

CHANGING CLIMATE CHANGING NAMIBIA

A comprehensive guide for the Climate Change Exhibition in Namibia



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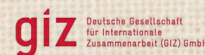
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FOREWORD



For the past few years Climate Change as a term has become a household name around the globe. It is the change in global or regional climate patterns, in particular a change attributed largely to the increased levels of atmospheric carbon dioxide (other gases as well) produced by the use of fossil fuels discovered during the industrial revolution.

Major world summits have been held to discuss Climate Change and Namibia has been no stranger to it. In the past decade Namibia has experienced Climate Change first hand with extreme weather patterns changing in the form of flash floods and extended drought seasons. This has left many citizens in great despair as the extreme weather changes have disturbed agricultural production which some 70% of Namibians depend on for their livelihood. Not to mention that this peaks our vulnerability as a nation because our country heavily depends on natural resources for production and stable economic activity.

One cannot forget to mention the ripple effects of major problems that follow after Climate Change such as hunger, poverty, malnutrition, unemployment and even in some cases death.

In as much as the nation has taken to devising methods at mitigating and adapting to climate change, including being signatory to the SDGs with particular focus on SDG 13 on Climate Action, more attention needs to be given to it considering that our home- our planet is like a spaceship Earth and we do not have Planet B or Earth 2.0.

I trust that this book comes at a very important crossroads for every Namibian citizen to have access to information around Climate Change and I encourage everyone Namibian to actively make a contribution to reducing their carbon footprint in any way possible.



This book is very unique in that it begs you- the reader- to personalize it and make it your own. This way, a chain of individuals will be formed in which everyone takes responsibility for advocating against the effects of Climate Change and joining the conversation around tangible solutions to protecting the future of our country and in return, our spaceship Earth.

I wish you an intellectually stimulating reading and active application of the knowledge gained from the writers.

Happy reading!

Emma Theofelus

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CHANGING CLIMATE CHANGING NAMIBIA



Namibia's Climate, Population Distribution & natural resource dependency

Over the past century, earth's climate has risen at an alarming rate, and is expected to continue this trend over the next century. This occurrence, known as climate change, negatively impacts the environment, which in turn greatly reduces our chances of living and surviving on earth. This global phenomenon also affects Namibia negatively. These changes to the climate necessitate the need to change Namibia and its people for the challenges facing them. This challenge is even tougher and fiercer than the previous challenges Namibia had face. Changing climate affects people from all walks of life, all sectors of the economy and the very environment resources we live from. It does not know borders because it is an atmospheric event. Therefore, Namibia needs a population that is environmentally literate and able to maintain the global atmosphere in habitable limits. Basically, the climate is changing Namibia as we know it; therefore it is essential for Namibians to be conscious and organised for the challenge they are facing.

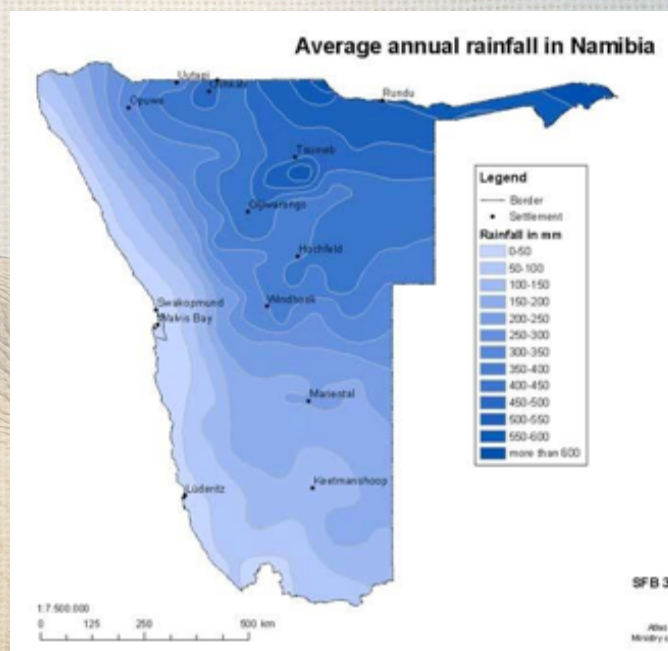
Namibia's vulnerability to Climate Change

Namibia is not exempted from the effects of climate change. In fact, due to its arid environment, Namibia is considered the seventh most vulnerable country in the world to the effects of Climate Change. The main prediction is that Namibia's climate is likely to become hotter and drier with more cases of extreme weather, such as flash flooding.

Aim of the booklet

This booklet shares information about the reality of climate change and what this means for Namibia. It is aimed at supplementing the information provided the Climate Change exhibition for Namibia.

It also highlights the ways in which organisations and individuals, by predicting the possible impact of climate change, can make changes and adapt their lifestyles and economic activities to reduce the effects of climate change. As Namibians we can work together to reduce the impact of climate change and support the international campaign to combat the causes of climate change.



Activity:

An area that receives less than 250mm of rain a year is described as 'Arid', whilst an area that receives between 250 mm and 500mm of rain a year is 'Semi-Arid'. Which areas of Namibia are arid and Semi-Arid according to this map? Imagine what will happen to rainfall in Namibia if our climate changes for worse?

MY HOME

THE BLUE PLANET

No other planet can sustain life

The Earth is the only planet in our solar system that is known to contain a diversity of life forms. Earth is also the only planet; we know of so far, that has the right mass, chemical composition, and location to support water in liquid form. A total of 71 % of the Earth's surface is covered with water, which makes it appear blue when viewed from space. It is for this reason that Earth is called the Blue Planet.

Spaceship earth

If you look at the earth from space, it can be compared to a floating ship in the midst of space. Think of it, the world is a ship floating in space, in the beginning there was enough supplies for everyone on this spaceship. As the population grew our actions deteriorating the quality of life on our spaceship, resources are becoming depleted. Unless we build another spaceship that can support life as we know. With the current trends of consumption and greenhouse emissions, the quality of life will continue to decline. In a normal ship, the captain will go ashore to get supplies and such. Do we have a harbour for docking our spaceship? What are we going to do with our spaceship once we are out of supplies?

Spaceship Earth or Spacecraft Earth is a world view term usually expressing concern over our use of limited resources available on earth and encouraging everyone on it to act as a harmonious crew working towards the greater good. If we lose this ship, we are doomed because no other ship can support life the way we know it.

THE ENGINE:

- What technologies provide us with food, clean water, medicine and oxygen on board?
- Which parts of the spaceship protect us from deadly radiation and against heat and cold?
- How many emergency exits do we have?

THE NAVIGATORS:

- How should we continue our journey?
- Should we change course? see panel
- Which direction do we want to go?

THE PASSENGERS:

- How many are we on board?
- How much is needed to satisfy all?
- Who pays for the tickets?

FUEL

- What fuel propels the spacecraft Earth?
- How full is the tank?
- How far can we travel?

THE FLIGHT CREW:

- Who is responsible on board?
- What qualities and qualifications are required to be a member of the crew?
- There are no passengers on spaceship earth.

We are all crew!

watch the documentary



Activity:

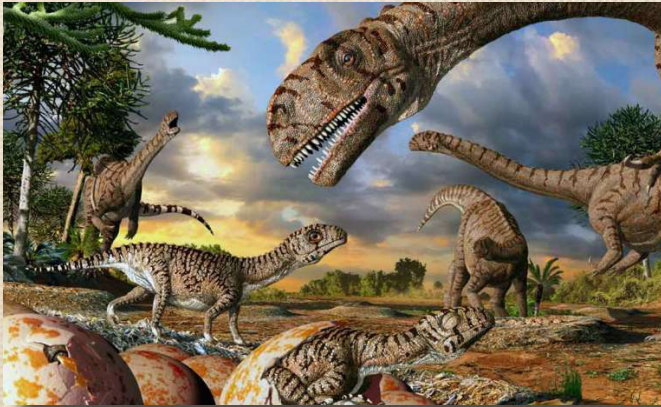
Is it your responsibility to look after the spaceship earth?
What would you do to save spaceship earth?



CAUSES OF CLIMATE CHANGE

Causes of Climate Change

Climate change refers to a change in average weather conditions. Climate change is a natural phenomenon but is increased by the release of carbon dioxide and other 'greenhouse gases' into the atmosphere. For millions of years the climate has been changing and fluctuating. The extinction of Dinosaurs is believed to be related to climate change which occurred when a meteorite crashed into the earth and raised so much dust that it prevented sunlight from reaching the surface. This reduced the earth's temperature and caused the death of Dinosaurs which could not adapt fast enough.

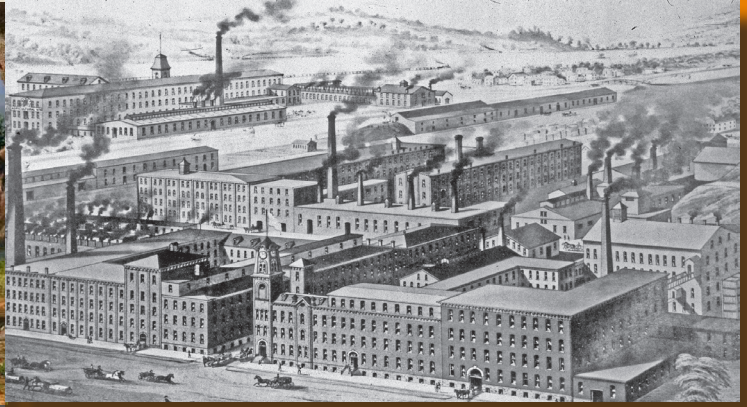


Climate Change as a natural phenomenon

Natural factors which contribute to climate change include volcanic activity, solar activity and the Earth's orbit around the Sun. However, we should be more concerned with the anthropogenic causes of climate change as they hasten the process of global warming.

Human induced Climate Change

The first and biggest anthropogenic contribution to climate change is the Industrial Revolution, which occurred in the 18th and the 19th centuries. During this period, societies in Europe and America began to construct more factories that used fossil fuels (such as coal and oil) and produced more smoke. This resulted in the emission of greenhouse gases into the atmosphere. Greenhouse gases have the ability to trap heat in the atmosphere, thereby resulting in the greenhouse effect. Currently, industries, factories and transportation contribute up to 84% of the emission of greenhouse gases into the atmosphere.



Who are the main contributors to climate change?

Due to different levels of industrial development and different consumption patterns, countries and individuals contribute differently to global warming and climate change. Industrialized and developed nations such as the USA, Europe and China contribute much more significantly than Namibia. In fact, the whole of Africa only makes 0.5%-1% of the impact of America. Therefore, Namibia and the rest of Africa have a much smaller carbon footprint.

CARBON FOOTPRINT

CALCULATE YOUR CARBON FOOTPRINT

No matter how small the country's carbon footprint, we are all affected by climate and as such, all countries should implement measures to reduce and cope with the changing climate. Namibia's climate is changing; therefore we should change Namibia and prepare her to cope with the predicted impacts.

What is a carbon footprint?

This is the amount of carbon dioxide (CO_2) that is released into the atmosphere as a result of our actions. This can be measured at individual, community, regional or national level. Therefore, some people have a bigger footprint (contribution to CO_2).

ACTIVITY

Worksheet

Circle the letter that best answers the following questions, and then use the Scoring Instructions to calculate your "carbon footprint" – the effect your family has on the climate in terms of greenhouse gasses you produce measured in units of carbon dioxide.

- How do you get to school/work?**
A. Walk or ride your bicycle
B. Motorbike
C. Car
D. Bus
- What kind of vehicle(s) do you/your parents drive?**
A. None (Don't own a vehicle)
B. Motorbike only
C. Car
D. SUV, van, bus or truck
- How often does someone in your family fly in a plane?**
A. No one fly
B. Once per year
C. 2 to 4 times per year
D. More than 4 times per year
- How often does your family eat out or order food at a restaurant?**
A. Never
B. Once per month
C. Once per week
D. Twice or more per week
- What kind of food does your family eat?**
A. Home grown or raised
B. Combination of store bought and home grown
C. Store bought only
- How many carbonated drinks (cool drink or fizzy) do you drink?**
A. None
B. 1 can/bottle per day
C. 2 cans/bottles per day
D. 3 or more cans/bottles per day
- How often does your family do laundry?**
A. Once per month
B. Twice per month
C. Once per week
D. Twice or more per week
- Do you get newspapers or magazines at home?**

- A. Yes
9. Do you turn the lights off when not needed?
A. Yes
B. No
10. Do you turn off your computer, video games or other electronics when you're not using them?
A. Yes
B. No
11. What source of energy do you use for cooking, lighting and heating your home?
A. Solar
B. Wood
C. Paraffin/candles
D. Gas/electricity
12. Does anyone in your home own any of the following items? (Circle all that apply.)
A. TV
B. Cell phone
C. DVD player
D. Computer
E. Washing machine
F. Dishwasher
G. Refrigerator
H. Microwave
I. Heater
J. Motorbike, quad

SCORING INSTRUCTIONS

For questions 1 through 11, assign 1 point for each A answer, 2 points for each B, 3 points for each C and 4 points for each D. For question 12, assign 1 point for each item circled. Add the points together to determine your "carbon footprint."

13 – 20 Points: Green is your favorite colour.

Keep up the good work.

21 – 28 Points: Very good.

29 – 36 Points: Your efforts are appreciated.

36 – 43 Points: There's room for improvement.

44 – 46 Points: Look for ways to become better friends with Mother Nature

A Note About Your Carbon Footprint As this worksheet shows, the more you consume, the greater your carbon footprint. Each time something is consumed, the earth's natural resources are used. By knowing your carbon footprint, you can understand how the earth is impacted and identify ways to protect natural resources.

EXTREME WEATHER



Temperature changes

In Namibia itself, predictions for temperature increases by 2100 range from 2 to 6°C. Temperature increases are lower in the coastal regions than the inland regions.

Change in precipitation

Within Namibia, rainfall reductions are expected to be greatest in the northwest and central regions. Particularly strong reductions are expected in the central areas around Windhoek and surrounding highlands. Projections range from small increases of less than 30mm per year to severe decreases of 200mm per year compared to current average. Both rainfall and temperature in Namibia are sensitive to the El Niño-Southern Oscillation (ENSO) effect, and rainfall is below average during El Niño conditions. Rainfall in the future is projected to become even more variable than at present.

Change in Evaporation

In Namibia, even if rainfall changes little from present levels, the water balance is expected to become drier because of an increase in evaporation rates due to temperature increases. An increase in evaporation of about 5 per cent is expected per degree of warming. With rainfall decreases as well, however, Namibia is likely to face severe water shortages. The country's poor rural population, particularly pastoralists and drylands populations, will be affected most.



Floods



Fire



Drought



HOW IT WILL
AFFECT US

Drought
Floods
Fire

High
temperature
Drought
High
evaporation

Extreme events
Ecological tipping points
Fire Drought Floods

CLIMATE CHANGE AND THE OCEAN

40%

carbon intake

giga tonnes

50

methane
released
per year

50%

loss of income

REDUCTION
in coastal upwelling

Sea Level Rise

30-100cm

in the next hundred years.

The oceans

play a vital role in regulating the climate; they generate oxygen and absorb carbon dioxide from the atmosphere, while also providing essential goods and services for sustaining life on Earth. Changes to the climate, lead to changes in the oceans.

Climate change has led to ocean acidification, which caused a change in the chemistry of water and an increase in water temperature. In fact, about 40% of the carbon dioxide produced since the beginning of the industrial revolution has been stored in the oceans. Due to this, marine ecosystems and coastal communities are put at risk. These changes may also reduce the ability of the oceans to absorb CO₂.



The Benguela

For Namibia, it is expected that climate change will have significant effects on the processes and functions of the Benguela current which is responsible for a rich marine environment along the Namibian coastline.

Four possible scenarios that could result from climate change along the Namibian coastal region:

1. Reduction in upwelling intensity along the Namibian coast.
2. Increase in average summer wind stress and coastal upwelling intensity.
3. The frequency and severity of Benguela Niño events is increased.
4. Low amplitude gradual effects, which is possibly the best-case scenario

Economic productivity

Fishing industries contribute 6% of GDP; damages could mean a 50% loss of income for individuals causing unemployment. The cold and nutrient-rich Benguela current provides adequate food supplies with an upwelling stream that provides the right temperature for fish, as climate change intensifies the temperature of the current rises. In turn we could see a reduction of fish-stocks especially in pelagic fish (which is fish living in the water of coastal, ocean or lake waters, but not on the bottom of the sea or the lake).

Rising Sea Levels

Due to the increased temperatures, the earth's ice is melting into the sea at an unnaturally rapid rate. Sea levels along the Namibian coastline may rise 30-100 cm in the next hundred years. Higher sea levels may lead to floods in significant parts of Walvis Bay and may affect other coastal towns as well.

IMPACTS OF CLIMATE CHANGE ON BIODIVERSITY

The biggest loss to biodiversity in climate change is mainly as a result of the change in rainfall patterns which will influence vegetation as the primary producers and will influence where certain agricultural practises can no be carried out. It is predicted that there will be a spatial shift in the distribution, growth and productivity of plant species. Changes in rainfall and intensified land use will worsen the desertification process and land may become more degraded, leading to a point of no return. This means a point where ecosystems are not able to maintain ecological functions and support life (Biodiversity).

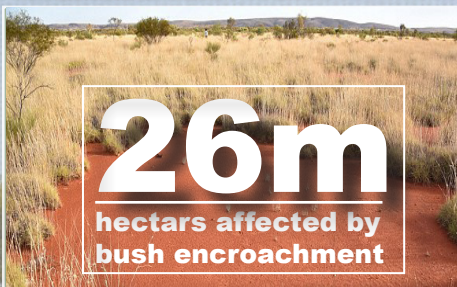
RAINFALL CHANGES



20 RAINFALL
shorter by
20 days

The change in rainfall patterns and the unpredicted events relating to the weather is the biggest challenge that will affect Namibia. In most of central Namibia, it is predicted that the rainy season will become shorter by 20 days. The area between Maltahöhe, Helmeringhausen and Gibeon in the south and around Khaudum NP and Tsumkwe is expected to have a reduction of 60 days. To some areas this means 0 rainfall days and therefore a complete transition of even the primary producers, the vegetation. Only scattered areas across Namibia are expected to have an increase of up to 20 days of rainy days per season.

SHIFT IN VEGETATION



26m
hectars affected by
bush encroachment

The changes in rainfall predicted for Namibia is expected to have an impact on vegetation cover across Namibia. Vegetation is expected to reduce in size and species along a west-east and south-north gradient in Namibia. This means a shift in vegetation would leave most of Namibia's western and southern parts drier and more unproductive for agricultural purposes. It is also theorised that the increase in bush encroachment (which reduces grazing capacity of farming lands) is a result of the warmer climate which had occurred over the last hundred years or so. A warmer climate favours trees more than grasses.

UNPRODUCTIVE ECONOMY



40-80%
reduction in subsistence
dryland cropping

The shift in vegetation will affect how much farming land is agriculturally productive and able to sustain communities. This is due to the dependence of Namibians on agricultural for livelihoods. The effect of climate change is likely to change patterns of biodiversity which will affect livelihoods and economic outputs of ecological systems which are worth billions of dollars if lost.



REDUCING OUR CARBON FOOTPRINT

Mitigating the impacts of climate change

In order to reduce our carbon footprint, we need to make mitigation efforts to reduce the greenhouse gas emissions that are warming our planet. As a Non-annex 1 party to the Convention, Namibia is not obliged to reduce its Greenhouse Gas (GHG) emissions. However the country's dependence on energy from South Africa (80%) and its favourable conditions for renewable energy makes the transition to a low carbon economy an important long-term strategy. According to experts, Namibia can become self-sufficient with energy supply by using renewable energy sources. Namibia therefore needs to develop strategies that can pave the way for the road to mitigate climate change and its impact on societies.

Mitigating options for Namibia

Renewable energy sources that Namibia could adopt on the road to climate change mitigation.

Sun

Solar Power uses energy from the sun to generate electricity. On average, Namibia has 300 days of sunshine in a year, which makes it an ideal location to harvest solar energy.

Wind

Power generated using turbines that convert wind to electricity. Due to high wind velocity in the coastal areas of Namibia, this makes the use of wind energy suitable for Namibia.

Biomass

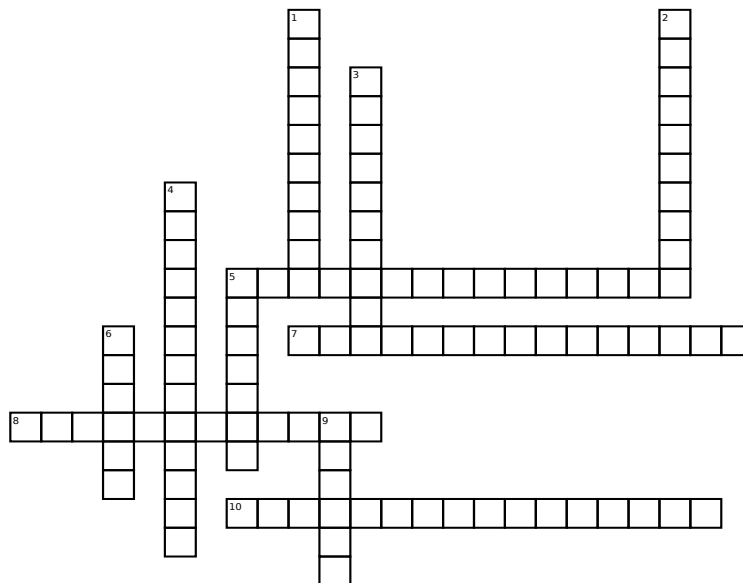
This technology generates electricity by burning biological material. Bush to energy utilizes the abundant, invasive encroacher bushes and burns them to produce electricity. Bush encroachment is the increase of bushes at the expense of grasses and the process reduces the economic productivity of rangeland.

Hydro

Power generated using water. Damming includes damming of rivers and setting turbines which are turned by the release of water under pressure from the dam. Namibia has a hydro power station on the Kunene River at Ruacana waterfall. The Ruacana hydro power station has the capacity of 330 MW.

ACTIVITY

Reducing our carbon footprint



Down:

1. Reducing the amount of greenhouse gases emission in the atmosphere
2. Renewable energy source suitable for Namibian coastal regions
3. Energy generated using the sun-UV light
4. Is very much a young people's problem
5. Namibia's only hydro power station
6. Namibia's coal powered station
7. Namibia import at ... % of their electricity from South Africa

Across:

5. Namibia can become energy sufficient by using
7. The amount of carbon dioxide (CO2) that is released into the atmosphere as a result of our actions
8. Average numbers of days with sun in Namibia
10. The increase of bushes at the expense of grasses

REDUCE
YOUR CARBON
FOOTPRINT



In order to succeed in efforts of mitigation, individuals and societies should receive education on climate change and its effects on the environment. Together, Namibians can reduce the impact of climate change on the environment.

GREEN CITY CONCEPT

What is a green city?

Why green city?

Today, more than half of the world's population lives in cities. As the urban population grows and the effects of climate change worsen, our cities have to adapt. Cities need to accelerate their transition to a cleaner, healthier, and more economically viable future through improvements in efficiency, investments in renewable technology, and regulation reform.

These large communities provide both challenges and opportunities for environmentally-conscious developers, and there are distinct advantages to further defining and working towards the goals of sustainable cities.

What is it?

These concerns gave birth to the idea of green cities. Best described as a loose association of cities focused on sustainability, the emerging "green cities movement" encompasses thousands of urban areas around the world all striving to lessen their environmental impacts by reducing waste, expanding recycling, lowering emissions, increasing housing density while expanding open space, and encouraging the development of sustainable local businesses. Over the years, Namibia has experienced an increase in urbanisation, which is expected to increase even further.

Is it relevant to Namibia?

This places more pressure on the environment as more land is cleared for creating space for people.

From 1990 to present, most urban/towns in Namibia have seen an increase in urbanisation of up to 100 %. This is despite government having insufficient resources to make land available for the growing urban population.

This has led to the birth of informal settlements that have developed recently after independence such as Havana, 7de and 8ste Laan in Windhoek, 5 rand in Okahandja and DRC in Otjiwarongo. This is similar to many cities country wide. This is because the pop-

ulation is growing faster in the absence of enough resources to deliver effective services such as water, electricity, sewage and waste management.

Therefore those settlements are associated with stinky drainage systems, lack of water and electricity and rubbish. Due to the threats in our urban and town centres, Namibia needs to adopt the concept of green cities to tackle most of the problems hence the concept aims to improve livelihoods in these centres.

Activity:

Using the information you know about green cities, create your own green town/ plan of what should be done to make your town/ village green. You can either write a short essay or draw a plan on how your city/town/village can adopt a green city plan on a blank sheet of paper. This activity can be done by individuals or small groups with each person having a role in the success of the plan to make your city green.



COPING WITH CLIMATE CHALLENGE

Adapting to the impacts of climate change

In Namibia, agriculture is one of the fields that is mostly affected by climate change. This is due to the majority of our population's dependence on agriculture as the basis of their daily income. Decreasing water availability has already resulted in harvest losses and degraded soils. These issues are most likely to increase. Agricultural practices must be adapted to the changing conditions for conserving our valuable soils.

Other than reducing our emission of greenhouse gases by developing new technologies in green cities, humans also need to develop strategies to cope with the current impacts of climate change. Even if we froze all our greenhouse gas emissions today sea-level rise, floods, and droughts are but some of the inevitable consequences for some places. That is why it is vitally important for people to get educated on the subject and put aside all cultural, religious, political and preferential differences for the sake of humanity and the planet we share.

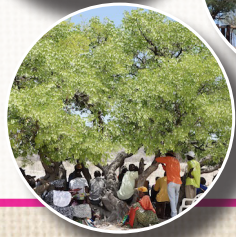
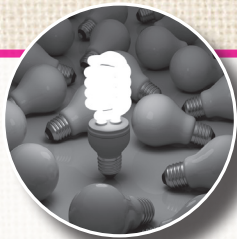
This process of adapting to the effects of climate change already taking place or predicted to take place is called climate change adaptation. It is necessary because we need to reduce the impact of climate change by developing new innovative ways and measures to adapt our farming techniques to reduce losses of crops and livestock.

Examples of adaptation Projects include:

- Installing protective and/or resilient technologies and materials in properties that are prone to flooding
- Changing to drought tolerant crop varieties
- Rainwater storage to deal with more frequent flooding and heavier rainfall
- Changing to water permeable pavements, adding water-buffering vegetation, adding underground storage tanks, subsidizing household rain barrels
- Reducing paved areas to deal with rainwater and heat
- Requiring waterfront properties to have higher foundations
- Raising pumps at wastewater treatment plants
- Surveying local vulnerabilities, raising public awareness, and making climate change-specific planning tools like future flood maps
- Incentivizing lighter-coloured roofs to reduce the heat island effect
- Installing devices to prevent seawater from back flowing into storm drains
- Installing better flood defences, such as sea walls and increased pumping capacity
- Raising street levels to prevent flooding
- Protecting the water supply from contamination

Activity:

The difference between mitigation and adaptation. Link the word to the picture. The aim of the game is to make sure you can differentiate between climate change mitigation and adaptation.



mitigation

adaptation



MEETING THE CLIMATE CHALLENGES

In order to meet the climate challenges Namibia is facing (and predicted impacts), we need to not only develop technologies and adaptation techniques but also work together for the common future because climate change is a multi-stakeholder challenge. The challenges and impacts that are occurring and expected to occur are global, continental, subcontinental, national, regional and even significant at the household level. Therefore, to meet the climate challenge Namibia needs to involve all stakeholders who are affected by climate change such as farmers and conservationists, health practitioners, architectand engineers, teachers and educators, decision makers and politicians and other fractions of society

Roles of different career options and professions in combating climate change

Nurses/Doctors

Develop new technologies for diseases related to climate change.
Promote walking and cycling as part of healthy living, and reduce fumes from cars. Conduct health and well-being awareness campaigns in communities.

Farmers

Diversified farming (mixed farming) to avoid a total loss due to unpredictable weather. Farm with adaptive breeds to ensure maximum output. Develop new farming techniques which can withstand vairiability

Politician

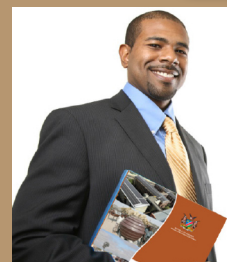
Advocate for laws and policies that promote sustainable living
Educate the nation about climate change.
Sign petitions for climate change mitigation.

Business person

Turn your offices into green offices.
Use renewable energies for your businesses operational functions.
Be committed to your corporate responsibility and invest in environmental friendly projects.

Architecture

Design green buildings.
Design cities to avoid urban sprawls.
Design buildings to avoid heat islands in cities.



Activity:

Think of other professions. How can they contribute to the fight against climate change?

HANDS ON TAKING ACTION

Namibia has fought the war of liberation and won, however, the war against climate change is even fiercer. This war does not discriminate against skin colour, race, religion or recognise borders.

Towards this end, Namibia has therefore internationally ratified certain treaties that fight to reduce and adapt against the impacts of climate change. These treaties and convention include the UN Convention on Biological Diversity, UN Framework Convention on Climate Change, UN Convention on Combating Desertification and the Stockholm Convention on Persistent Organic Pollutants.

In addition, on May the 25th, countries around the world adopted a set of goals to end poverty, protect the planet and ensure prosperity for all as part of the Sustainable Development Goals (SDG). Each goal has specific targets to be achieved in a period of 15 years. Namibia is no exception to this and has also adopted these goals.

At both regional and national levels Namibia has made some significance achievements in terms of laws and policies to fight the war against biodiversity loss and climate change. First off, Namibia is one of the few countries in the world to include the concept of sustainable development in its constitution (Article 95 stresses the importance of the "maintenance of ecosystems, essential ecological processes and biological diversity of Namibia and utilization of living natural resources on a sustainable basis for the benefit of the Namibians, both present and future").

National policy and legislation for the protection of biological diversity and to reduce climate change effects.

1. National Climate Change Policy for Namibia (2010),
2. Environmental Management Act (2007),
3. National Land Use Planning Policy (2002),
4. Namibia's Drought Policy and Strategy (1997),
5. CBNRM policy (1996)
6. National Agriculture Policy (1995) amongst others.

The foundation for these policies lies in Namibia's Green Plan (1992) and vision 2030 which aims to see Namibia as a developed nation by 2030.

We each have to think beyond our own direct operations and fields of activity. We live in an interconnected world and our futures are inextricably linked. So we need to explore and establish dynamic partnerships that explicitly expand our boundaries, particularly at the national and local levels where the necessary flexibility allows us to address locally relevant issues. Actually, no one can do it alone so leaving no one behind is the right motto for our efforts.



SUSTAINABLE DEVELOPMENT GOALS



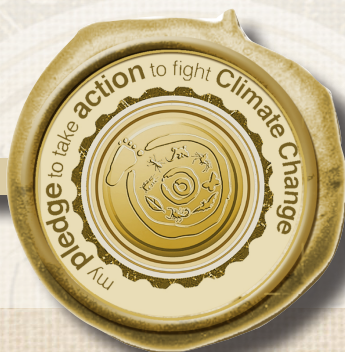


My pledge to take action to fight Climate Change

I _____, pledge to fight the war against climate change nationally, regionally and globally. I pledge to learn more and share what I learn about climate change with my friends, family and colleagues. I pledge to start living a sustainable livelihood that will ensure the peaceful existence of future generations. I pledge to contribute to decrease my carbon footprint. I pledge to support government policies that will assist in climate change and its impacts on societies. In fact I pledge to share my knowledge and understanding of climate change with anyone who has time and dares to listen to me. As a crew member on spaceship earth, I pledge to be a responsible citizen of this ship and contribute my fair share of work to the well-being and improved quality of life on board this ship.

Signed at _____ on the ____ of _____ 20____

Signature: _____ Witness: _____



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