

Vulnerability, Impacts and Adaptation

Development and Finalization of Nationally Determined Contribution
3.0 of Zimbabwe

09-10 December 2024

Bulawayo

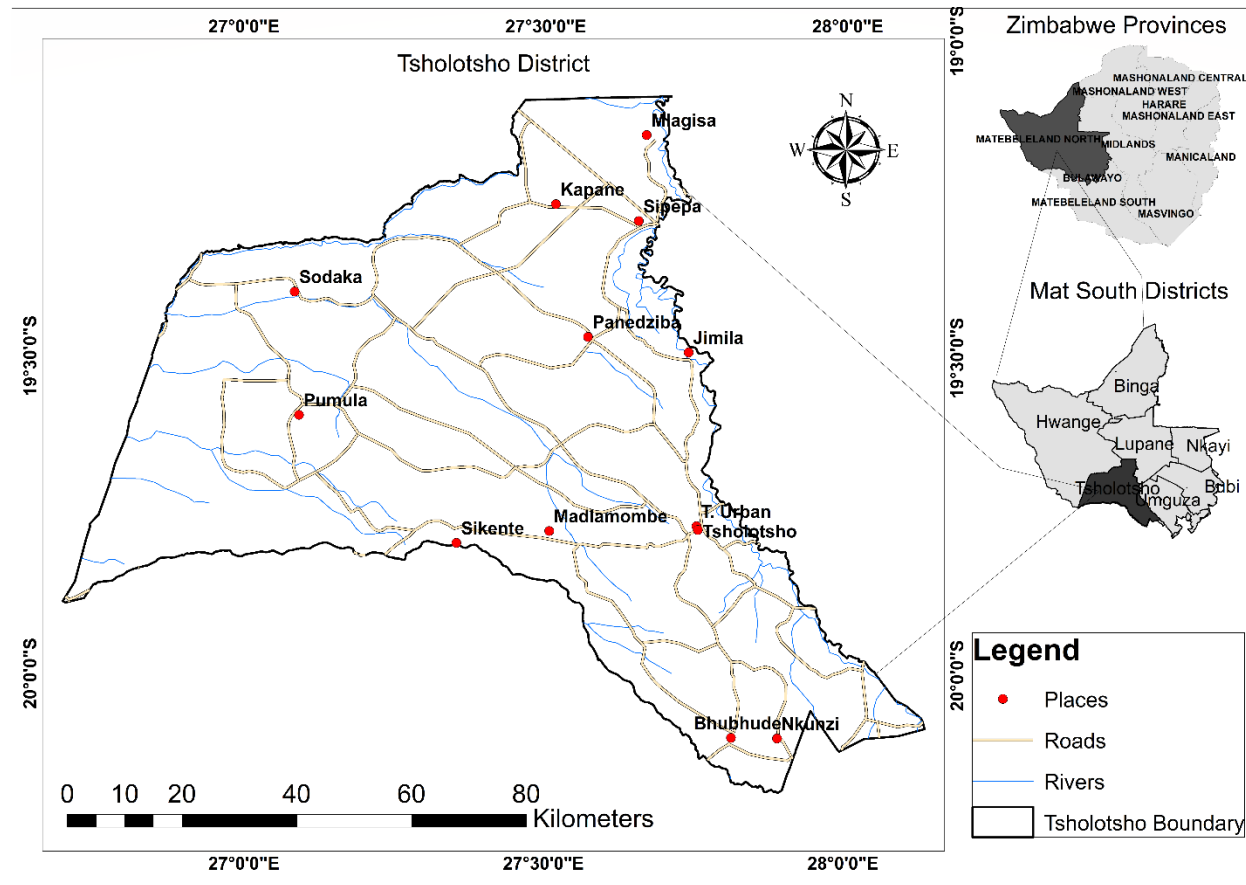
Background

- The Zimbabwe SNC assessed VIA across Zimbabwe and identified climate hotspot areas.
- Zimbabwe made a decision to focus on one hotspot district for each subsequent NC
- The TNC and FNC focused on Chiredzi and Muzarabani district respectively.
- The current NC5/BTR1 cycle focus is on Tsholotsho District in northwest Zimbabwe.

Vulnerable Sectors

- VIA chapter of the NC4 focused on five sectors namely; Agriculture, Ecosystems and Wildlife, Public Health, Water and Infrastructure.
- The NC5 report delves into similar sectors, however, the Infrastructure has been combined with human Settlements sector, while Tourism is combined with Ecosystems and wildlife.
- These sectors, if climate-proofed have potential to contribute to mitigation.

Tsholotsho district location



Context of Focus area

- Location: Matabeleland North province
- Number of wards 22
- HH number 26 668, with an average household size of 4.3.
- Population is 115,782 (46.5% male) and 53.5% female).
- AEZ: IV and V.
- Co-occurrence of floods and droughts.
- Low-lying areas along the riverbanks of Gwayi, Manzanymama and Zombani are prone to flooding
- Human Wildlife conflicts

Water Resources in Tsholotsho

- Falls within Upper Gwayi and Nata subcatchments of the Gwayi catchment.
- Mean annual runoff- 16 mm, national average, 61 mm per annum.
- Low baseflow index, 0.16 to 0.28 (no perennial rivers).
- District relies heavily on groundwater, which is saline.
- Some shallow (<2m) water pans used for domestic and livestock requirements. However, these dry quickly due to high evaporation rates.

Impact of Climate change on Water sector

- Highly variable rainfall and runoff patterns – increased days with no runoff
- Increased water depths for boreholes
- Increased evaporation on open water bodies
- Increased frequency of droughts and floods,

Impact of Climate change on Water sector

- Water insecurity (quantity and quality) is main challenge in the district



Adaptation strategies

- ZINWA currently drilling boreholes under the Drought mitigation programme.
- Solarise existing boreholes (currently with bush pumps and diesel engines)
- Establish nutritional gardens where water is adequate.
- Research into cheaper options for treating saline water.
- Catchment water transfers eg from Gwayi Shangani dam to Tsholotsho.

Tracking Adaptation in Water

- Utilize existing structure eg Department of Water Resources, CCMD TWGs.
- Develop indicators from NAP, SDGs.

Tracking Adaptation in Water (NDC IP)

Outcome	Output PI	PI
Improved availability of water resources	Water sources developed and sustainably managed	Number of new water sources developed and maintained by type
		Number of water sources rehabilitated, upgraded and maintained by type
		Distance and time taken to water source
		Ha of wetland area protected
	Water use efficient systems adopted	% of water users with functional efficient water systems e.g. number of houses with prepaid water meters by user type

Tracking Adaptation in Water (NDC IP)

Outcome	Output PI	PI
Improved availability of water resources	Improved hydrometeorological network and climate data monitoring and forecasting for better planning and early warning systems for floods and droughts	Number of new automatic hydrometeorological stations and real time streamflow gauging stations operational by December 2030
		Number of old weather stations and streamflow gauging stations upgraded and repaired by December 2030
		Number of Local Authorities with prepaid meters in their by-laws
	Water Resources Management	Degree of IWRM implementation

Agricultural Sector

- Main crops; **maize**, sorghum, pearl millet, finger millet, round nuts, cowpeas, groundnuts, bambara nuts and watermelons.
- Very poor communication due to network challenges and the poor state of roads.
- Limited access to early warning information.

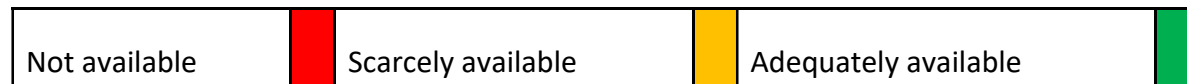
Impacts of climate change on Agric

- Low agricultural output (maize yields for 2023/24 was 0.01 to 0.03 t/ha, national average was of 0.36 t/ha.
- For a favourable season (2021/22), average maize yield was 0.4 t/ha in Tsholotsho while national average was 1.17 t/ha.
- Very poor yields, barely adequate for subsistence.

Impacts of cc on food availability

Food availability for a typical good season

Food	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Cereals	Red	Red	Red	Green	Green	Yellow	Yellow	Red	Red	Red	Red	Red
Legumes	Red	Red	Green	Green	Green	Yellow	Yellow	Yellow	Red	Red	Red	Red
Vegetables	Green	Yellow	Yellow	Yellow	Yellow	Yellow	Red	Red	Red	Red	Red	Green



Impacts

- New and emerging pests, eg FAW now prevalent in the district.
- First observed 2019, however, on increase due to increasingly drying trend.
- Much of these pests have higher feeding rate when carbon dioxide conc increases.
- Human-wildlife conflict (limited water and pastures).
- High cattle poverty deaths eg 500 (200 000USD) recorded over two months.
- National level 11 542 (4 616 800 USD in potential revenue).

Adaptation strategies in Agric

Climate smart agriculture solutions such as;

- ✓ Climate proofed Presidential Agricultural Input Scheme (Pfumvudza/Intwasa)
- ✓ Adoption of small / future grains at the expense of the popular maize
- ✓ Improved breeds of small stock
- ✓ Planting of cover runner crops in the fields
- ✓ Efficient irrigation systems

Adaptation strategies in Agric

Establishment of Ward Drought Mitigation Centers

- ✓ Government is availing resources through ZINWA to drill boreholes at 635 distressed wards in AEZ IV and V.
- ✓ Each borehole will be solarised and once capacity tests prove there is adequate water, the borehole will be equipped with watering troughs, feeding troughs and cattle holding pens.

Adaptation strategies in Agric

Subsidised beef survival feed

- ✓ Mat north recorded the highest poverty deaths - 4 327
- ✓ Amalima Loko distributed 655.15 MT of subsidized beef survival feed to Tsholotsho, Lupane, Nkayi, Hwange and Binga districts.
- ✓ Average price of 18 USD for 3 by 50 kg bags.

Adaptation strategies in Agric

Address human wildlife conflict

- Drill boreholes in safaris to reduce human wildlife conflict

Pests control

- Strengthen multi-country surveillance of pests, including FAW.

Applying behavioral change strategies

- Unlearning and Relearning- adapting to CC requires changes in practices and lifestyles while cutting emissions requires deep behavioral change.

Tracking Adaptation in Agriculture

- Utilize existing structure eg Ministry of Lands, Agriculture, Fisheries, Water and Rural Development
- Develop indicators from NAP, SDGs.

Tracking Adaptation in Agriculture (NDC IP)

Outcome	Output PI	PI
Strengthened resilience of the agricultural and food systems to climate change.	Improved capacity to generate weather and climate information products and services	Number of farmers accessing weather and information services disaggregated by gender, age and farm type <i>(what about # using?)</i>
		Number of tailor-made weather information products for agricultural sector
	Climate Smart Agriculture (CSA) and agroecological practices adopted	% Crop yield increase
		% Livestock production increase
		Proportion of farmers adopting CSA and agroecology

Conclusion

- Climate change threatens all sectors of the economy
- Need to build adaptive capacity to build system resilience and reduce environmental foot print of sectors
- Behavioural should be part and parcel of building adaptive capacity and mitigating cc.
- To track adaptation, it is critical to develop robust indicators that speaks to our development priorities.