Reaching out to local communities and assist them to adapt to climate change: A case study from Northern-central of Namibia

ICID+18, 2010: 2nd International Conference: Climate, Sustainability and Development in Semi-arid Regions.
Fortaleza - Ceará, Brazil, 16 – 20 August 2010

19 August 2010

Laudika Kandjinga
l.kandjinga@iecn-namibia.com
Integrated Environmental Consultants Namibia (IECN), Namibia

IECN
Integrated Environmental Consultants Namibia

National production system and projected climate change impacts in Namibia

- One of the driest country in Southern Africa and also the most sparsely populated countries in the world, in line with its naturally arid climatic conditions and environments
- Mean annual rainfall range between 25mm & 700mm across the country.
- More than **70% of Namibia's population** depends directly on subsistence agriculture.
- Climate variability is a common phenomenon with persistent droughts, unpredictable and variable rainfall & temperature the norm.

Projections for Namibia

- Namibia will become hotter throughout the year (increase in temp between 1°C - 3,5°C in summer & 1°C - 4°C in winter in the period 2046-2065).
- Namibia face absolute water scarcity by 2020.
- **Namibia's aridity is expected to:**
  - increase grazing stress, worsening vegetation, reduction of crops yield (*temporary or long term food shortage*).
  - Reduction in arable land as climate become drier and hotter, representing a challenge for combating desertification and land degradation.
- **Wet periods**: diseases, increased floods, changes in land-use patterns and soil erosion could affect larger parts of the country.
- Climate change predictions for Namibia are complicated due to extreme natural variability in arid environments.

Building adaptive capacity in rural Namibia

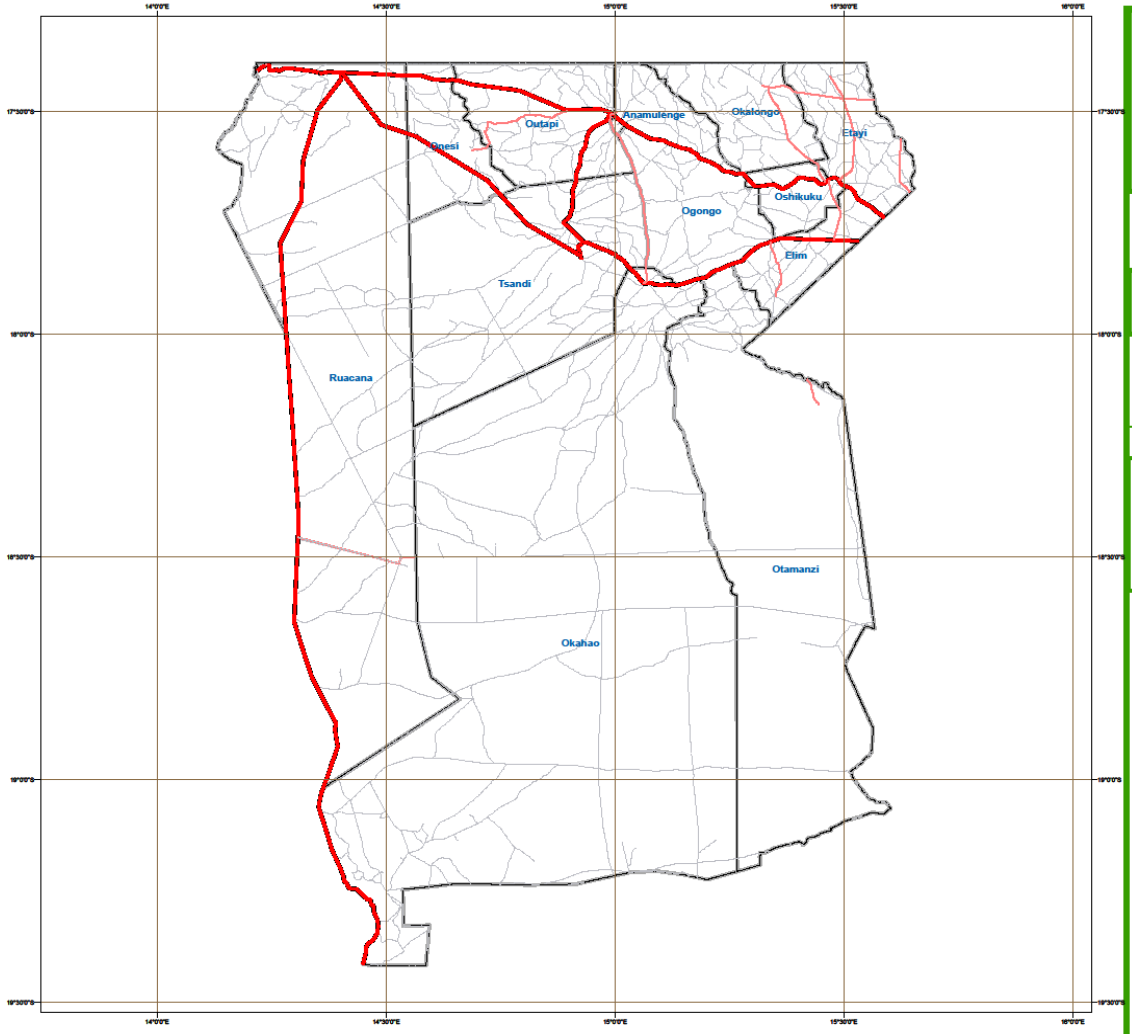
- In the anticipated effects of increasing climate change and variability on long-term agricultural productivity:
  - **Adaptive capacities** of small-holder farmers, pastoralists, and natural resource managers need to be **developed** and **strengthened as a matter of priority.**

Adapting to Climate Change through Improved Traditional Crops and Livestock (NAM-CCA) -

- The NAM-CCA pilot project is funded by Global Environmental Facility (GEF/SPA) and was incepted in North–central Namibia in 2008.
- **Aim:** to enhance the adaptive capacities of farmers, pastoralist and natural resource managers to climate change in agricultural and pastoral systems in north-central Namibia.

- **Objective:** to develop and pilot a range of coping mechanisms for reducing vulnerability of farmers/pastoralists to climate change and variability.
- One activity of the project was to **develop a CCA community toolkit for farmers and Agricultural Extension Technicians (AETs)** in the region.

OMUSATI REGION



REPUBLIC OF NAMIBIA
NATIONAL PLANNING COMMISSION
CENTRAL BUREAU OF STATISTICS

Omusati Regional Council
Private Bag 523
Outapi
Tel: 065 251019
Fax:065 251078

Legend

- Track
- Distict Road
- Main Road
- Omusati Region

Map Supplied By;
Population & Statistics
GIS Analyst
Division of Development Planning
OMUSATI REGIONAL COUNCIL

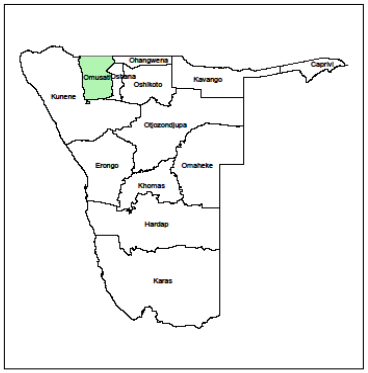
SCALE

0 3.5 7 14 21 28 Kms

1:700 000

This map was produced as per the client's request

CLIENTS:
Integrated Environmental Consultants Namibia (IECN) cc
Laudika Kandjinga
Junior Consultant
P.O. Box 86634
Eros, Windhoek, NAMIBIA
Tel: +264 (0)61 24 92 04
Fax: +264 (0)61 24 92 05
Cell: +264 (0)81 237 7378
E-mail: l.kandjinga@iecn-namibia.com
Website: www.iecn-namibia.com



Methodology

1. Participatory needs assessment

- **Field consultations - Specific questionnaires** were designed for different target groups (local vernacular & English)
- **Working sessions** conducted - Participatory Rural Appraisals (PRAs) through Questionnaire Based Surveys (QBS).
- **Focal interviews**

2. Development and verification of the toolkit

3. Implementation - through Training of Trainers

- Toolkit was introduced to AETs and local community through dedicated Training of Trainers (ToT) sessions.

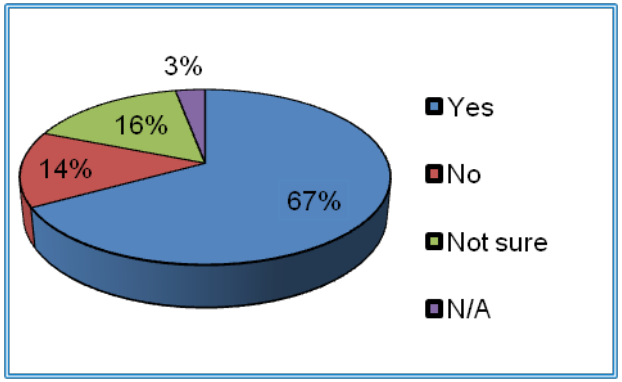
4. Community level implementation (e.g. through CBA funding) – community support and participation monitoring and evaluation (M&E) component

5. National Level up-scaling *(Commencing soon)*

RESULTS: adaptation - continuous learning and improvement

Participatory needs assessment, QBS and discussion on the draft toolkit design

Awareness of climate change in the Omusati region

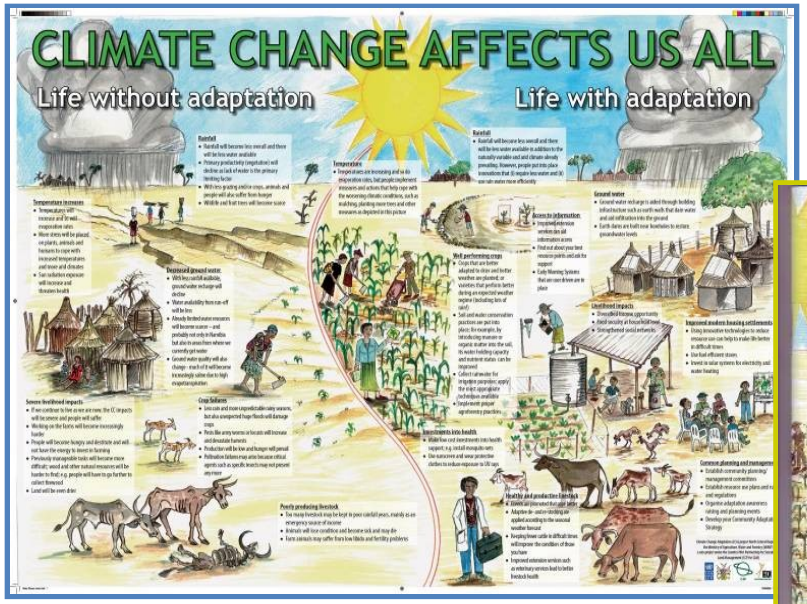


- The extent to which climate change would affect farming and farmers' livelihoods was generally not clear.
- Farmers already deal with highly variable climatic conditions and specified locally developed adaptation measures.
  - e.g. related to traditional knowledge (observations and indicators based on the environment – cues from flora and animal behaviours) and Early Warning System (EWS).

Approach to CCA community toolkit and content

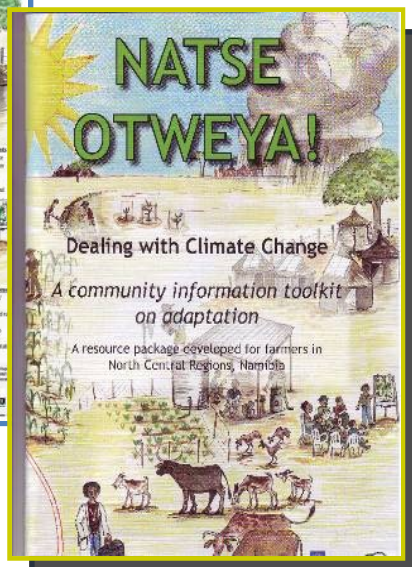
- Written information considered useful, despite radio chosen most.
- Training in the form of workshops facilitated by AETs was requested by the farmers and this led to **community planning tools** being included in the toolkit.

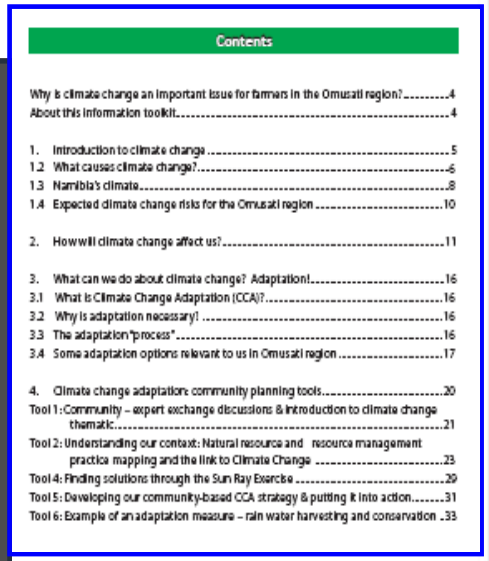
Contents



Educational Poster

Booklet





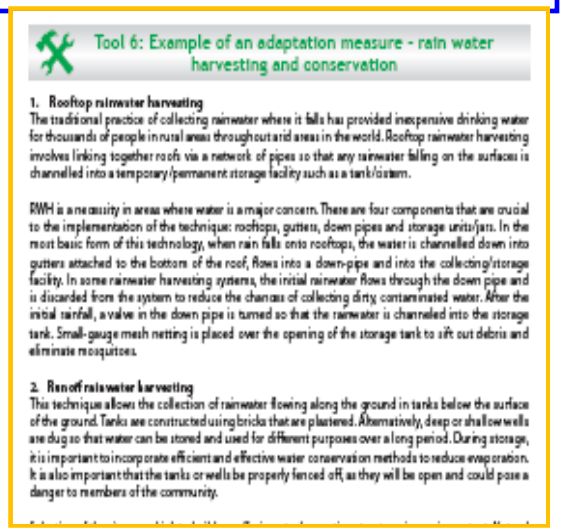
Contents

1. Background on Climate Change
2. How will climate change affect us?
3. What can we do about climate change?
4. Step-wise Community Planning Tools

Booklet Title: Natse Otweya!

Step-wise development of community CCA Strategy and CBA projects

Tool 1: Discussion on CC and CCA
Tool 2: Resource mapping in CC context
Tool 3: Root Cause Analysis
Tool 4: Sunrays solution exercise
Tool 5: Development of community CCA Strategy
Tool 6: Example of one adaptation measure: rainwater harvesting and conservation



Tool 6: Example of an adaptation measure - rain water harvesting and conservation

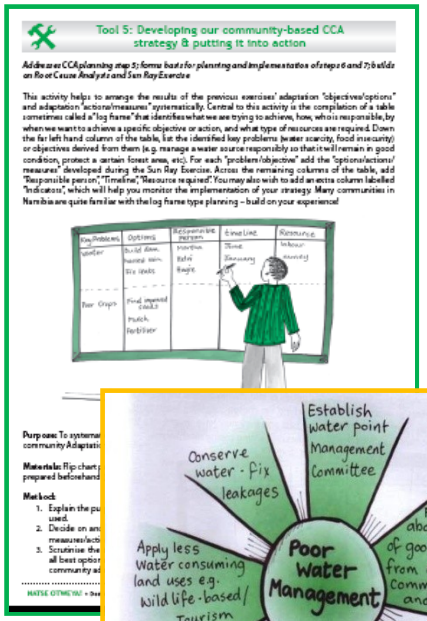
1. Rooftop rainwater harvesting

The traditional practice of collecting rainwater where it falls has provided inexpensive drinking water for thousands of people in rural areas throughout arid areas in the world. Rooftop rainwater harvesting involves linking together roofs via a network of pipes so that any rainwater falling on the surfaces is channelled into a temporary/permanent storage facility such as a tank/cistern.

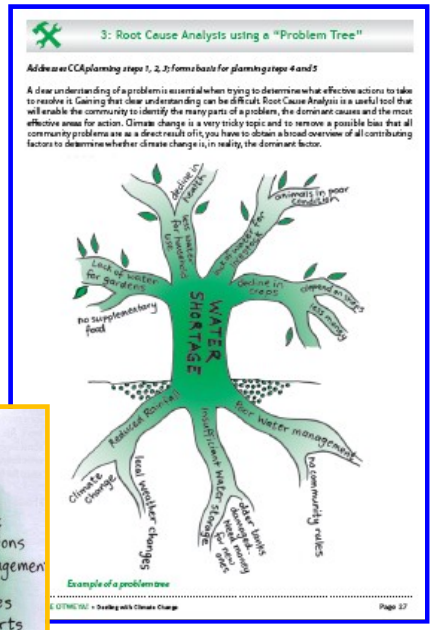
RWH is a necessity in areas where water is a major concern. There are four components that are crucial to the implementation of the technique: rooftops, gutters, down pipes and storage units/jars. In the most basic form of this technology, when rain falls onto rooftops, the water is channelled down into gutters attached to the bottom of the roof, flows into a down-pipe and into the collecting/storage facility. In some rainwater harvesting systems, the initial rainwater flows through the down pipe and is discarded from the system to reduce the chances of collecting dirty, contaminated water. After the initial rainfall, a valve in the down pipe is turned so that the rainwater is channeled into the storage tank. Small-gauge mesh netting is placed over the opening of the storage tank to sift out debris and eliminate mosquitoes.

2. Run off rain water harvesting

This technique allows the collection of rainwater flowing along the ground in tanks below the surface of the ground. Tanks are constructed using bricks that are plastered. Alternatively, deep or shallow wells are dug so that water can be stored and used for different purposes over a long period. During storage, it is important to incorporate efficient and effective water conservation methods to reduce evaporation. It is also important that the tanks or wells be properly fenced off, as they will be open and could pose a danger to members of the community.



Tool 5: Developing our community-based CCA strategy & putting it into action



- The output of the planning tools is a **Community Adaptation Plan (CAP),** which identifies priority project(s).
- Foundation for application for CBA project funding, Small Grant Programmes and other funding mechanisms.

Approach to up-scaling the toolkit beyond the pilot project

- The approach that was used in the CCA pilot project in Omusati region is planned to be replicated and up-scaled to other regions in the country through the **Africa Adaptation Programme (AAP)**.

Key bottlenecks

(a) Effective community outreach and engagement in CCA action

- Lack of resources hinders such activity. The AETs needs to reach all the communities. However, most institutions do not have the means.

(b) Strengthening extension services

- AETs represent a two-way communication/training process that improves communities' learning techniques by providing knowledge and experience to change attitudes.

(c) Investment cost of extension training and outreach

(d) Development of sustainable CCA projects and CBA funding mechanism.

- Most of the projects are driven by donor funding (good thing), however, there is always a challenge to keep those projects running when donors have pulled out or ceased funding.
- Sustainability of these kinds of projects are always questionable.

Lessons learnt

- Imperative to **consult with target groups and stakeholders** regarding climate change-related issues to produce a well designed and effective communication product.
- **Capacity needs** must be addressed, an **awareness raising, communication and implementation strategy** designed, before products are developed.
- The **production of the CCA community toolkit** is only the first step in developing a successful community outreach and engagement approach.
- **AETS are well positioned** to engage in a long-term learning and exchange process.
- **Time & investment** is needed to successfully introduce and apply the toolkit widely.
- **M&E component** to assess and provide feedback on the application of the toolkit.

OBRIGADO!!!!

Please Check the POSTER Outside!!!

Laudika Kandjinga
Namibia
l.kandjinga@iecn-namibia.com
Website: www.iecn-namibia.com

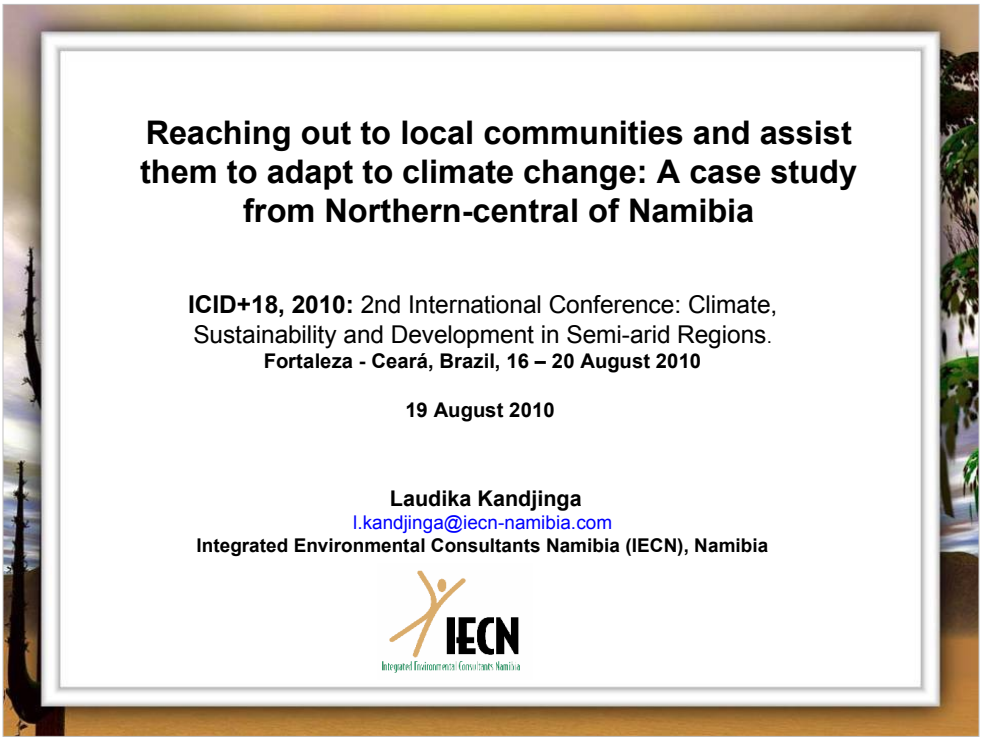
IECN
Integrated Environmental Consultants Namibia

Reaching out to local communities and assist them to adapt to climate change: A case study from Northern-central of Namibia

ICID+18, 2010: 2nd International Conference: Climate, Sustainability and Development in Semi-arid Regions.
Fortaleza - Ceará, Brazil, 16 – 20 August 2010

19 August 2010

Laudika Kandjinga
l.kandjinga@iecn-namibia.com
Integrated Environmental Consultants Namibia (IECN), Namibia



National production system and projected climate change impacts in Namibia

- One of the driest country in Southern Africa and also the most sparsely populated countries in the world, in line with its naturally arid climatic conditions and environments
- Mean annual rainfall range between 25mm & 700mm across the country.
- More than **70% of Namibia's population** depends directly on subsistence agriculture.
- Climate variability is a common phenomenon with persistent droughts, unpredictable and variable rainfall & temperature the norm.

Projections for Namibia

- Namibia will become hotter throughout the year (increase in temp between 1°C - 3,5°C in summer & 1°C - 4°C in winter in the period 2046-2065).
- Namibia face absolute water scarcity by 2020.
- **Namibia's aridity is expected to:**
  - increase grazing stress, worsening vegetation, reduction of crops yield (*temporary or long term food shortage*).
  - Reduction in arable land as climate become drier and hotter, representing a challenge for combating desertification and land degradation.
- **Wet periods**: diseases, increased floods, changes in land-use patterns and soil erosion could affect larger parts of the country.
- Climate change predictions for Namibia are complicated due to extreme natural variability in arid environments.

3

Building adaptive capacity in rural Namibia

- In the anticipated effects of increasing climate change and variability on long-term agricultural productivity:
  - **Adaptive capacities** of small-holder farmers, pastoralists, and natural resource managers need to be **developed** and **strengthened as a matter of priority.**

4

Edit the info n red

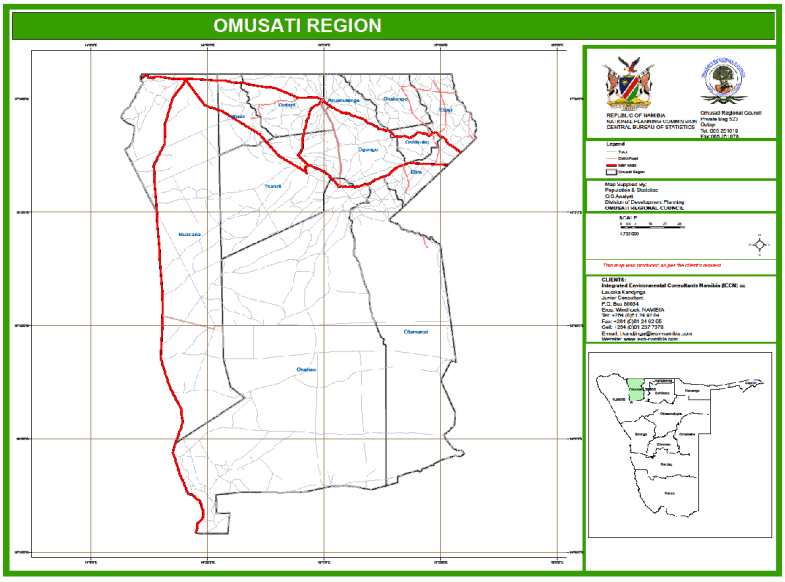
Adapting to Climate Change through Improved Traditional Crops and Livestock (NAM-CCA) -

- The NAM-CCA pilot project is funded by Global Environmental Facility (GEF/SPA) and was incepted in North–central Namibia in 2008.
- **Aim:** to enhance the adaptive capacities of farmers, pastoralist and natural resource managers to climate change in agricultural and pastoral systems in north-central Namibia.

- **Objective:** to develop and pilot a range of coping mechanisms for reducing vulnerability of farmers/pastoralists to climate change and variability.
- One activity of the project was to **develop a CCA community toolkit for farmers and Agricultural Extension Technicians (AETs)** in the region.

5

OMUSATI REGION



Methodology

1. Participatory needs assessment

- **Field consultations - Specific questionnaires** were designed for different target groups (local vernacular & English)
- **Working sessions** conducted - Participatory Rural Appraisals (PRAs) through Questionnaire Based Surveys (QBS).
- **Focal interviews**

2. Development and verification of the toolkit

3. Implementation - through Training of Trainers

- Toolkit was introduced to AETs and local community through dedicated Training of Trainers (ToT) sessions.

4. Community level implementation (e.g. through CBA funding) – community support and participation monitoring and evaluation (M&E) component

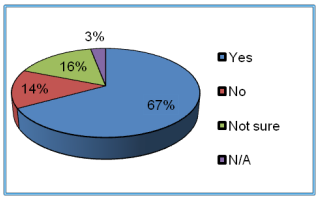
5. National Level up-scaling *(Commencing soon)*

RESULTS: adaptation - continuous learning and improvement

8

Participatory needs assessment, QBS and discussion on the draft toolkit design

Awareness of climate change in the Omusati region

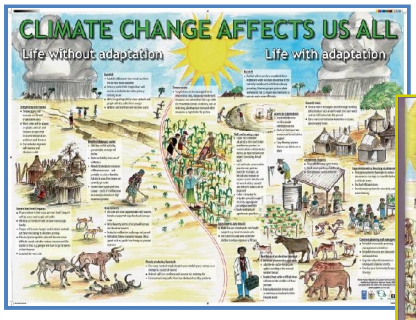


- The extent to which climate change would affect farming and farmers' livelihoods was generally not clear.
- Farmers already deal with highly variable climatic conditions and specified locally developed adaptation measures.
  - e.g. related to traditional knowledge (observations and indicators based on the environment – cues from flora and animal behaviours) and Early Warning System (EWS).

Approach to CCA community toolkit and content

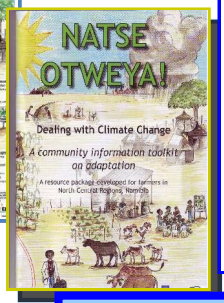
- Written information considered useful, despite radio chosen most.
- Training in the form of workshops facilitated by AETs was requested by the farmers and this led to **community planning tools** being included in the toolkit.

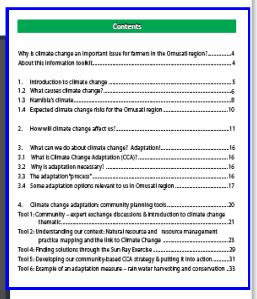
Contents



Educational Poster

Booklet




Contents

Why is climate change an important issue for farmers in the Omusati region? 4
About this information toolkit 4

1. Introduction to climate change 5
1.2 What causes climate change? 6
1.3 Namibia's climate 8
1.4 Expected climate change risks for the Omusati region 10

2. How will climate change affect us? 11

3. What can we do about climate change? Adaptation! 16
3.1 What is Climate Change Adaptation (CCA)? 16
3.2 Why is adaptation necessary? 16
3.3 The adaptation "process" 16
3.4 Some adaptation options relevant to us in Omusati region 17

4. Climate change adaptation: community planning tools 20
Tool 1: Community – expert exchange discussions & introduction to climate change thematic 21
Tool 2: Understanding our context: Natural resource and resource management practice mapping and the link to Climate Change 28
Tool 4: Finding solutions through the Sun Ray Exercise 29
Tool 5: Developing our community-based CCA strategy & putting it into action 31
Tool 6: Example of an adaptation measure – rain water harvesting and conservation ..33

1. Background on Climate Change
2. How will climate change affect us?
3. What can we do about climate change?
4. Step-wise Community Planning Tools

Booklet Title: Natse Otweya!

11

Step-wise development of community CCA Strategy and CBA projects

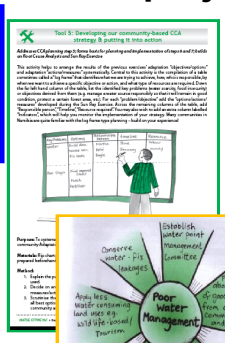
Tool 1: Discussion on CC and CCA
Tool 2: Resource mapping in CC context
Tool 3: Root Cause Analysis
Tool 4: Sunrays solution exercise
Tool 5: Development of community CCA Strategy
Tool 6: Example of one adaptation measure: rainwater harvesting and conservation

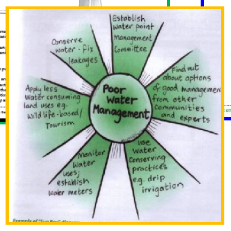

Tool 6: Exemple of an adaptation measure - rain water harvesting and conservation

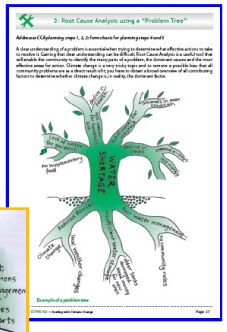
1. Rooftop rainwater harvesting
The traditional practice of collecting rainwater where it falls has provided inexpensive drinking water for thousands of people in rural areas throughout arid areas in the world. Rooftop rainwater harvesting involves linking together roofs via a network of pipes so that any rainwater falling on the surfaces is channelled into a temporary/permanent storage facility such as a tank/cistern.

RWH is a necessity in areas where water is a major concern. There are four components that are crucial to the implementation of the technique: rooftops, gutters, down pipes and storage units/jars. In the most basic form of this technology, when rain falls onto rooftops, the water is channelled down into gutters attached to the bottom of the roof, flows into a down-pipe and into the collecting/storage facility. In some rainwater harvesting systems, the initial rainwater flows through the down pipe and is discarded from the system to reduce the chances of collecting dirty, contaminated water. After the initial rainfall, a valve in the down pipe is turned so that the rainwater is channelled into the storage tank. Small-gauge mesh netting is placed over the opening of the storage tank to sift out debris and eliminate mosquitoes.

2. Runoff rainwater harvesting
This technique allows the collection of rainwater flowing along the ground in tanks below the surface of the ground. Tanks are constructed using bricks that are plastered. Alternatively, deep or shallow wells are dug so that water can be stored and used for different purposes over a long period. During storage, it is important to incorporate efficient and effective water conservation methods to reduce evaporation. It is also important that the tanks or wells be properly fenced off, as they will be open and could pose a danger to members of the community.


Tool 5: Developing our community-based CCA strategy & putting it into action

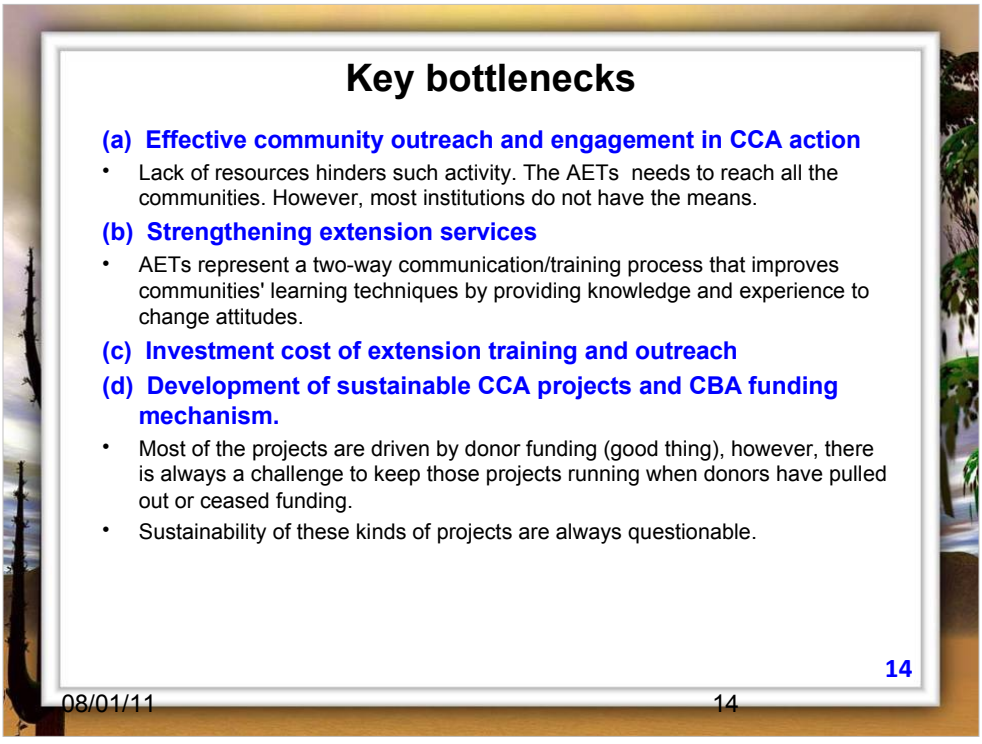




- The output of the planning tools is a **Community Adaptation Plan (CAP),** which identifies priority project(s).
- Foundation for application for CBA project funding, Small Grant Programmes and other funding mechanisms.

Approach to up-scaling the toolkit beyond the pilot project

- The approach that was used in the CCA pilot project in Omusati region is planned to be replicated and up-scaled to other regions in the country through the **Africa Adaptation Programme (AAP)**.



Important issues that will be covered in my paper and also these are some of the issues that are important toward adapting to climate change especially communities that depend on rain-fed and sensitive resources to CC

Lessons learnt

- Imperative to **consult with target groups and stakeholders** regarding climate change-related issues to produce a well designed and effective communication product.
- **Capacity needs** must be addressed, an **awareness raising**, **communication and implementation strategy** designed, before products are developed.
- The **production of the CCA community toolkit** is only the first step in developing a successful community outreach and engagement approach.
- **AETS are well positioned** to engage in a long-term learning and exchange process.
- **Time & investment** is needed to successfully introduce and apply the toolkit widely.
- **M&E component** to assess and provide feedback on the application of the toolkit.

OBRIGADO!!!!

Please Check the POSTER Outside!!!

Laudika Kandjinga
Namibia
l.kandjinga@iecn-namibia.com
Website: www.iecn-namibia.com

IECN
Integrated Environmental Consultants Namibia