HUMAN AND SOCIAL SCIENCE: HSSC4

LESSON 17

UNIT STANDARD: US 115471SO3

INTRODUCTION

You will notice that our focus on the environment is so wide that we cannot finish all aspects in detail. We also need to follow the SBA focus on the content that is set for you. I found it appropriate to look at the content set for you in your skill task. Try to follow this topic carefully and if possible, get a video down load from google. You also need to make sure that you receive further or much better explanation from your lecturer.

TOPIC 1: EL NINO AND LA NINO.

- The name El Nino comes from the Spanish word which means 'The little boy or Christ Child'. The name was given by fishermen in the eastern Pacific Ocean who first noticed, during December time, that the sea water has become warmer than usual.
- The term El Nino refers to periodic (many times) warming of sea surface temperatures across central and east-central Equatorial Pacific.
- La Nina represents periods of cold sea surface temperatures across the east-central Equatorial Pacific.
- The name La Nino comes from the Spanish name 'little girl' or simply 'cold event'
- El Nino and La Nina are opposite phases of what is known as the *El Nino-Southern Oscillation* (**ENSO**) cycle. The ENSO cycle is a scientific term that describes the fluctuations(changes) in temperature between the ocean and atmosphere in the east-central Equatorial Pacific
- El Nino occurs more frequently than La Nina.

HOW DOES EL NINO OCCUR?

- In normal conditions, the wind blows from the east to the west along the equator in the Pacific. These are the **Trade winds** (warm winds also called easterly winds) which blow towards the west along the equator. This results in the piling of warm water in the western side of the Pacific to a sea surface area of up to 18 inches high.
- In the El Nino condition, the trade winds become too weak and cannot reach the western pacific. The eastern Pacific Ocean remains warmer.

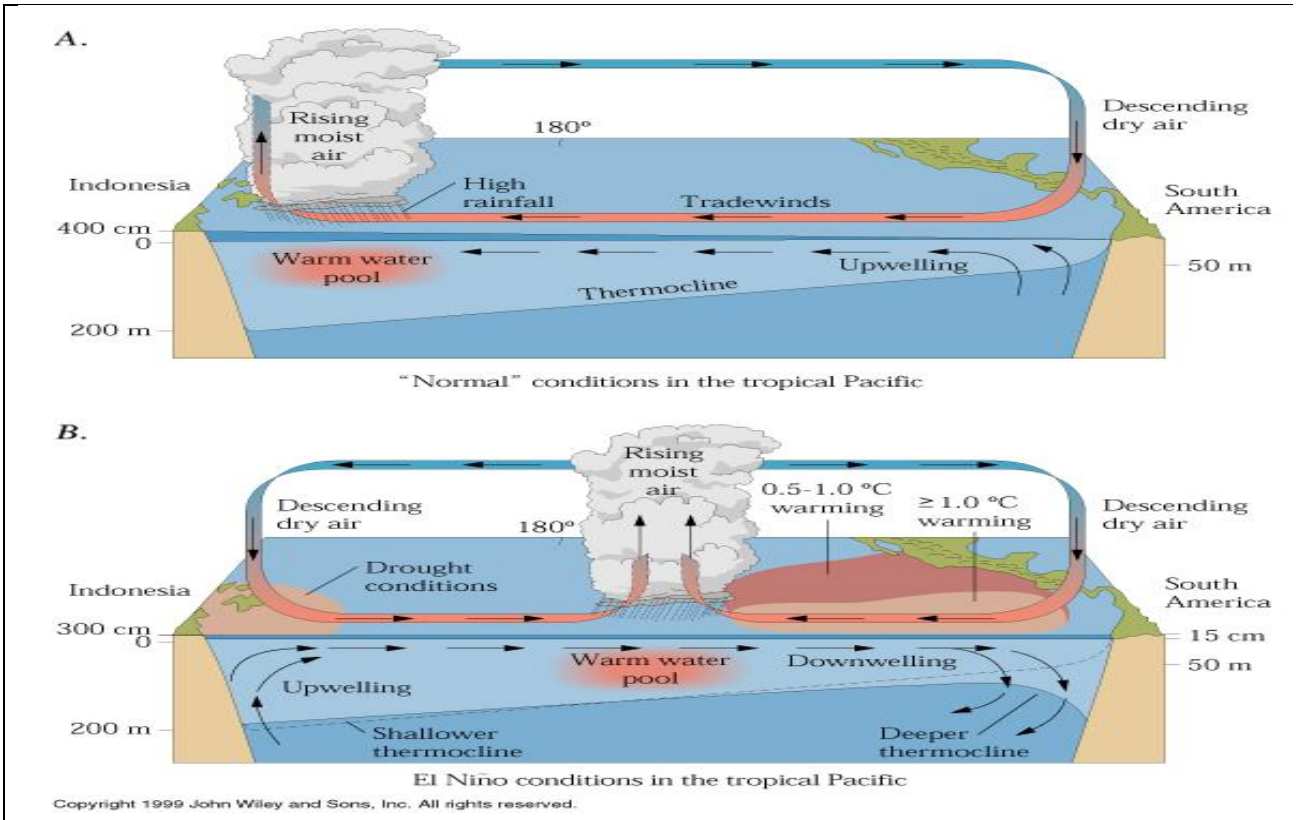
WHAT ARE THE EFFECTS OR CONSEQUENCES OF EL NINO?

- **An El Nino lessens (makes weak) the upwelling (rising) of cold water and the uplift of nutrients from the bottom of the ocean**. : Usually when the water rises from the bottom, it comes with nutrients that feed fish species living in the upper surface. As a result, fish either migrate to other regions or die during an El Niño because they lack adequate food for growth and survival.
- **El Nino leads to drought and dry conditions.** Dry conditions may lead to veld fires and poor crop production in many areas. These conditions are experienced when the winds that fetch rain to these regions become weaker.
- **The heavy floods are experienced**. These occur far beyond the ocean shores in the main land, destroying property and as result, many people remain homeless.
- **Occurrence of Hurricanes, Typhoons, and very cold weather:** The warm pacific air is associated with of serious hurricanes, typhoons, and very cold weather in various parts of the world.

WHAT ARE THE EFFECTS OF EL NINO ON OUR WEATHER IN SOUTH AFRICA?

- The temperatures of our oceans will rise (will be high/ warm).
- Our air will be dry and humid.
- Our summers will be very hot. You can protect yourself by keeping yourself cool, keep hydrated by drinking enough water, wear light colours to reduce the impact of heat in your body and ensure that you conserve (save) water.

STUDY THIS FIGURE USING A SIMPLIFIED EXPLANATION BELOW.



Note in sketch A:

This is a situation when there is no El Nino. The trade winds move warm water from South
America (South Pacific) to Indonesia (West Pacific). The south Pacific experiences the flow of cold water from the bottom to the surface. This is upwelling. So, the warm water that was in the South Pacific is now in West Pacific and its place has been taken by cold water that comes from the bottom. On the West Pacific (where there is now warm air) there is rising moist air (warm air is moist and rises because it is light). Where this rising air occurs, there will be heavy rain, thunderstorms cyclones etc.

Note in sketch B

Trade winds are weak now. They cannot take the warm water to the West Pacific. The warm water has only moved to the central part and the large amount is still in the South Pacific. The rising moist air followed by heavy rain and thunderstorm or cyclones will be the central and south Pacific. It is in this area where the warm water will be felt. Drought conditions will be in the west pacific. This condition of warm water in the south pacific is the one that is given the name El Nino.

ACTIVITY

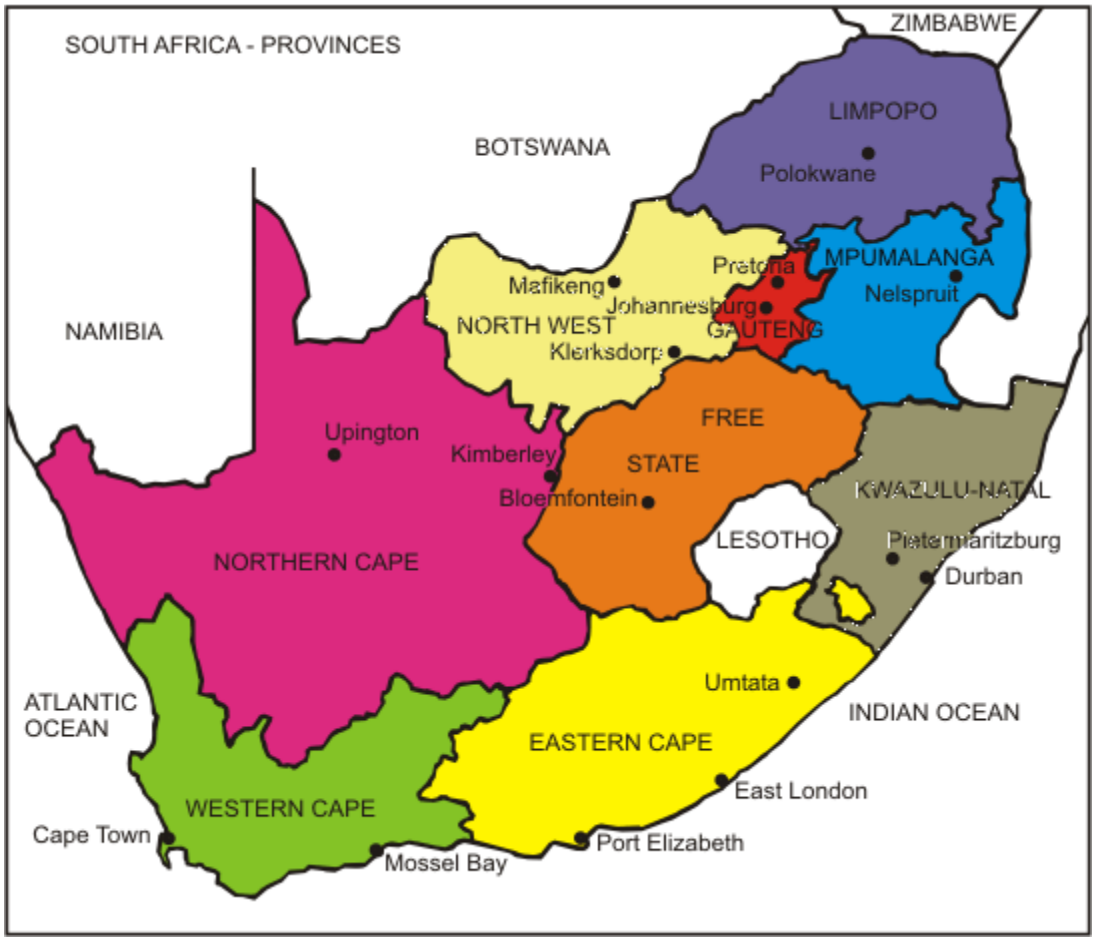
1.1 Identify the effect of the El Nino on the picture.
1.2 What are the consequences of the El Nino effect on the picture? Name 4.
1.3 Name any other 4 effects of El Nino (excluding the one on the picture).
1.4 Explain the concept El Nino.
1.5 How does El Nino occur?
1.6 Mention any five ways to reduce the impact of the environmental effect that is on the picture.

TOPIC 2: MAP OF SOUTH AFRICA

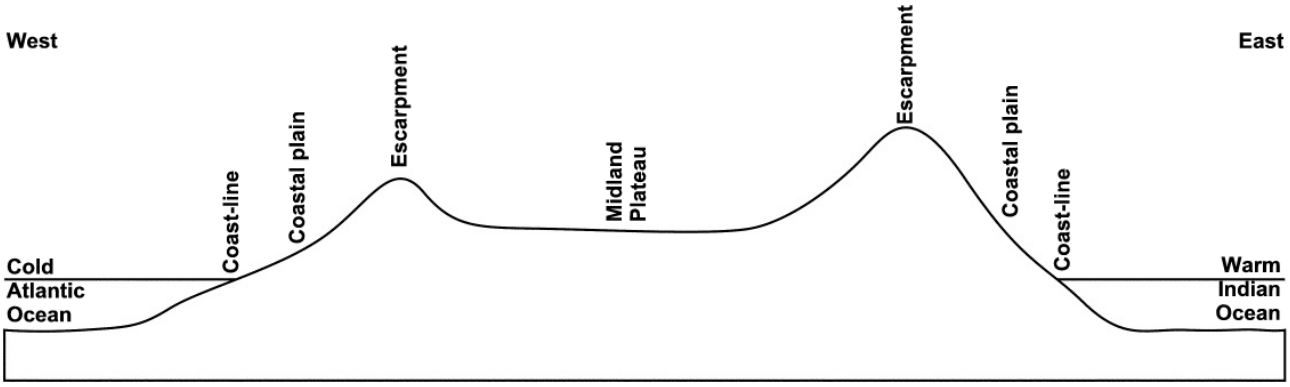
This topic deals with general information about South Africa. The focus is to identify and know places on the map. You need to add more information on this. You are required to know South Africa in many aspects as part of your general knowledge in HSSC4. Although this is basically on the environment, other general questions from Social justice, democracy, diversity, events and time will be assessed in your final paper. This is on section A of the final question paper and the format is of one word answer (short response).

This is for your own (self-study) but you are free to seek help from your lecturer.

Study the 2 maps of South Africa (and a graph) together with the notes underneath and answer the questions that follow**.**


SOUTH AFRICA - PROVINCES
ZIMBABWE
LIMPOPO
Polokwane
BOTSWANA
MPUMALANGA
Nelspruit
Pretoria
Mafikeng
Johannesburg
GAUTENG
NORTH WEST
Klerksdorp
NAMIBIA
FREE
STATE
Upington
Kimberley
Bloemfontein
KWAZULU-NATAL
LESOTHO
Pietermaritzburg
Durban
NORTHERN CAPE
Umtata
ATLANTIC OCEAN
INDIAN OCEAN
EASTERN CAPE
East London
WESTERN CAPE
Cape Town
Port Elizabeth
Mossel Bay


South Africa
ZIMBABWE
BOTSWANA
MOZAM.
NAMIBIA
Kalahari Desert
Kalahari Gemsbok National Park
Krug er National Park
Pietersburg
TRANSVAAL
Pretoria
Johannesburg
Nelspruit
Germiston
Soweto
Vereeniging
Vryburg
Kuruman
Mont aux Sources 10,822 ft. (3,299 m)
SWAZILAND
Newcastle
Ulundi
Ladysmith
Pietermaritzburg
Durban
Port Shepstone
Upington
Kimberley
Bloemfontein
Welkom
Bethlehem
LESOTHO
Giant's Castle 10,872 ft. (3,314 m)
Port Nolloth
Springbok
Prieska
De Aar
Middelburg
Umtata
Calvinia
Beaufort West
Great Karroo
Queenstown
Cradock
Bisho
East London
Grahamstown
Worcester
Oudtshoorn
Saldanha
Cape Town
Mossel Bay
Port Elizabeth
Cape of Good Hope
Cape Agulhas
ATLANTIC OCEAN
INDIAN OCEAN
Tropic of Capricorn
22° S
26° S
30° S
34° S
20° E
24° E
28° E
32° E
150 Miles
150 Kilometers
Orange
Vaal
Limpopo
Save
Olifants
Drakensberg
Brak
MAPQUEST.COM



- **The national capitals are:** Pretoria (administrative capital), Cape Town (legislative capital) and Bloemfontein (judicial capital).

- **South Africa** has one natural harbour, Saldanha Bay in the Western Cape.

- **The other major ports,** following the coastline clockwise are Richards bay and Durban in Kwazulu-Natal, East London, Port Elizabeth and Mosselbay in the Eastern Cape and Cape Town in the Western cape. A total of 98 % of all South Africa's exports are conveyed by sea through these seven ports.

- **The Orange, Vaal and Limpopo are the three main rivers in South Africa.** The longest of the three is the Orange river.

- **The Vaal River has its origin in the Drakensberg Mountains** in the Mpumalanga province. It is 1,120 km (695 mi) long and flows south west to where it unites with the Orange river of which it a tributary.

- **The Limpopo River rises in the Witwatersrand region,** where it is called the Crocodile river. It flows in a circular route of about 1,700 km (1,056 mi), first to the Botswana border in the north east, where it turns east forming the border with Botswana and Zimbabwe to where it enters the country of Mozambique, finally emptying itself in the Indian ocean

- The graph above graph shows how South Africa is built. It is made up of the **Central Plateau (Midland Plateau},** - is high and in the centre- the **Escarpment (the Great Escarpment** – highest in the east) - Is made out of mountains e.g. the Drakensberg), the **Coastal plain** and the **Coastline.**

ACTIVITY 2

2.1 Name the 9 provinces of South Africa and their capital cities.

2.2 Indicate the neighbouring countries of South Africa.

2.3 Name the physical borders in each province.

2.4 Name the oceans and currents bordering South Africa.

2.5 Name the 2 latitudes with which South Africa is located.

2.6 Name the 6 main harbours in South Africa.

2.7 Name the relief (build) regions of South Africa as seen on the graph.