Local Authorities Awareness Workshop on Climate Change and Decision-Making

6-7th June 2019 | Protea Furstenhof , Windhoek, Namibia

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SUMMARY

One of FRACTAL's main objective is to contribute towards decision-making for resilient development pathways. Local authorities play a major role in in mitigating the causes of climate change and adapting to predicted risks through local decision-making platforms and local policy developments. In order to combat climate change it is agreed that cities alone cannot work in silo because climate change is a shared phenomenon. As such this workshop was important to create a platform for the city to share its experiences and learn from other local authorities at the same time. The engagement between all local authorities was deemed necessary in order to promote further understanding on shared issues related to climate change while pronouncing the country's vulnerability to the impacts of climate change.

Recognizing the importance of local government in the fight against climate change, a workshop with local authorities was set up in order to discuss possible mitigation, adaptation and disaster risk reduction methods necessary to protect not only the city but also local communities too. The workshop was prepared to help local authorities to initiate thinking on how they can become climate resilient communities in the event of extreme weather conditions.

This workshop aimed to bring constructive and learning ideas among local authorities including the city of Windhoek through engagement and sharing of experiences between one another. This report also contains summaries of the presentations given and outcomes of the learning activities carried out over the two days.

In summary, the workshop was a success. It brought together local authorities from various town to share, engage and learn from the experiences of one another. Although only three representatives from ten different local authorities showed up, their deliberations, experiences and engagement probed further discussions which was beneficial in helping them develop climate sensitive decision-making processes. The workshop fully engaged all local authorities on the discussions of climate related issues such as adaptation, mitigation and disaster risk reduction. We are convinced that the information, experiences and engagements have imparted some good habits of thinking around how local government can adapt effectively to the risks posed by climate change and develop action plans to address these challenges.

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INTRODUCTION AND BACKGROUND TO THE WORKSHOP REPORT

Climate change is here and the earth is changing. Global annual temperatures are projected to continue rising, resulting in changes in weather patterns such as droughts, storms, floods, rising sea levels for Namibia. The extent of changes is highly dependent on the global efforts to minimise greenhouse gas emissions. Cities' decision-makers, including local governments, need to understand how our climate might change and be best prepared for these changes. Climate change impacts are already being felt at both national and regional levels. As such, actions at city and/or local level are important in order to minimise disasters and risks. The Future Resilience for African Cities and Lands (FRACTAL) Project saw fit to invite other local authorities in Namibia to learn, engage and share their experiences on how they are dealing with the issue of climate change at a local level. Furthermore, through learning, engaging and sharing information local authorities will be able to take better actions in adapting to climate changes.

Namibia has developed the National Climate Change Policy in 2011 and the National Climate Change Strategy and Action Plan 2013-2020 in recognition of the fact that climate change is affecting Namibia. The local authorities (municipality/town council) have been listed as key stakeholders in implementing climate change actions, as they are equally responsible to change their way of doing things in response to a changing climate. Additionally, local authorities are required to assess the risks they face and take actions within their community in order to reduce vulnerability.

Towards the end of the FRACTAL Project, on 6-7 June 2019, an awareness workshop was held for local authorities focussed on awareness on climate change and decision-making. The aim of this workshop was to learn on what local authorities are doing and the efforts they are making in dealing with the issues of climate change. In addition, the workshop aimed to create a learning experience for both the City of Windhoek and other local authorities on how they tackle climate related issues given the fact that they share similar challenges. The design of the workshop was directed to root out challenges local government face through their presentations and how they can develop climate friendly decisions and action plans and raise awareness within their communities. The workshop sessions were also important to increase understanding in terms of terminology and language used in relation to climate change.

It was deemed that by having a good understanding and background knowledge of climate change and where Namibia stand in terms of vulnerability as a country, local authorities will be able to become climate resilient communities in the event of extreme weather conditions. Furthermore, it is believed that when local authorities have supportive structures, a good information base and effective partnership they are able to make effective decisions that are climate change driven. The sessions hoped that local authorities' representatives will harness the relationships between them and their local institutions in order to maximize interaction, engagement and effort in combating the impacts of climate change. This document serves as a report from the Local Authorities Awareness Workshop on Climate Change and Decision-Making, and includes the deliberations, discussions and presentations from respective local authorities, FRACTAL team, City of Windhoek and the Ministry of Environment and Tourism.

WORKSHOP PROCESS AND OUTCOMES

In this section, proceedings are described based on the workshop programme (Annexure 2).

Day One

1. Opening and welcoming

Mr. Olavi Makuti, Environmental Management Officer, Health and Environment Services Division, City of Windhoek

Mr. Makuti started off by noting that climate change is a serious issue all over the world and Namibia is no exception. He indicated that Namibia is most affected because of its aridity. The country has been experiencing changes in rainfall patterns and droughts have been reoccurring. Mr. Makuti further indicated that in the past urban areas were not fully involved in the issues pertaining to climate change, however people have realised that solutions to climate changes lies within the cities/towns as they are the main emitters of greenhouse gases.

Mr. Makuti stated that the City of Windhoek (CoW) has been an active participant in combating issues related to climate change and it is lucky to have been affiliated with the FRACTAL project that aims to deal with climate change issues and decision-making processes. Through FRACTAL the city has been able to move forward with their climate response programmes, workshops were also implemented and training was provided to the city decision-makers i.e. Councillors and Strategic Executives. Mr. Makuti mentioned that climate change is a leadership issue, if leaders do not have the buy in, necessary resources cannot be availed to implement climate change strategies and actions. Mr. Makuti noted that the CoW is faced with the issue of urbanization and about 30% of the city's population lives in informal settlements. This exert a heavy burden on the city to provide efficient and sufficient municipal services. The city is also affected with water scarcity and this could get worse due to trending urbanization.

Mr. Makuti thus clearly indicated that, as a result of these issues the city was forced to start with a programme that dealt with climate change issues. In that case, the FRACTAL project has made it possible for the city to learn a lot of lessons and so the city thought it would be beneficial to share their experience with all local authorities as they are likely face the same challenges the city is facing. Mr. Makuti was disappointed that only three of the ten local authorities managed to attend this important workshop. Mr. Makuti concluded with hoped that the workshop platform will create a learning environment for both the CoW and other local authorities.

2. Introduction of participants and energizer

Prof. John Mfune, Head of Biological Sciences Department and FRACTAL Principal Investigator in Windhoek, University of Namibia

Prof. Mfune allowed all participants to introduce themselves and which town council or municipality they represented. As a relaxing exercise and an ice breaker all participants were given a blank paper and asked to fold it in half. Prof. Mfune further instructed to tear the paper in different places following careful instructions. When done, everyone was asked to show their paper and only a pair had similar patterns as compared to the rest. Prof Mfune asked the participants why they thought there were differences if the instructions given were the same for everyone. All participants agreed that it was because people mostly think differently or interpret situations differently despite the instructions given to them.

Prof. Mfune explained that the exercise was like a common problem we all face e.g. climate change and the manner in which people deals with it differs. Prof. Mfune further indicated that although we might be faced with similar challenges, we often respond to them differently based on our own understanding and environments. Prof Mfune alluded that it is therefore important that everyone in their own sphere of environment and atmosphere deal with challenges that speak to them in their own way. The moral of the exercise was to show the participants that people think differently, and although they are often faced with similar challenges they respond to them differently. Prof. Mfune concluded by urging all participants to think out of the box and use the exercise as a mind opener when they are dealing with the issues of climate change.

3. Introduction to Climate Change

Ms. Kornelia Iipinge, Windhoek Embedded Research for FRACTAL Project, University of Namibia

In order to set the scene and ensure participants understood climate change terminologies, impacts and possible climate change finance, Ms Iipinge gave a presentation on behalf of the Ministry of Environment and Tourism as prepared by Mr. Paulus Ashili. Ms. Iipinge begin to set out the difference between weather, climate, and global warming. She explained that global warming is caused by natural and anthropogenic causes for which we are all equally responsible. Ms. Iipinge further went on to show that although we are all responsible for greenhouse gases emissions, some countries are more responsible compared to some and those that are mainly responsible suffer less impacts as compared to the least emitters. Given this scenario, global efforts were then initiated to combat climate change such as: (i) United Nations Framework Convention on Climate Change (UNFCCC) which was established in 1992 to stabilize emissions to acceptable levels to prevent dangerous anthropogenic interference with the climate system. (ii) Kyoto protocol which was established in 1997 to support the UNFCCC to legally bind developing countries to emission reduction targets. This protocol will be replaced by the Paris Climate agreement.

Ms. Iipinge further noted that Namibians realised that climate change impacts are severe and diverse. Although the country has the lowest contribution to greenhouse gas emissions it is more vulnerable. The country has experienced a rise in annual temperatures over the past decades and changes in rainfall patterns – in particular an increase in the frequency of droughts and floods. Ms Iipinge indicated that due to these impacts Namibia has intensified its involvement in combating climate change through different tools such as the National Climate Change Strategy and Action Plan, the National Policy on Climate Change, the National Climate Change Committee, the Solar Revolving Fund by the Ministry of Mines and Energy, among others.

To sensitize the topic, the participants were shown how climate change has already affected different sectors in Namibia. The effects on the various sectors are shown in the table below.

Table 1: Impacts of climate change to various Sectors in Namibia

Sector	**Impacts**
Water	- Reduced fresh water availability in dams due to high evaporation rates - Reduction in aquifer recharge by 30-70% and water levels - 25% reduction in flow rate in perennial rivers.
Agriculture	- Reduction in productivity of traditional crops - Reduction in capacity of rangelands for livestock
Biodiversity and tourisms	- Significant increase in size of arid land areas - Damage to important ecosystems and related potential risk of reduction in tourisms.
Socio-economic	- Reduction in food security particularly for rural poor - Adverse impacts on Namibia's Gross Domestic Product.
Health	- Increase likelihood of diseases, especially Malaria, Cholera in flooded areas - Triple vulnerability of HIV/AIDS sufferer due to adverse climate conditions, poor health and associated economic impacts
Coastal	- Damage to property and infrastructure from increased sea levels and storm surges - Changes in sea temperature and acidity leading to reduced fish populations.
Energy	- Low energy production at the Ruacana hydroelectric power plant due to reduced flow rates in the Kunene River. - Increase need and opportunity to invest in renewable energy as a means to mitigate climate change.

Ms. Iipinge further went on to say that these impacts are further exacerbated by multiple factors such as limited financial resources for adaptation and poor climate proof infrastructures to mitigate climate change impacts. She also indicated that because the majority of the country's population is dependent on rainfall fed

agricultural crops it puts the population in a vulnerable state during low or no rainfall years. To close off, Ms. Iipinge urged local authorities to make use of available platforms such as the Green Climate Fund in areas of adaptation to promote livelihoods within their communities. Ms. Iipinge also indicated that local authorities should be well on top of climate information and use this to create awareness within their communities and environments.

4. Overview of FRACTAL project in Windhoek

Prof. John Mfune, Head of Biological Sciences Department and FRACTAL Principal Investigator in Windhoek, University of Namibia

Prof. Mfune shared with the participants the details of the FRACTAL project, why the project is running, where it is taking place, the activities that have taken place and the way forward. He began stating that climate change is here to stay, and although some people do not believe it, the presence and impacts of climate change have been felt. Prof Mfune indicated that from a scientific perspective a lot of research has been done and as such the reality and presence of climate change has been established and it is felt all over the world.

He noted that at the international level the intergovernmental panel on climate change established in 1988 is responsible for providing scientific guidance to the UNFCCC to ensure that all decisions are made taking into consideration scientific research. FRACTAL was then developed under Sustainable Development Goal (SDG) 13 that aims at taking urgent actions to tackle climate change and its impacts and is funded by the United Kingdom (UK) Department for International Development (DFID) and Natural Environmental Research Council (NERC). Through the commitment from the UK government, Namibia and other African countries have benefited from funds that allowed climate change information to be integrated into developmental decision-making and that is how FRACTAL was born. Prof Mfune indicated that FRACTAL is run in different countries where a city is paired with a local university. Windhoek is a tier one beneficiary.

Unpacking what FRACTAL is addressing in Windhoek, Prof Mfune made it clear to the participants that there are a lot of complexities within our towns and in the manner in which we handle climate related issues. He indicated that cities are currently crowded with challenging issues pertaining to decision-making, such as planning, infrastructure, informal settlements, urbanization, etc. As such, the project seeks to address the issues within the decision-making context within which development is taking place. Prof Mfune agrees that although cities have multiple stressors related to climate and non-climate related issues the city's chief executives should always consider climate information in their decision-making processes.

The FRACTAL project was thus developed to address the following: (i) To advance scientific knowledge on a regional scale; (ii) To enhance knowledge on how to integrate regional climate information into decision-making through collaborative city learning labs and dialogues; and (iii) To contribute towards decision-making for resilient development pathways.

Prof. Mfune indicated that the city is undergoing continuing development (both in the central business area and the periphery of the city) and with high urbanization the city's virgin lands will be prone to deforestation due to high energy demands (firewood). FRACTAL has therefore participated in issues of governance, policies, data collection through baseline information to assess climate impacts on the city, and has offered training and capacity building.

Prof Mfune shared some activities that the project has done to try and address issues of climate change:

1. In March 2017 FRACTAL hosted consultative collaborative discussions/dialogues (learning labs). These discussions were attended by multiple stakeholders to discuss and share issues of concern related to climate change and climate change information. At this platform two critical issues were identified which formed the basic backbone for the activities, which FRACTAL has been involved in. Identified issues were: water insecurities within the city and inadequate services to informal settlements (sanitation and energy provision). At the same platform it was also agreed that councillors are important decision makers. As such, a second workshop was held that invited councillors to look at climate change and decision-making awareness.

2. A climate change and decision-making awareness workshop was held to sensitize city councillors to the climate change issue. It was agreed that councillors needed to learn and engage with issues related to climate change. At the workshop councillors were in agreement that they needed to study and understand environment and related policies. They also felt that it was important for them to be involved in the conceptualization and development of environmental related policies. There, they also indicated that they needed simplified versions of climate related information for ease of understanding and involvement. Additionally, because water security was further identified as a burning issue, research into governance issues, water supply and demand and urbanization was then carried out. The research aimed to see the effects of drought in Windhoek and the central parts of Namibia, see how this affects water supply to the city, and explore possibilities to prevent it. Other research was carried out to look at the relationship between water supply and livelihoods. A study on Ujams wastewater treatment plant was carried out and another one on energy provision in informal settlements. These research topics were identified at the first learning lab.

3. The FRACTAL project also recognised that it is important to have a two-way learning platform between cities. The FRACTAL team and some officials from the city of Windhoek have visited the Lusaka City Council. Whilst there they visited Lusaka's various water sources and they looked at some of the studies they have been involved in. The officials from Lusaka also had an opportunity to visit Windhoek and they were shown around the water reclamation plant. This exchange visit allowed both cities to identify common problems between them and how they can best tackle them using shared effort.

3. FRACTAL was involved in simplifying models used for climate predictions. This was deemed necessary as councillors agreed they needed simplified versions of climate information. Councillors and the FRACTAL team sat and simplified a few models using simple descriptions and diagrams.

4. FRACTAL recognised that city officials are involved in governing the activities of the city. Discussions on climate information, how to plan for infrastructures and how the city is governed were held. Through this the CoW Integrated Climate Change Strategy and Action Plan was drafted using themes identified through the discussions with various stakeholders.

5. The Transformation Leadership on Climate Change Training was provided for the CoW Councillors, Windhoek Constituency Councillors and CoW Strategic Executives on how to mainstream climate change in decision-making. As the City's top decision makers it was identified as important to sensitize climate change in their decision-making process.

6. The project also noticed that the youth could not be overlooked. The workshop with the CoW Junior Council was then set up in co-facilitation with the Namibian Youth Coalition on Climate Change (NYCCC). This workshop was important to create awareness and exchange ideas on how the youth is dealing with the issues of climate change.

Lastly, Prof. Mfune was pleased to share what the project has done with the participants and hoped that they will deliberate on issues of climate change and use climate information when making decisions at a local level.

5. How local authorities are addressing/responding to climate change related issues

5.1. Karibib Town Council

Mr. Siegfriedt Au-Khacb, Environmental Health Officer, Karibib Town Council

Figure 1: Mr. Au-Khacb giving his presentation on Karibib Town Council

Mr Au-Khacb started off by introducing Karibib Town in Erongo Region as a small town with about 11 000 inhabitants and with main business activities within the town being mining (Navachab Gold Mine, semi-precious stones, crystals and marbles). Mr Au-Khacb indicated that the Karibib is found in a semi desert area and it has little or no rainfall

during the year thus they source their water from boreholes and Swakoppoort Dam. Mr. Au-Khacb explained the different measures the Karibib Town Council has been undertaking in dealing with environmental and climate change impacts, in the table below.

Table 2: Karibib Town Council measures undertaken to deal with environmental and climate change impacts

Areas of focus	Measures undertaken
Water	-Intensified education talks to businesses and households in terms of car washes; watering lawns and replacing old and damaged pipes. -Promote water reuse by the marble company - Implemented 30 minute response time to pipe damages and leakages -Surveys to rehabilitate 14 boreholes to bring water security
Greenery	-Town has switched back to their native adaptive plants to reduce watering - Reduced number of lawns in town (currently have two in Karibib) -Promote native plants for decorative ideas for parks -Plan on using native plants, offcuts from marbles (for pathways) for all their recreational parks
Energy	-Has a solar plant that has a capacity to sustain the whole town.
Land	-Issued 35 plots for small scale agricultural activities. The number is kept in control to minimise damage to the environment. -Promote private farms to move away from common practices of farming with animals to farming with game or trophy hunting.
Waste management	-Have an integrated waste management that refer to Reduction, Reuse, Recycle and Recovery of waste. -Burning of waste is not allowed.
Formalization of informal settlements	- So far formalized one informal settlement and the area is provided with water, electricity and sewer service. This has minimized use of firewood and waste (which is usually burned).

5.2. Keetmanshoop Municipality

Ms. Aina Amunkete, Environmental Health Officer, Keetmanshoop Municipality

Ms. Amunkete stated that Keetmanshoop Town in Karas Region has a population of about 20,977 individuals (as per the 2011 National Census). Keetmanshoop is acknowledged and praised for its size, scope and delicately balanced ecosystems, which are home to many of the planets most exceptional natural wilderness. Keetmanshoop is also known for its extreme weathers. Keetmanshoop has been experiencing climate change challenges and these are worsened by a lack of knowledge and climate information on how to tackle these issues, as such little has been done from the

Keetmanshoop Municipality office to combat climate change. Ms. Amunkete agreed that participating in this workshop will allow her to learn from other towns on how they deal with the issues of climate change and go back and implement these actions in Keetmanshoop. Ms. Amunkete understands that there are environmental regulations in place that speak to managing environmental impacts and as such the town is in full compliance to these regulations.

Figure 2: Ms. Amunkete giving her presentation for Keetmanshoop Municipality

Ms. Amunkete explained some of the environmental and climate change mitigation measures in Keetmanshoop include:

- The fencing of the existing dumping site as well as a plan to establish a new dumping site – a plan is in place to avail a new site that will follow all required environmental regulations.
- The town has a solar plant which provides energy to the town as a way to pursue clean energy in town.
- Planting of trees in the town and surrounding areas.
- Educational sessions in schools on the importance of protecting the environment, the danger of cutting trees, and communities on how to respond and deal with the issues of climate change.
- 'Cut one, plant two' strategies.
- Promoting the 4Rs: Reduce, Reuse, Recycle and Recover
- Establishment of the recycling factory in town.
- Prohibiting illegal burning of waste.
- Formalization of the informal settlements: Ileni and Tsereres.
- Establishment of the Solar Power plants few kilometres outside Keetmanshoop.

In conclusion, Ms. Amunkete stated that Keetmanshoop Municipality recognizes the seriousness of climate change's effects on the environment and the importance of mitigating it, however, due to financial constraints and lack of information the institution is struggling to execute its expected duties when it comes to climate change.

5.3. Mariental Municipality

Mrs. Esther Kahiha-Ruzvidzo, Environmental Health Officer, Mariental Municipality

Mariental is a town with about 11,000 inhabitants and the Mariental Municipality like others also experiences climate change. Mrs Kahiha-Ruzvidzo strongly pointed out that a municipal office plays an important role as it is the direct contact point for communities and as such they ought to have the capacity to mobilize climate related information. She stated that the Mariental Municipality has constraints such as human and financial resources which are strengths for combating climate change. Mrs. Kahiha-Ruzvidzo then indicated that the workshop is a good platform to learn from other local authorities on how they deal with the issues of climate change. Mrs. Kahiha-Ruzvidzo agreed that although the Mariental Municipality does not do much currently pertaining to the issues of climate change there is a need to sensitize both the community and especially the council members to the issue as they are responsible for decision-making within the town.

Figure 3: Mrs Kahiha-Ruzvidzo giving her presentation for Mariental Municipality

Mrs. Kahiha-Ruzvidzo indicated that the Mariental Municipality has experienced flooding and this has impacted the economy of the town. This calls for effective disaster risk management and or risk reduction plans that speak to local problems. Furthermore, she indicated that there is a plan in place to manage flood related risks such as clearing reeds around the river beds to enable the free flow of water. Mrs. Kahiha-Ruzvidzo ended her presentation by stating that platform such as this gave her confidence in dealing with the issues of climate change and it has shown her the importance of integrating climate information into decision-making, especially by local government.

6. Mainstreaming climate change into decision-making

Mr. Olavi Makuti, Environmental Management Officer, Health and Environment Services Division, City of Windhoek

Mr. Makuti started the presentation by stating that the traditional manner in which we conduct our businesses will not work in the future. Therefore, as the Local Authorities' representatives they need to integrate climate information into their decision-making processes so the communities they represent can become climate resilient. Mr. Makuti gave an example of the CoW's various plans and strategies in addressing environmental and climate change issues. These are outlined in the table below.

Table 3: City of Windhoek Plans and Straggles addressing environmental and climate change issues

Policy / Plan	Key Focus Issues
Transformational Strategic Plan (2017-2022)	Central to the plan is the city's attempt to respond to climate change through development of renewable energy, alternative water supply schemes, improving land and housing delivery processes and the provision of basic services in informal settlements.
Water Management Plan	Guidelines the City of Windhoek uses 'to manage water supply and water use during drought situations. The Drought response plan points to severity indicators, response actions and response program elements.
Windhoek's Disaster Risk Management Plan	The Programme has four integral components (phases) and is based on the four phases (continuum) of Emergency and Disaster Management viz. mitigation, preparedness, response and recovery and is a philosophy and strategy for managing all hazards. Developed by City of Windhoek Disaster Management Division - Department of Community Services.
Windhoek's Strategic Environmental Assessment (SEA) Windhoek and Windhoek Townlands	The SEA was conducted to provide input into and to guide future spatial development and planning, in order to meet the requirements of Section 56 of the Environmental Management Act. It seeks to identify what areas in and around the city are potentially suitable for development, as well as which are more sensitive and thus ideally not suited for development.
Windhoek's Integrated Transportation Master Plan	It aims to realize an accessible, efficient, safe and affordable transport system for Windhoek and Namibia.
Windhoek Drought Response Plan	The Drought Response Plan outlines guidelines the City of Windhoek will use to manage water supply and water use during drought situations. The guidelines are designed to maintain the health, safety and economic vitality of the community; to avoid adverse impacts to public activity and quality of life for the community; and to consider individual customer needs as much as possible.

To explain the decision-making process in Windhoek, a case study of building Windhoek Country Club resort was used and a step by step flowchart was presented to show the participants how decisions are made at the city level. This case study was used in the session that followed on: "Business as unusual scenario".

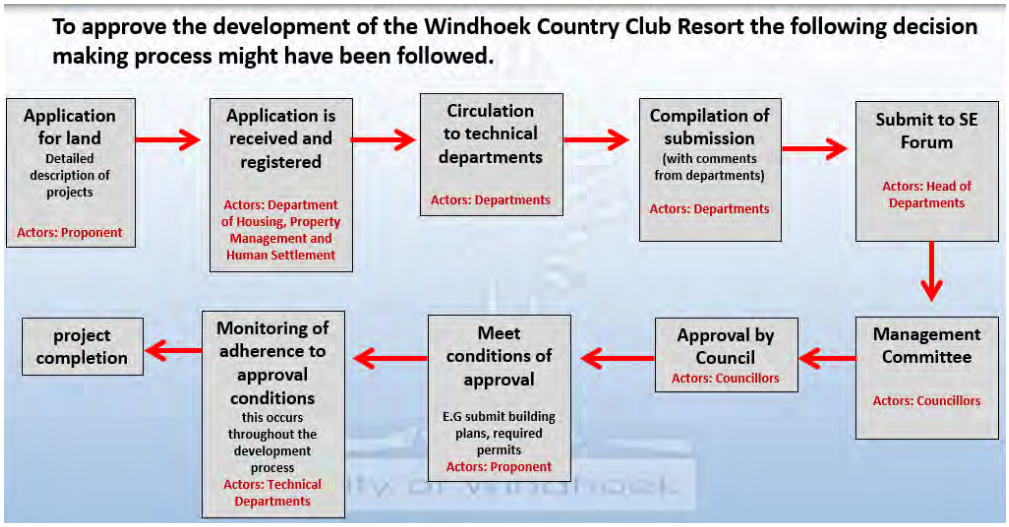


Figure 4: Development of the Windhoek Country Club's decision making process

Prof. Mfune's session was a continuation from the presentation by Mr. Makuti on decision-making business as usual. Participants were given a scenario to choose from ('Formalising an informal settlement' or 'Development of a road in the town') and they had to decide the steps they had to follow in order to make decisions. This exercise was deemed important as it gave participants the opportunity to interrogate each step. At each step the participants were required to do the following: (1) name the step; (2) name the actors involved; (3) identify the issue to be addressed; (4) information needed and (5) climate information needed? The discussions were noted down on a flip chart (see Figure 6) and presented in Table 4 below.

Figure 5: Prof. Mfune noting the discussions points on a flip chart

Table 4: Formalization of the informal settlement decision making process as business unusual

Step	Actors involved	Issue to be addressed	Information needed	Climate information needed
1. Community consultation	Town planners, city management, local leaders and community heads.	Need to formalise	Formalise / consensus	None
2. Collect baseline information	Surveyors , contractors, planners, technical departments	Baseline, data collection, social-economic assessment; technical	Baseline for planning	Flood line Runoff Rainfall data Energy
3. Planning layout plan	Engineers, town planners, community development division, environmental division	Location of sewer and land uses	Final output and layout plan	None
4. Environmental Impact Assessment	Consultant; City departments; Ministry of Environment and Tourism; community / public, Interested and Affected Parties,	Potential impacts of environment to social, economic, health etc.	Environmental clearance certificate	Rainfall and future climate projections
5. Approval of layout and Township	Minister of Rural and Urban Development (MRUD), town / city council; technical department	Approval of layout	Approval	Checklist screen climate change information in the layout plan
6. Resource mobilisation	Town / city finance; MRUD	Funding	Allocated budget line Funds	Justification of budget lines
7. Reallocation of members to reception areas (to enable implementation)				
8. Implementation				

7. Visit to the City of Windhoek's Health Risk Care Waste Facility

Mr. Eliphas Kahorere, Engineer: Treatment; Department of Infrastructure Water Technical Services; City of Windhoek

Mr. Kahorere and Ms. Ankita Ndakukamo provided an introductory presentation in the boardroom before the guided tour to the CoW's Health Risk Care Waste Facility (HRCWF). Mr. Kahorere explained that the HRCWF started operating in July 2018 and was officially inaugurated by Vice President Mr. Nangolo Mbumba. Previously the waste was going to Katutura hospital incinerator and Kupferberg Landfill.

Figure 6: City of Windhoek Health Risk Care Waste Facility's Incinerator and Autoclave

Registration and licensing: All generators of HCRW must be registered in accordance with Waste Management regulations. All transporters of HCRW must be licensed in accordance with Waste Regulations. Registration certificate is valid for 2 years. Licensing process: annually, License certificate and license discs for vehicle.

Operations of facility include:

General waste disposal: Mon- Friday including public holidays. Operating hours: 08h00 – 15h30. Treatment (ongoing): shift operations. Waste stored in cold-rooms on site prior to treatment. Waste is weighed and billed on municipal account.

Waste containment: colour coded containers. Yellow containers delivered to autoclave building. Red containers at incinerator building. Containers must be sealed using cable ties during transit. Containers have numbers and serial numbers for identification. Containers are linked to generators. Containers are washed on site.

Waste acceptance: containers are scanned and weighed. A waste manifest document is used to confirm quantity and weights. Sealed containers are placed in the cold rooms. A billing slip is given of all containers, weights, and amounts due. Clean containers are issued.

Waste treatment: Containers are removed from cold rooms to treatment area. Containers are opened, scanned and treatment information is recorded. Any discrepancies found in containers are recorded and generator informed. Containers are emptied of contents and transferred to the wash bay area. Waste is treated and a waste destruction certificate is issued upon request.

Wash bay and issuing: Containers are scanned to remove generator information. Containers are washed and stacked for re-issuing. Stacked containers are scanned and issued to site users according to demand.

Site exit: Upon receiving containers site user has to ensure the following Billing slip, Signed waste manifest document, Issued containers equivalent to what was brought in, any other relevant documentation, at exit the user will be signed out after confirmation of the above.

Figure 7: Participants having a guided tour at the Health Risk Care Waste Facility

Day Two

1. City of Windhoek's response to climate change

Mr. Olavi Makuti, Environmental Management Officer, Health and Environment Services Division, City of Windhoek

Mr. Makuti started off by saying that as a city we are vulnerable to climate changes. Due to the middle income categorization of the country, many donors have retracted their funding which has affected the country's adaptive capacity. He indicated that according to the latest Intergovernmental Panel on Climate Change (IPCC) report, Namibia will be mostly affected by climate change if the global temperature exceeds 1.5 degrees Celsius. It is against this background that the CoW and the FRACTAL project have been working hard to sensitize the issue of climate change to contribute to shared effort from other countries. Mr. Makuti indicated that the city is facing challenges related to urbanization as many people migrate to the city in search of employment and a better life. Moreover, there is a lack of investment in water infrastructures and the city relies on limited water supply as the dam levels are decreasing due to high

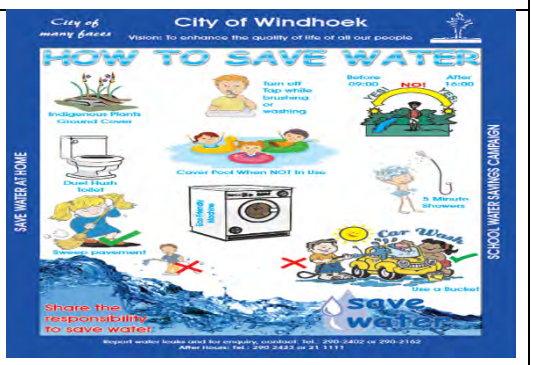
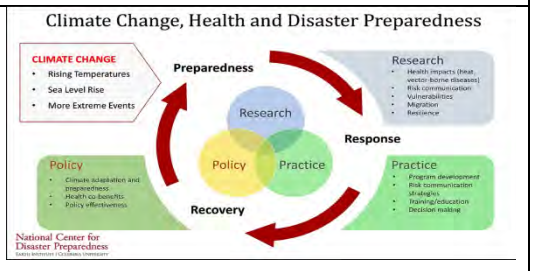
evapotranspiration. Mr. Makuti went on to say that all these challenges and issues are putting the city in a vulnerable position.

Mr. Makuti regrets that in the past years the city did not take issues of climate change seriously as such the city decided to have a formalized approach to climate change. A climate desk at the city was then formed. It is responsible for coordinating the city's response to climate change. Through this platform the city has participated in various activities aimed to sensitize climate change issues within the city including the FRACTAL project. This allowed the city to start the development of CoW Integrated Climate Change Strategy and Action Plan that speaks specifically to the city while addressing city problems.

Through the first learning lab, burning issues were identified that hamper the city in becoming climate resilient. These include the proliferation of informal settlements, water and energy issues. Identified issues formed part of the seven focal areas identified in the city's climate change strategy and action plan as shown below.

Table 5: Focal Areas of response plan for the proposed CoW-ICCSAP

Response factor	**Action plan**	
Human settlement	Formalization of informal settlements Controlling the increase in urban settlement Sanitation issues Environmental degradation	
Water Security and efficiency	Demand Management Augmentation of current supply Water reclamation Awareness raising and policies	

Renewable energy and energy efficiency	Promote the use of renewable energy CoW renewable energy policy	
Biodiversity and ecosystem goods and services	Develop biodiversity management strategies Develop policies that promote the protection of biodiversity Accord conservation status to biodiversity hot spots	
Awareness raising activities	Save water Save energy Waste reduction	
Sustainable transportation	Implementation of public transportation Integrated Transportation Master Plan	
Disaster preparedness	Disaster preparedness unit	

Healthy communities	City healthy profile Healthy city programme	

Mr. Makuti concluded his presentation by saying that the CoW-ICCSAP is a draft and all city departments were involved in the development of the document. As such, shared effort from all departments is required including the city citizens to minimise further impacts on the environment while using climate information in all their decision-making processes. He indicated that lack of funds and insufficient resources to strengthen their adaptive capacity is one of the reasons why cities and towns are not involved in climate change related efforts. Mr. Makuti then challenged all representatives to go back to their home towns and tackle climate related burning issues within their environments and capacity to contribute towards shared effort made at local, regional, national and international levels.

2. Terminology and language game

Ms. Kornelia Iipinge, Windhoek Embedded Research for FRACTAL Project, University of Namibia

Ms Iipinge as part of a game to sensitize climate change terminologies with the participants led an exercise with climate, weather, and disaster risk reduction, mitigation, adaptation and cross-cutting scenarios. During the first part of the exercise all participants were given stickers related to either climate or weather and they were asked to past them in appropriate categories. Everyone was then asked why they pasted their stickers in that particular category and the whole group had to agree. The participants realised that some terms did not fit into any of the categories so they had to put them in the middle of the two categories as they were variables.

For the second part of the game, all participants were given stickers in relation to either disaster risk reduction, cross cutting scenarios, mitigation and adaptation. The participants repeated the same thing as done in the first part of the exercise and they explained why they pasted the stickers in the categories they chose. This exercise provoked further discussions between participants and it allowed them to learn from one another during the reasoning sessions. The participants agreed that some issues belonged to at least more than two categories but this only applied to one's reasoning. Ms. Iipinge indicated that the Local Authorities' representatives deal with environment related issues on a daily basis, thus it is important for them to understand the terminology and language they are likely to encounter in their daily work environment.

3. Reflections

Ms. Saima Haukelo, Environmental Management Intern, Health and Environment Services Division, City of Windhoek

Ms. Haukelo asked participants to reflect on the two day workshop. On sticky notes participants noted down the answers to the different questions asked. See the Table below for the responses on lessons learned, what they were going to tell colleagues and possible improvements to the workshop.

Table 6: Participants reflections of the workshop

What did you enjoy most?	What are you going to tell your co-workers in your town?	What could be improved?
I enjoyed the language terminology discussions	I will tell them that about the need to concentrate on mitigation and adapt to the changes in our cities	Contact the line ministry to pass the invitation to local authorities
I enjoyed the site visit to the Health facility services and the contributions from other towns	To inform them that other town needs for ministry of Urban and rural development to take part in climate change issues in the country and for ALAN/NALAO	More local Authorities attendance and City Officials
Learning differences in the terminology used in climate change	Networking and information sharing	Improve on the organization of this workshop to encourage participation of other municipalities
The interactions between the participants , the experiences they shared , Enjoyed the workshop environment it allowed participants to express their ideas fully	Learned that it's important to include climate information into decision making -Learned that it's important to know climate change terminologies for further understanding. -Also learned that its vital to collaborate climate efforts change	-Workshop atmosphere was great I suggest that more interactions be done as people could be seating with very good innovations but platform to show this was not provided -further interactions to promote discussions and learning among participants
-Detailed insight for the structure of CoW ICCSAP -Interaction and diverse rewarding	Complementary of CoW ICCSAP on addressing outlined aspects of National Climate Change Policy and its implementation plan -Networking is a key for transportation	Motivate the importance of workshop to attract large number of participants -Buy in from local Authority
Coping strategies and measures put in place by City of Windhoek	Encourage my team & town to work on adaptation & mitigation in regards to climate change	Motivate municipalities to participate as FRACTAL and City of Windhoek cannot fight this battle alone. Well done!
The sharing of information from other town write the	The need off joining hands as the municipality to make	If all stakeholders were involved and informed about

issues of climate change	awareness to address the issue of climate change since its seriously affecting our town	this matter in order for all of us being on one foot with climate and by so doing come up with joint action plan to address the situation in Namibia
The visit to the City of Windhoek's Health Risk Care Waste Facility	We need to mainstream climate change into decision making	If there were more local authorities attending the workshop for diversification of information
Although the number of participants were less the discussions were rich and fruitful -Willingness to learn, field was very informative	That climate change is real we need to do something about it -we need to learn to continuously to be effective in dealing with climate change issues - climate change response programs need to be owned by the whole organisation	Look for alternatives on how to reach other local authorities.
People's participation , new ideas, information from presenters and individuals	-Climate change is real -We need to do something serious about it -We need to put up strategies to minimize the effect of climate change	Have more participants from other local authorities other institutions to get views

4. Closing remarks

Mr. Olavi Makuti, Environmental Management Officer, Health and Environment Services Division, City of Windhoek

Closing off the workshop Mr. Makuti thanked colleagues from Local Authorities for making time to attend the workshop. Mr Makuti said that the workshop has reemphasised his conviction that the city's success is dependent on the success of other Local Authorities and their success is equally dependent on the success of Ministry of Environment and Tourism, and the country's success is dependent on the success of Africa all together. He further agreed that cities and towns cannot live in isolation, they need to work together in combating climate change related issues. Mr. Makuti concluded that as a nation and its environmental representatives we need to aspire to learn more and engage with people in an attempt to protect our cities and towns. He hoped that the learning platforms between cities and towns will continues to allow a free flow of information and experiences between the city and various towns. Lastly, Mr. Makuti urged that town council offices cultivate relations between their local institutions in order to promote engagement and further learning platforms.

Annex 1: Attendance list

Attendance list during the Local Authorities Awareness on Climate Change and Decision Making

No	Name	Institution
1	Mr. Eliphas Kahorere	City of Windhoek –Solid Waste Management Division
2	Mr. Siegfriedt A-Khacb	Karibib Town Council
3	Ms. Kornelia Iipinge	FRACTAL Project
4	Ms. Aina Amunkete	Keetmanshoop Municipality
5	Mr. Olavi Makuti	City of Windhoek – Health and Environment Services Division
6	Ms. Saima Haukelo	City of Windhoek - Health and Environment Services Division
7	Prof. John Mfune	University of Namibia
8	Ms. Erikka Mokanya	FRACTAL Project
9	Mrs. Esther Kahiha-Ruzvidzo	Mariental Municipality
10	Ms. Nguza Siyambango	University of Namibia – Multidisciplinary Research Centre
11	Mr. Sion Shifa	Ministry of Environment and Tourism – Climate Change Unit
12	Mrs. Laura Ashipala	City of Windhoek – Department of Infrastructure, Water and Technical Services

Annex 2: Workshop programme

Agenda
Local Authorities Awareness on Climate Change and Decision Making
06-07 June 2019
Protea Furstenhof Hotel, Windhoek

Day 1: 06 June 2019, Thursday	
09:00 – 09:10	Opening remarks by City of Windhoek
09:10 – 09:40	Introduction of participants and Energizer by Prof. John Mfune
09:40 – 10:15	Introduction to climate change by Kornelia Iipinge
10:15 -10:40	Photo and Tea break
10:40 – 11:10	Overview of the FRACTAL Project by Prof. John Mfune, UNAM
11:10 – 12:10	How the local authorities are addressing / responding to climate change related issues by all local authorities
12:10 – 13:10	Mainstreaming climate change into decision making group discussion by Mr. Olavi Makuti, City of Windhoek
13:10- 14:00	Lunch
14:00 – 16:00	Site visit to the City of Windhoek's Health Risk Care Waste Facility
Day 2: 07 June 2019, Friday	
09:00 – 09:30	Re-cap of Day One
09:30 – 11:00	City of Windhoek Integrated Climate Change Strategy and Action Plan by Mr. Olavi Makuti
11:00-11:30	Tea break
11:30 – 12:25	Terminology and Language Game by Kornelia Iipinge
12:25 – 12:45	Reflections by Saima Haukelo
12:45 -13:00	Closing remarks by City of Windhoek
13:00	Lunch and Departure