



Stakeholders' knowledge and use of remote sensed data in the assessment and monitoring of Driefontein and Intunjambili wetlands' ecological conditions

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Introduction

- Globally the rate of wetland loss is above 50%, including Zimbabwe.
- Wetland loss is largely attributed to unsustainable human activities.
- Different management approaches involving different stakeholders have been adopted.
- The use of EO data has been promising to be effective and reliable in wetland monitoring and assessment, though its uptake remains low.
- It is therefore imperative to analyse stakeholders' knowledge and use of EO data in wetland management so as to identify challenges faced and offer possible solutions for the sustenance of wetland ecosystems.

General objective

- To examine stakeholders' knowledge and use of remote sensed data in the assessment and monitoring of Driefontein and Intunjambili wetlands' ecological conditions

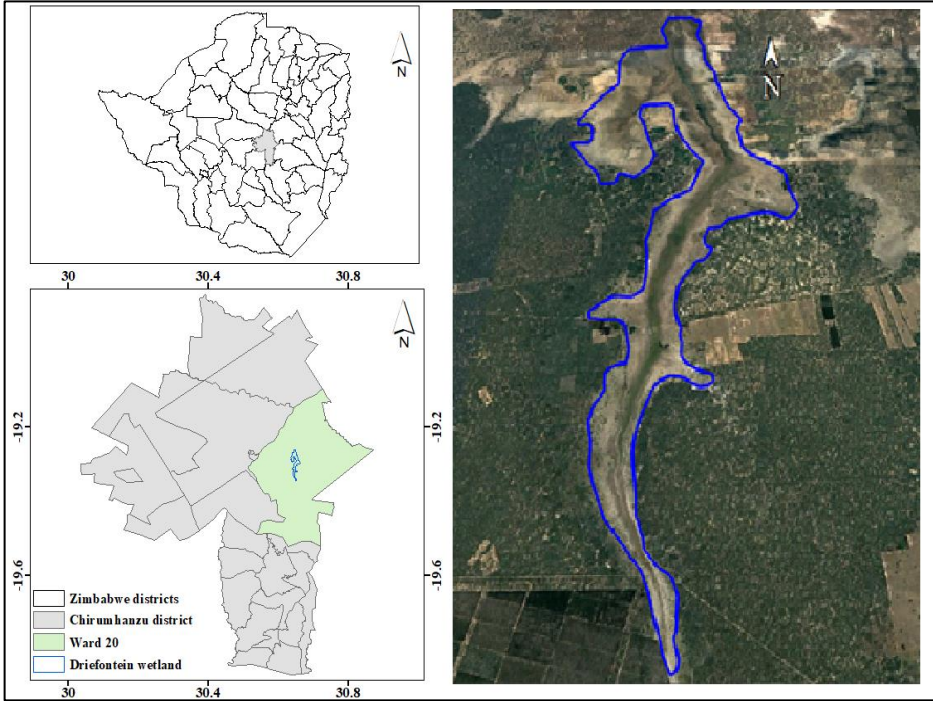
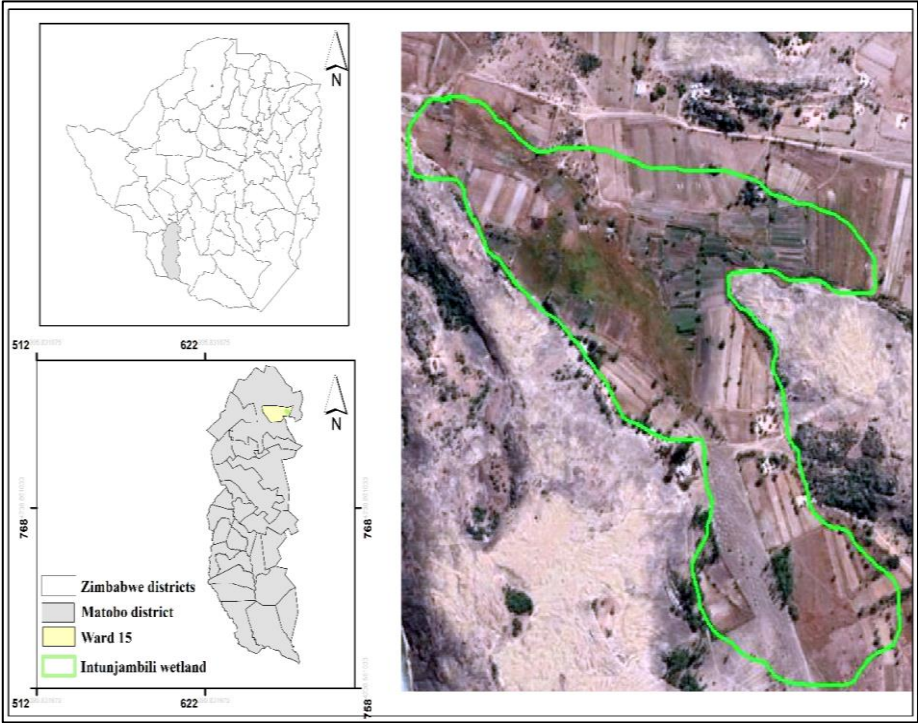
Specific objectives

- To analyse stakeholders involved in wetland assessment and monitoring at wetland scale.
- To assess stakeholders' knowledge and level of use of EO data in wetland assessment and monitoring.
- To assess stakeholders and users' expectations on EO data integration in wetland assessment and monitoring.
- To examine the socio-economic and technical challenges encountered in use of EO data by various stakeholders involved in wetland management.

Justification of the study

- Contributes to WeMAST capacity building initiatives by identifying gaps in stakeholder expectations.
- The attainment of Sustainable Development Goal (SDG) number 14 which advocates for life below water. SDG 14 promotes the conservation and sustainable use of wetland resources for sustainable development.
- Provision of baseline information that can be used to develop policies on EO data application.

Study areas

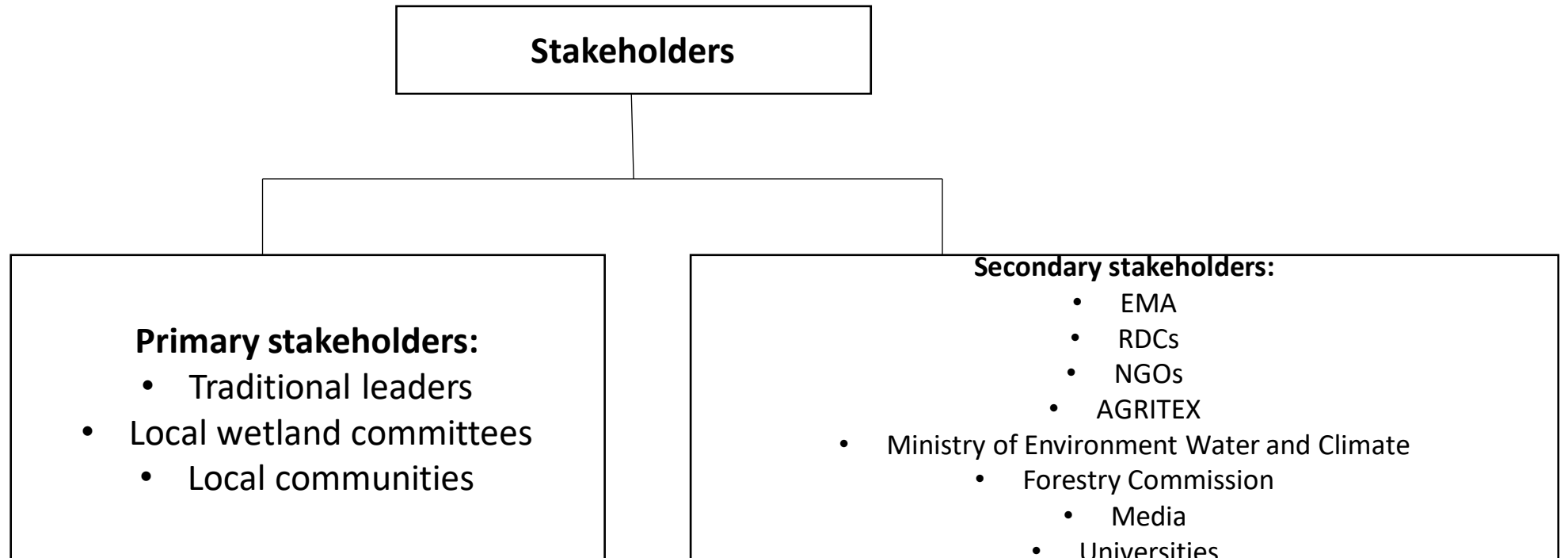


Research methodology

- Target population- institutional stakeholders and local communities.
- Raosoft sample size calculator was used to determine household sample sizes for Driefontein (159) and Intunjambili (123).
- Simple random sampling was used to select household respondents.
- Purposive sampling was used to select key informants from the identified eleven (11) institutional stakeholders.
- Data collection methods used are semi-structured interviews and questionnaires.
- Qualitative data from open ended questions in the questionnaire survey and semi-structured interviews were analysed using the content analysis method.
- Quantitative data was analysed in SPSS.

Results:

Stakeholders involved in wetland assessment and monitoring at wetland scale



Stakeholders' knowledge of EO data use in wetland assessment and monitoring

Wetland users (households)		Institutional stakeholders	
Driefontein	Intunjambili	Yes:	No :
Yes: 14.3%	Yes: 22.2%	44.4%	55.6%
No : 85.7%	No : 77.8%		

Chi-Square results on association between households' demographic characteristics and knowledge of EO data used in wetland assessment and monitoring

Variable	p-value	
	Driefontein	Intunjambili
Gender	0.000	1.286
Age	5.542	4.500
Marital status	3.640	2.571
Level of education	3.447	1.286

Institutional stakeholders and wetland users' expectations on EO data integration in wetland assessment and monitoring

Wetland users		Institutional stakeholders
Wetland variable to be monitored	water quality and quantity	wetland use and changes
Method of disseminating EO outputs	local leadership	mobile phones
Frequency of monitoring wetland variables using EO data	Driefontein-quarterly Intunjambili-annually	annually

Socio-economic and technical challenges likely to be encountered in the use of EO data in wetland assessment and monitoring

Wetland users (challenges ranked in order of importance)		Institutional stakeholders (challenges ranked in order of importance)
Driefontein	Intunjambili	Poor internet connectivity/lack of high speed internet
Knowledge deficiency	Knowledge deficiency	Knowledge deficiency
Lack of resources (equipment such as smart phones)	Lack of technical skills	Lack of technical skills
Lack of technical skills	Lack of resources(equipment such as smart phones)	Financial constraints
Resistance to change	Resistance to change	Lack of resources (hardware such as computers)
Lack of internet connectivity		

Conclusions and recommendations

- The study concludes that institutional stakeholders and communities involved in assessment and monitoring of Driefontein and Intunjambili wetlands in Zimbabwe lack knowledge of EO data. Those that possess knowledge of EO data are highly dependent on low resolution imageries that hinder effective implementation of EO data in wetland management.
- The study therefore recommends the development of a geoportal based on freely available high-resolution Sentinel data to ensure effective ecological monitoring of wetland conditions in Zimbabwe.
- The study also recommends investment in capacity building of various stakeholders to enhance uptake of EO products and services by both technical and non technical stakeholders.

THE END!!!

THANK YOU!!!!