipelago on which the volcano is located and its presence on the island strongly affects the local climate. At low elevations, the eastern (windward) side of the volcano receives heavy rain and so the city of Hilo is the wettest in the United States. The rainfall supports extensive forestation. The western (leeward) side has a much drier climate.

11)

It is the only volcano on the European mainland to have erupted within the last hundred years, although it is not currently erupting. The volcano is best known for its eruption in AD 79 that led to the destruction of two Roman cities and caused the death of 10,000 to 25,000 people. It has erupted many times since and is today regarded as one of the most dangerous volcanoes in the world because of the population of 3,000,000 people living nearby and its tendency towards explosive (Plinian) eruptions. It is the most densely populated volcanic region in the world.

12)

The best-known eruption of the volcano culminated in a series of massive explosions on August 26–27, 1883, which was among the most violent volcanic events in modern and recorded history. The cataclysmic explosion was distinctly heard as far away as Perth in Western Australia, about 1,930 miles (3,110 km) away, and the island of Rodrigues near Mauritius, about 3,000 miles (5,000 km) away. Eruptions at the volcano since 1927 have built a new island in the same location.

CERIGEO 2009
PART III – POLITICAL GEOGRAPHY

A. Which of the countries contributing troops to the ISAF are NOT members of NATO? Underline the correct answer/answers.

Albania, Austria, Finland, France, Greece, Iceland, Ireland, Macedonia, Norway, Sweden, Turkey

B. List **six** aspects (political, economic, social) of international presence in Afghanistan for the states involved in military mission, both positive and negative.

Positive aspects (at least 1)	Negative aspects (at least 3)
<ul style="list-style-type: none"> • • • • • 	<ul style="list-style-type: none"> • • • • •

C. Afghanistan is very often described as a *failed state*. What does this term mean? Give your definition referring to Afghanistan as an example.

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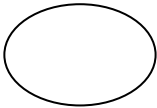
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CERIGEO 2009
PART IV – WATER IN AFRICA

Africa is a continent with enormous problems related to water supply to inhabitants. Therefore, rivers and lakes are very important for the population and the economy.

1.a Which type of river mouth does the longest river in Africa have?

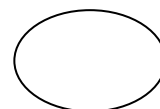
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1.b Explain the development of this type of river mouth.

.....

.....

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In 1970, the building of the new Aswan Dam on the Nile was finished. The dam changed the hydrographic characteristics of the Nile.

2.a Identify two positive effects of the Aswan Dam.

.....

.....

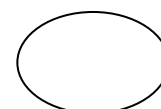
2.b Explain your answer.

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3.a Identify negative effects of the Aswan Dam on agriculture and formation of the delta.

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3.b Explain your answer

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.....



First name and family name:

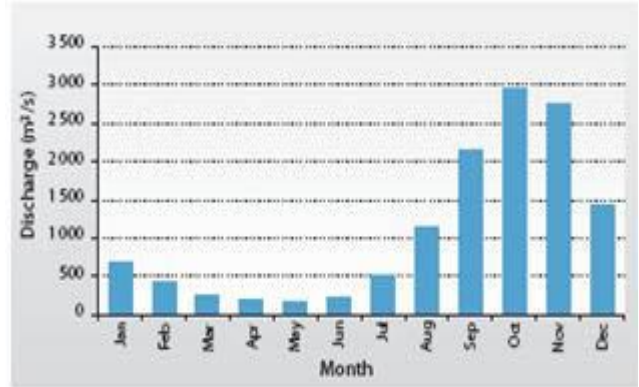
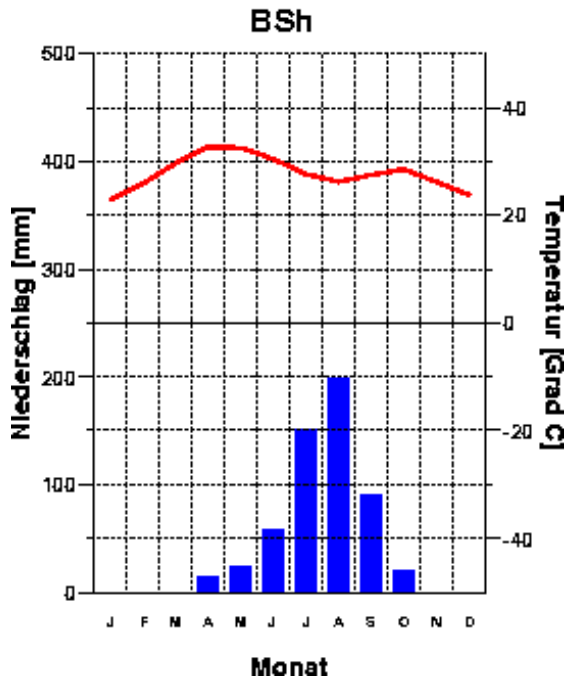
Country:

CERIGEO 2009
PART IV – WATER IN AFRICA

Part IV – Appendix 1

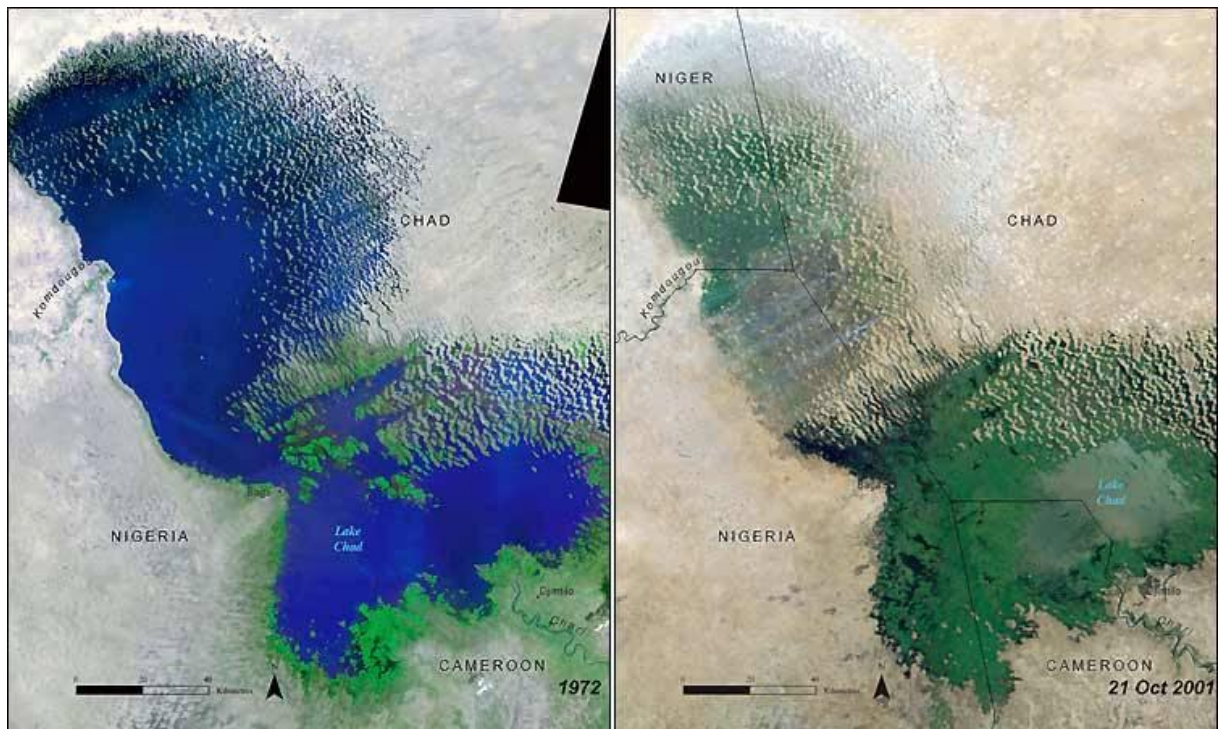
N'Djamena
295 m

27.8 Grad C
556 mm



The annual discharge of the Chari River at N'Djamena

Der Niederschlag – precipitation
Die Temperatur – temperature
Der Monat – month
Der Grad - degree



Source: United National Environment Programme (UNEP)