Climate Technology Centre Network engagements in Namibia

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Overview of climate change in Namibia

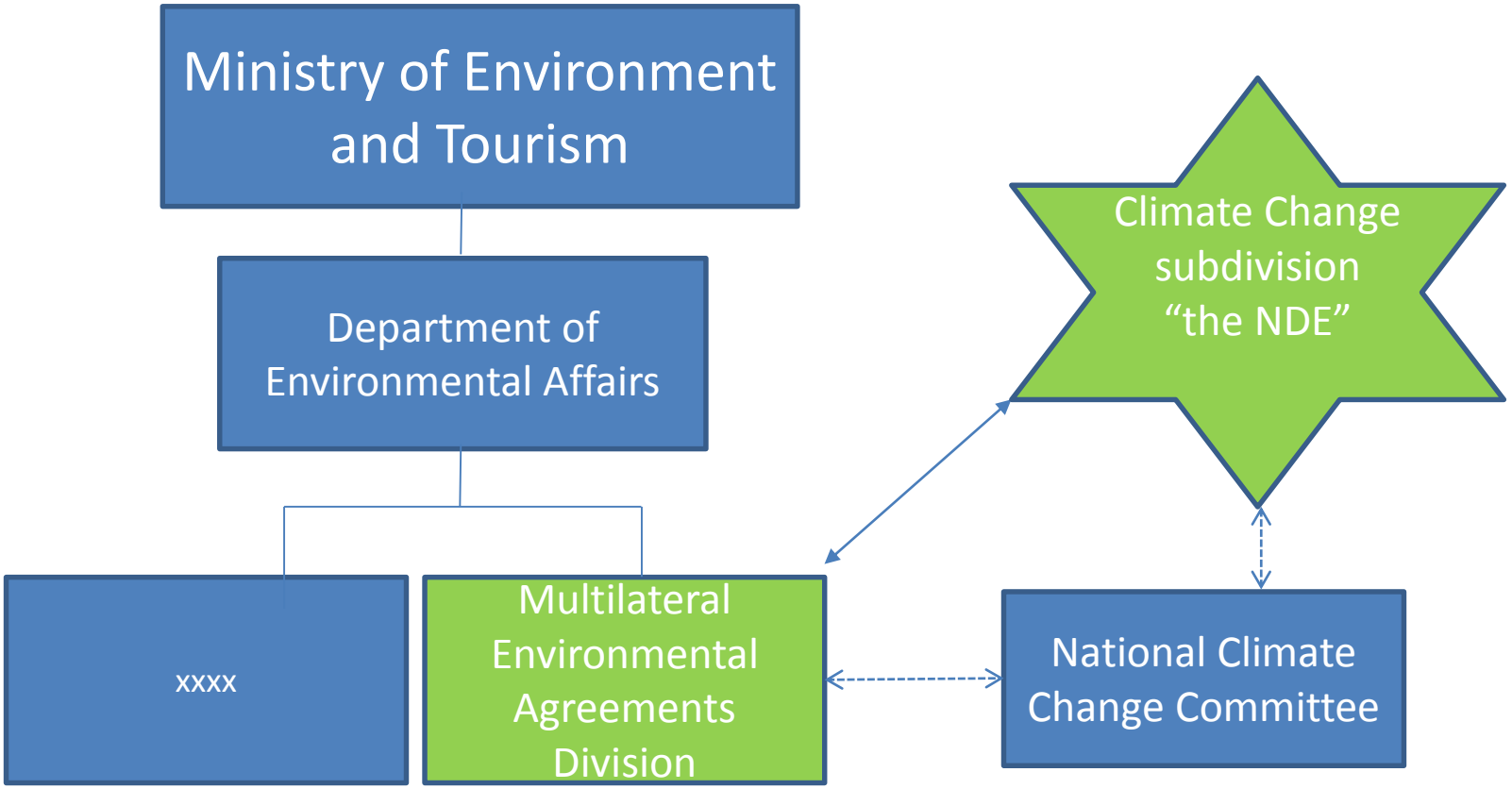
Vulnerability of Namibia to climate change (CC)

- CC is expected to worsen the highly variable climate of Namibia
- Namibia's economy is largely dependent on natural resources (diverse rangelands, agriculture, mineral deposits, ecosystems, marine fisheries, biodiversity)
- As a developing country, Namibia has least adaptive capacity due to lack of resources, skills & technology

Overview of climate change in Namibia (2)

- Climate Change predictions for Namibia:
  - Increase in temperature and evapotranspiration
  - Namibia will be drier with more rainfall variability
  - Both floods and droughts are expected to increase in frequency and intensity
  - Subsequent major disruption to the economy
  - Sea level expected to rise by 18 to 59 cm by year 2100.

Institutional arrangements - NDE



Our engagements with the CTCN

Request 1: Joint request - Green Cooling Africa Initiative (GCAI): 2014-010/REG-01

- Jointly submitted with Ghana, Mauritius and Kenya.
- Approved by the Climate Technology Centre Network (CTCN).
- Aimed to establish the necessary information (i.e. inventory) and tools (i.e. policy options), to create a shift from BAU scenario in the cooling sector to more sustainable technology options.

Request 2: Water harvesting technology (2014-017/NAM-01)

- Approved by the Climate Technology Centre Network (CTCN).
- Currently working towards completing the response plan (based on the ruthless and rigorous stakeholder consultation).

The identification and prioritization of climate change technologies to address water scarcity in Namibia

- National Development plan
- Namibian Policy on Climate Change for Namibia
- Namibian Climate Change Strategy and Action Plan
- National Drought Policy and Strategy
- National Water Policy White paper

Water scarcity technology transfer: Technology options

Tubewell/Borehole as a drought interventions for domestic water supply	A tubewell is a narrow, screened tube or casing driven into a water-bearing zone of the subsurface. The term tubewell is sometimes used synonymously with borehole. However, boreholes are more specifically defined as tubewells penetrating bedrock, with casing not extending below the interface between unconsolidated soil and bedrock. Tubewells can often be installed by hand-auguring; boreholes require a drilling method with an external power source.
Desalination	The removal of sodium chloride and other dissolved constituents from seawater, brackish waters, wastewater, or contaminated freshwater. Desalinsation can use a lot of energy, with corresponding negative impacts on climate change. However, technology innovations are enabling solar powered desalinisation at larger scales, and these opportunities will be explored through this technical assistance.
Flood hazard mapping (FHM)	Flood hazard mapping is an exercise to define those coastal areas which are at risk of flooding under extreme conditions. As such, its primary objective is to reduce the impact of coastal flooding.

Water scarcity technology transfer: Technology options

Flood proofing	The primary objective of flood-proofing is to reduce or avoid the impacts of coastal flooding upon structures. This may include elevating structures above the floodplain, employing designs and building materials which make structures more resilient to flood damage and preventing floodwaters from entering structures in the flood zone, amongst other measures.
Flood resilience for protected wells	Protected wells can include tubewells, boreholes and (hand) dug wells and can potentially provide a water supply that is highly resilient to flooding.
Flood warnings	A flood warning system is a way of detecting threatening events in advance. This enables the public to be warned en masse so that actions can be taken to reduce the adverse effects of the event.
Household water treatment and safe storage (HWTS)	Household or point of use drinking water treatment and safe storage (HWTS) provides a means to improve the quality of their water by treating it in the home. These technologies have been shown to improve the microbiological and, in some cases, the chemical quality of drinking water and to reduce diarrheal disease.

Water scarcity technology transfer: Technology options

Increasing the use of water efficient fixtures and appliances	Fixtures that save water include low-flow shower heads, sinks with auto-shutoff mechanisms, and water-saving toilets and urinals.
Leakage management, detection and repair in piped systems	Management, detection and repair of small leaks in a distribution system are critical functions of system operation and maintenance, yet they are often neglected.
Post-construction support (PCS) for community managed water systems	PSC increases the success and sustainability of community-managed water systems. By the 1990s a consensus developed that projects should: (1) be demand-driven; (2) be managed by a community water committee; (3) require partial recovery of capital costs; (4) require full recovery of operations and maintenance (O&M) costs; (5) ensure the availability of spare parts for purchase through local markets; and (6) include a larger role for women in decision-making.
Micro scale harvesting from ground surfaces-small reservoirs and micro catchments	Rainwater harvesting is defined as a method for inducing, collecting, storing and conserving local surface runoff (rain or surface water flow that occurs when soil is infiltrated to full capacity) for agriculture in arid and semi-arid regions. In the ground surface method water flowing along the ground during the rains is usually diverted toward a tank below the surface.

Water scarcity technology transfer: Technology options

Micro scale rainwater harvesting from roof tops	In the roof-top method of rain water harvesting, water from rainfall is collected in vessels at the edge of the roof or channelled to a storage system via gutters and pipes.
Storm surge barriers and closure dams	Storm surge barriers and closure dams are hard engineered structures with a primary function of preventing coastal flooding.
Water reclamation and reuse	Water reclamation is the treatment or processing of wastewater to make it reusable with definable treatment reliability and meeting appropriate water quality criteria; water reuse is the use of treated wastewater (or reclaimed water) for a beneficial purpose.
Water safety plans (WSP)	Water Safety Plans (WSPs) are described collectively as a systematic and integrated approach to water supply management based on assessment and control of various factors that pose a threat to the safety of drinking water.
Water saving	Conserving water doesn't just mean taking shorter shower or turning off the water while lathering your hands, when washing. There are other ways to save water nowadays that goes beyond these normal activities at home.

Planned activities for the Water harvesting request

- **Activity 1** – Contextualization: Review and consolidation of development plans and climate change adaptation projects and prepare for stakeholder workshop for technology prioritization
- **Activity 2** – Face to face stakeholder consultation: A stakeholder workshop will be held to determine the direction of the technology prioritization for the water sector in Namibia.
- **Activity 3** – Technology prioritization: This process will form a large part of the workshop proceedings
- **Activity 4** - Develop a catalogue/list of prioritized technologies for the highest ranked technology solutions and to identify opportunities for financial investment and/or technical assistance to deploy and scale up the highest ranked technology solutions

Response from the CTCN

- Quick in sending the acknowledgement of receiving the request (within 1 week), thereafter comments.
- Draft response plan received within 3 weeks.
- NDE was not available 1st half of 2015 – delay in the request activities.

Pipeline requests and activities

- Dealing with bush encroachment 3rd request.
  - Problem: Declines in carrying capacity of Namibia's rangelands are estimated to be as high as 100% or more and that bush encroachment alone is contributing to an economic loss to farmers in excess of about N$ 700 million per annum.

- Rigorous awareness creation on CTCN activities country wide to generate new requests.

- Technology publication – peer reviewed journal with the CSIR and CTCN.

Challenges

- Formulation of a sound problem statement.
- Information sharing among stakeholders – not easy.
- Awareness raising on CTCN activities.
- What to do with already developed project proposals.

THANK YOU!

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