



Mathew Svodziwa

**Department of Development Studies, University of
South Africa**

**Dynamics of Carbon Emissions and their
Implications in Climate Change Adaptation
Strategies on Rural Livelihoods**

PRESENTATION OUTLINE

- Introduction
- Objectives
- Theoretical Framework
- Research Methodology
- Results
- Discussions
- Conclusions
- Recommendations

Introduction

- The dynamics of carbon emissions and their implications for climate change adaptation are of growing concern, particularly in rural areas where livelihoods are closely tied to natural resources.
- This paper investigates these dynamics using Jotsholo, Lupane District in Zimbabwe as a case study, where rural livelihoods are highly dependent on rain-fed agriculture, livestock farming, and forest resources.
- By exploring this case study, the research aimed to provide insights into how carbon emission reduction strategies can be integrated with climate change adaptation approaches to secure rural livelihoods.

OBJECTIVES OF THE STUDY

- To identify the drivers of carbon emissions in Lupane district
- To examine the effectiveness of climate change adaptation strategies on rural livelihoods
- To highlight the implications of carbon emissions on Climate change adaptation

Theoretical Framework

- The study was grounded on the Vulnerability-Resilience Framework, which examined how communities face environmental stressors, such as climate change, and the extent of their resilience or vulnerability.
- The framework was highly suitable for the study as it integrated both socio-economic and environmental factors that contribute to the adaptive capacity of rural communities like those in Jotsholo, Lupane.
- This study used the Vulnerability-Resilience Framework to explore how unsustainable practices such as deforestation and overreliance on biomass for energy not only contribute to carbon emissions but also increase the community's vulnerability to climate impacts (Madzudzo & Muchopa, 2021).
- By focusing on the interactions between environmental stressors and social systems, the framework helped in understanding how gender, energy access, and traditional agricultural practices intersect with the broader challenges of climate adaptation.

Research Methodology

- A mixed-methods approach was utilized, integrating qualitative and quantitative research methods to capture the complexities of the issue.
- The target population comprised residents of Jotsholo, including farmers, local community leaders, and stakeholders involved in climate adaptation efforts.
- Data collection methods included two focus group discussions (FGDs) with community members and key stakeholders, 20 structured questionnaires administered to households, and five in-depth interviews with influential figures, such as local government representatives and NGOs engaged in climate initiatives.
- This multifaceted approach facilitated triangulation of data, enhancing the reliability and validity of the findings (Creswell & Creswell, 2021).

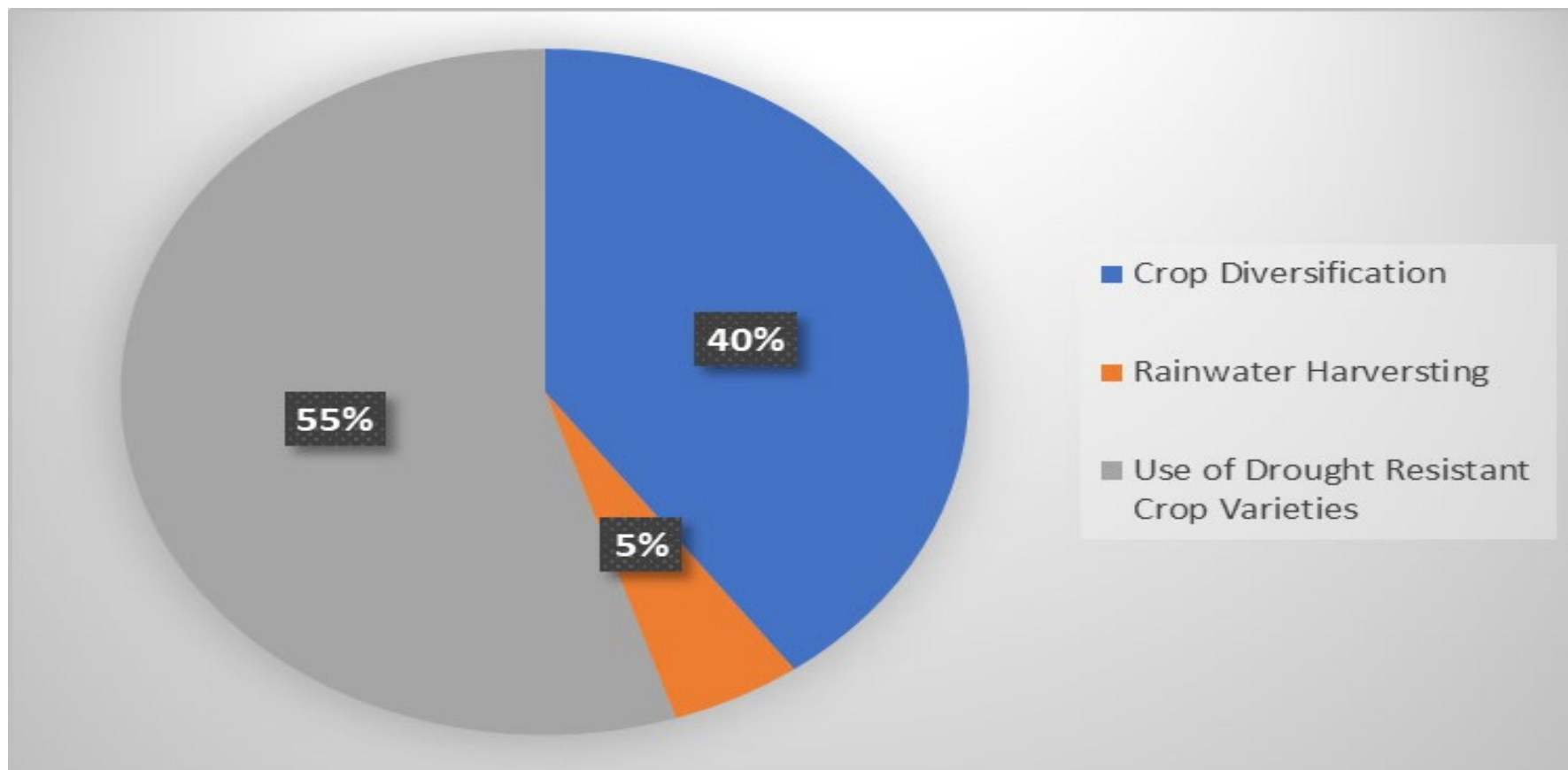
Research Methodology

- Data analysis involved both qualitative and quantitative techniques. Quantitative data from the questionnaires were analyzed using statistical software, employing descriptive statistics (Field, 2021).
- Qualitative data from FGDs and interviews were analyzed thematically, identifying key themes and patterns related to carbon emissions and climate adaptation strategies.
- Ethical considerations were paramount in this research; informed consent was obtained from all participants, ensuring they were aware of the study's purpose and their right to withdraw at any time (Beauchamp & Childress, 2020).
- Anonymity and confidentiality were maintained throughout the study to protect participants' identities, particularly given the sensitivity surrounding issues of carbon emissions and climate change adaptation.

Results - Drivers of Carbon Emissions in Lupane District

- The results of the study identified several key drivers of carbon emissions in Lupane District, with deforestation emerging as the most significant factor, accounting for approximately 45% of total emissions.
- Additionally, the use of biomass for energy, which constitutes around 35% of emissions, highlights the community's reliance on traditional energy sources, such as firewood and charcoal, for cooking and heating.
- Moreover, unsustainable agricultural practices, representing 20% of emissions, have also been linked to land degradation and soil depletion, further compromising the district's capacity to adapt to climate change.

Results - Climate Change Adaptation Strategies on Rural Livelihoods in Lupane District



Results - Effectiveness of Existing Climate Change Adaptation

Strategies in Enhancing Rural Livelihoods

- Participants recognized that initiatives such as rainwater harvesting and sustainable agricultural practices have positively impacted food security and resilience.
- Participants also highlighted the need for ongoing training and resources to maximize the potential of these strategies, indicating that while effective, they require sustained support to yield optimal benefits.
- Participants also raised concerns about the sustainability and accessibility of the adaptation strategies currently in place. While many acknowledged that programs aimed at promoting climate-resilient crops have improved yield, there was a call for more inclusive access to these resources.

Results - Implications of Carbon Emissions on Climate Change Adaptation

- Participants expressed concerns that rising carbon emissions, primarily driven by deforestation and unsustainable agricultural practices, exacerbate the impacts of climate change, including prolonged droughts and erratic rainfall patterns.
- Analysis highlights a vicious cycle where increased carbon emissions lead to greater climate instability, which in turn undermines the very livelihoods that communities rely on.
- The gender dimension emerged prominently in discussions about the implications of carbon emissions on climate adaptation. Women, who are often responsible for household food security and resource management, expressed that the impacts of climate change disproportionately affect them.

Discussions

- The findings also resonate with studies across Sub-Saharan Africa, where community-based adaptation strategies have proven effective in reducing vulnerability while simultaneously addressing carbon emissions (Shongwe et al., 2021).
- Female participants articulated the disproportionate burden they face due to climate change, highlighting their central role in agricultural production and household food security. This echoes findings from other studies conducted in Zimbabwe and beyond, which underscore that women are often on the front lines of climate change impacts yet are frequently excluded from decision-making processes (Chikozho, 2021).
- While many international studies emphasize technological innovation and policy frameworks, this research highlights the importance of grassroots initiatives and local adaptations.

Conclusions

- Findings reveal that initiatives such as crop diversification and the utilization of drought-resistant varieties not only enhance food security but also contribute to reducing carbon emissions, illustrating the synergies that can be harnessed in climate adaptation efforts.
- the study's emphasis on gender dynamics presents an essential intersection that calls for more inclusive climate adaptation strategies. Women in the Lupane District, as primary caregivers and agricultural producers, are significantly affected by climate change and play a pivotal role in implementing adaptation measures.
- By fostering synergies between local knowledge, gender equity, and sustainable practices, this study contributes valuable insights into enhancing climate resilience and underscores the need for a multifaceted approach to climate adaptation in rural livelihoods.

Recommendations

- **Promote Sustainable Agricultural Practices:** Encourage the adoption of crop diversification and drought-resistant varieties among local farmers.
- **Integrate Traditional Knowledge in Climate Policies:** Develop frameworks that incorporate indigenous knowledge and local farming practices into formal climate adaptation strategies.
- **Empower Women in Climate Adaptation Efforts:** Implement programs that enhance the participation of women in decision-making processes related to climate adaptation.
- **Enhance Access to Climate Information:** Establish platforms that provide local communities with timely and relevant climate information.

End of Presentation

*thank
you*