



NAME
SURNAME

MINIYAKHE
CUSHELA

MINIYAKHE CUSHELA

Introduction

This assignment will be based on the biggest company that produces maize meal in South Africa. It will focus on what is a climate change, the causes together with risks associated with it. It will also elaborate more on what are the impact it has on the company that produces Maize Meal. To every reaction there is a solution, the actions to avoid or minimise the effects will also be touched.

What Is a Climate Change?

Climate change is the change of weather Just as from day to day, this leads to climatic conditions to vary from year to year. One year may be cool and wet, the next warm and dry. Such year-to-year variability in climate conditions may conceal gradual trends from one type of climate regime to another. Trends in climate can be apparent at many geographical scales, from local and regional climates to the climate of the Earth as a whole, the global climate. Such climate changes however, usually happen relatively slowly, taking generations or longer to occur, and are not often noticed. In fact, some climate changes occur over tens of thousands and even millions of years, but obviously these changes do not affect our day-to-day living. (2018. *Enviropedia.org.uk*)

Causes of Climate Change

There are many causes of climate change. Many are natural and involve processes which influence the flows of energy into, out of and within the climate system, such as changes in ocean circulation and changes in the amount of energy received by the Sun. Radiation from the sun heats the earth's surface. As the surface is heated it gives off radiation to the atmosphere and space, some of which is absorbed and held in the earth's atmosphere by greenhouse gases. Greenhouse gases are trace gases comprising much less than 1% of the atmosphere, and they arise from both natural processes and human-based activities. The warming effect of trace gas greenhouse gas is enhanced by the effect of water vapour, which also absorbs infrared radiation, leading to an important natural feedback effect between anthropogenic greenhouse gas and water vapour. A certain level of greenhouse gas is necessary for human life otherwise the planet would be an estimated 33°C cooler and uninhabitable. However, a rise in concentration of these gases, as is currently occurring as a result of human activities, causes more heat to be retained in the atmosphere, causing the 'enhanced greenhouse effect'. (2018. *Enviropedia.org.uk*)



Figure 1. The picture shows the carbon emissions from the factory through the funnels. (2018. Fixya.com)

Climate Change Impact

There are many climate change impacts since the climate change takes place in each and every part of the world but I will elaborate on only six, namely are; melting ice, rising sea level, reduced food security, pests and diseases, Heatwaves and droughts and the changing ecosystem.

- **Melting Ice**



FIGURE 2. Shows a ship stuck on ice as a result of melted iceberg.

It has been a problem on getting the product the destination on time due to the ice melting becoming a barrier to ships trying to pass. Sometimes this could damage the maize due to freezing it. Methods to help ships navigate through have been formulated. To comply with the harrowing conditions a new fleet of ships has already been designed for Arctic shipping. Nuclear icebreakers with 16 megawatt reactors and adjustable draft are supposed to help navigate through the thick layered ice packs and even shallow waters to transport the enormous natural resources of oil, gas and minerals out of the Arctic. (2018. Dasgupta).

- **Rising Sea Levels**



FIGURE 3. Shows a maize farm near the coast affected by the rising of the sea level.

Climate change impacts rising sea levels, recently here in Durban beaches areas were close to the coast were flooded due to the rising of the sea leaving people homeless, destroyed farmers for those who are involve in commercial farming. (2018. *Primer*). Average sea level around the world rose about 8 inches (20 cm) in the past 100 years; climate scientists expect it to rise more and more rapidly in the next 100 years as part of climate change impacts. Coastal cities are already seeing an increased number of flooding events and by 2050 many such cities may require seawalls to survive. Estimates vary, but conservatively sea levels are expected to rise 1 to 4 feet (30 to 100 cm). This affect the company that trade maize with other countries, due to the effect on ports ships fail to enter for discharging, causing delays. Customers fail to receive food on time this might lead to starvation, and fatigue of people due to lack of the ability to do work from the food. This has a negative impact on the company and the country as they will be failing to generate revenue.

- **Reduced food security**

One of the most striking impacts of rising temperatures is felt in global agriculture, although these impacts are felt very differently in the largely temperate developed world and in the more tropical developing world. Different crops grow best at quite specific temperatures and when those temperatures change, their productivity changes significantly. In North America, for example, rising temperatures may reduce corn and wheat productivity in the US mid-west, but expand production and productivity north of the border in Canada. The productivity of rice, the staple food of more than one third of the world's population, declines 10% with every 1° C increase in temperature. Past climate induced problems have been offset by major advances in rice technology and ever larger applications of fertilizer; expectations are that in Thailand, the world's largest exporter of rice, however, future increases in temperatures may reduce production 25% by 2050. (2018. *Primer*)

- **Pests and Disease**



Figure 4. Shows a maize with pests due to weather conditions not favourable.

Rising temperatures favour agricultural pests, diseases and disease vectors. Pest populations are on the rise and illnesses once found only in limited, tropical areas are now becoming endemic in much wider zones. In Southeast Asia, for example, where malaria had been reduced to a wet season only disease in most areas, it is again endemic almost everywhere year around. Likewise, dengue fever, once largely confined to tropical areas, has become endemic to the entire region.

Increased temperatures also increase the reproduction rates of microbes and insects, speeding up the rate at which they develop resistance to control measures and drugs. (2018. *Primer*)

- **Heatwaves and droughts**

Despite downpours in some places, droughts and prolonged heatwaves will become common. Rising temperatures are hardly surprising, although they do not mean that some parts of the world will not “enjoy” record cold temperatures and terrible winter storms. Heating disturbs the entire global weather system and can shift cold upper air currents as well as hot dry ones. Single snowballs and snowstorms do not make climate change refutations. Increasingly, however, hot, dry places will get hotter and drier, and places that were once temperate and had regular rainfall will become much hotter and much drier. The string of record high temperature years and the record number of global droughts of the past decade will become the norm, not the surprise that they have seemed (*2018. Primer*). This will keep the company from growing more maize, the soil will no longer be fertile.

- **Changing ecosystems**

As the world warms, entire ecosystems will move. Already rising temperatures at the equator have pushed such staple crops as rice north into once cooler areas, many fish species have migrated long distances to stay in waters that are the proper temperature for them. In once colder waters, this may increase fishermen’s catches. Farmers in temperate zones are finding drier conditions difficult for crops such as corn and wheat, and once prime growing zones are now threatened. Some areas may see complete ecological change. In California and on the East Coast, for example, climate change impacts and warming will soon fundamentally change the forests; in a country, hundreds of plants species will disappear and hundreds more will move thousands of miles. (*2018. Primer*)

SOLUTIONS

What have we done to manage climate change?

To date, the effort to manage climate change has been a matter of high level diplomatic negotiations involving states and international organizations with a loud, but largely excluded fringe of NGOs, business groups, and minor political actors. The logic for this is that global climate change affects us all, but individual countries can manage only the activities that take place within their borders; to confront a global problem, we need a global solution. As the United Nations history of these negotiations begins: “Climate change is a global challenge and requires a global solution. Greenhouse gas emissions have the same impact on the atmosphere whether they originate in Washington, London or Beijing. Consequently, action by one country to reduce emissions will do little to slow global warming unless other countries act as well. Ultimately, an effective strategy will require commitments and action by all

the major emitting countries.” The global effort to manage climate change has been organized through what is called the United Nations Framework Convention on Climate Change (UNFCCC). (2018. Dasgupta).

Climate change difficulties – Why are climate change difficulties so hard to manage?

Managing climate change difficulties arise from two, related reasons: climate change management is viewed as expensive and it poses what we call a collective action problem. (2018. Dasgupta).

Why managing climate change difficulties seems so expensive

When business and politicians talk about climate change, the first thing they mention is cost. If you start from the status quo today, adding CO₂ removing equipment to a coal power plant is expensive – but only if you do not value the environment. When you buy coal for a power plant, you pay for a limited resource and the cost of supplying it to you. Today, when you dump the GHGs and black carbon from burning coal into the air, you pay nothing. But a clean atmosphere is a limited resource; the atmosphere will absorb only so much GHGs and black carbon before it is not clean, at which point it is costly to clean it. Logically, there is no reason why businesses that pay for a scarce resource like coal as an input should not pay for a scarce resource like the environment as a disposal site. This is called “costing” or “accounting” the environment. If the environment is included among the basic costs of doing business that all businesses plan into their profit and loss statements, then “managing climate change” would no longer be an expensive extra. It would be a standard cost of doing business. Today, however, no one values the environment and, therefore, environmental expenses are considered “extras” and so expensive, not expenses. (2018. Dasgupta).

Conclusion

Having figured the causes of climate change and the impact they have on the company, the information also proved that there is a solution to the problems. The company and the citizens of the country can still make a living from the product. By working together, we can maintain sustainability.

REFERENCING

Non Enviropedia.org.uk. (2018). Climate Change.

http://www.enviropedia.org.uk/Climate/Climate_Change.php

[Accessed 11 Oct. 2018].

Non. Fixya.com, 2018

Non.Fixya.com. (2018). natural causes of climate changes Questions & Answers

non. Fixya Pictures –Fixya. [online] Available at:

http://www.fixya.com/f/landing/tagspage/natural_causes_of_climate_changes?cmpid=20180709&gclid=EAlaIqobChMlj5qasNOB3qIVrbvtCh3sMgd1EAAYASAAEgLMQfD_BwE

[Accessed 11 Oct. 2018].

Non. Carnie, 2018)

Non. Carnie, T. (2018). Rising sea level threatens Durban | IOL News. [online] lol.co.za. Available at:

<https://www.iol.co.za/news/south-africa/rising-sea-level-threatens-durban-280377>

[Accessed 12 Oct. 2018].

Dasgupta, 2018

Dasgupta, S. (2018). How the Ice Melting in the Arctic has Affected the Shipping Industry?. [online] Marine Insight. Available at: <https://www.marineinsight.com/environment/how-the-ice-melting-in-the-arctic-has-affected-the-shipping-industry/>

[Accessed 12 Oct. 2018].