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SOIL & CROP SCIENCES | RESEARCH ARTICLE

Media coverage on food security and climate-smart agriculture: A case study of newspapers in Zimbabwe

Innocent Kutyauripo^{1*}, Nyaradzo Prisca Mavodza¹ and Christopher Tafara Gadzirayi¹

Abstract: Food security is a global concern, as all international and local agencies are putting various efforts to attain the Sustainable Development Goal number 2 of ending hunger by 2030. Nevertheless, achieving food security in the face of climate change seems to be unachievable in the foreseeable future. The study sought to investigate the coverage by newspapers in Zimbabwe on food security issues related to climate-smart agriculture. Quantitative data on food security issues were collected by reviewing newspapers namely The Herald, Newsday, The Standard and The Sunday Mail in 123 days. The main objective was to analyse quantitative coverage of climate-smart agricultural news. The study analysed newspaper coverage of crop production, animal production, fisheries, postharvest management, food safety, value addition, marketing and administration as they relate to climate change. Results of 469 food security articles revealed that 22.6% coverage was related to climate change whilst 77.4% covered food security issues not related to climate change. The study concluded that there was a significant variance in the coverage of various food security issues related to climate change with climate change issues related to postharvest management, food safety and fishery management not being covered during the period of study. It is recommended that stakeholders in the agriculture sector and the

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Innocent Kutyauripo is a holder of a Master of Science degree in Food Security and Sustainable Agriculture with the Bindura University of Science Education. The Author has research interests in issues to do with food security, food safety, climate change and postharvest management. Nyaradzo Prisca Mavodza is a holder of a Master of Science degree in Food Security and Sustainable Agriculture with the Bindura University of Science Education. She has research interests in crop science, food security and climate change. Dr Christopher Tafara Gadzirayi is a lecturer at the Bindura University of Science Education. He guided the research process. This research assists in enlightening the public on the role of print media in disseminating information on climate-smart agriculture.

PUBLIC INTEREST STATEMENT

The media plays a significant role in informing the public on climate-smart agriculture to achieve food security in the face of climate change. This study was carried out to assess print media coverage on climate change issues as they relate to food security. The study analysed newspaper coverage on climate change concerning crop production, livestock production, fish production, food safety, value addition, food marketing, food and agricultural policies and postharvest management. The research findings revealed that 77.4% of the food security articles did not cover climate change issues whilst 22.6% of the food security articles covered climate change issues. There was no coverage on climate change issues related to food safety, fish production and postharvest management. The media houses and agricultural organisations should work together towards improving the dissemination of information on climate-smart agriculture.

media industry should work towards improving the publication of climate change adaptation and mitigation in agriculture.

Subjects: Environment & Agriculture; Agriculture; Agriculture and Food

Keywords: Climate change; climate-smart agriculture; newspaper coverage

1. Introduction

Climate change is a challenge that is affecting agriculture activities at national, continental and global levels. The four components of food security that are food accessibility, food utilisation, food system stability and food availability are negatively affected by the negative effects of climate change on agriculture (Food and Agriculture Organisation of the United Nations, 2008). Some of the negative effects of climate change include an increase in global temperatures and changes in rainfall pattern, which might include excessive rainfall or droughts (Wheeler & Von Braun, 2013). The increasing temperatures, flooding or droughts result in lower crop yields whilst heat stress and drought lower down livestock growth and productivity (Myers et al., 2017). The antagonistic effects of climate change on agriculture increase the chances of food insecurity mostly in Africa and Asia. Fisheries, forestry and agriculture are highly sensitive to changes in the climate (Food and Agriculture Organisation of the United Nations, 2008).

Subsaharan African countries are mostly dependent on rainfall for their agricultural activities which makes them highly vulnerable to changes in rainfall patterns (Calzadilla et al., 2013). Agricultural activities of Subsahara African countries are likely to suffer more compared to Western countries due to the increasing temperature as this region already has high temperatures (Hall et al., 2017). Extended periods of wet weather in Zimbabwe have been reported to result in crop failure and flooding has also been reported to destroy crops, livestock and the agricultural infrastructure (Muzari et al., 2014). In Zimbabwe, livestock disease prevalence has been attributed to the rising temperatures and drought. Lack of enough grazing pastures due to drought has resulted in low productivity for livestock (Mubaya et al., 2010).

Climate change adaptation and mitigation measures need to be implemented for high agricultural productivity. Climate-smart agriculture includes but is not limited to management of soil and nutrients, water harvesting techniques, control of diseases, improved management of ecosystem and postharvest management (Food and Agriculture Organisation of the United Nations, 2010). Different extension methods can be used to disseminate new or existing knowledge that is related to climate-smart agriculture and the use of print newspaper has been reported as one of the agriculture extension methods that can be used (Apata, 2010; Nazari & Hassan, 2011; Sala et al., 2016). The use of mass media has been identified as one of the channels to improve the dissemination of agriculture information due to the challenges that are associated with the traditional methods of agriculture extension (Apata, 2010).

Climate-smart agriculture is significant in increasing the farmers' resilience towards climate change-induced food insecurity (Zougmoré et al., 2018). Inadequate access by farmers to current information on ways of addressing current food security constraints often worsen the situation (Ogessa & Sife, 2017). Newspaper coverage tends to be more inclined towards business, political news and other social issues at the expense of agricultural and other developmental issues (Narayana & Kumar, 2009). Studies carried out in other African countries mainly assessed the use of media on agricultural information coverage (Yusuf et al., 2016). Globally, there is limited literature on newspaper coverage on climate change relating to food security. This study, therefore, sought to explore in Zimbabwe the coverage of newspapers on food security issues (crop production, animal production, fisheries, rainwater harvesting, food safety, postharvest technology, value addition, marketing and administration) as they are affected by climate change.

2. Materials and methods

2.1. The study site

The study was carried out in Zimbabwe which is located in Southern Africa. Zimbabwe has a land area covering 391 000 square kilometres. It is a landlocked country bordered by South Africa (southwards), Mozambique (eastwards), Zambia (northwest) and Botswana on the southwest side (Brown et al., 2012). The economy of Zimbabwe is mainly dependent on agriculture, mining, tourism and manufacturing with agriculture contributing to the livelihoods of more than 70% of the country's population. The average annual rainfall of Zimbabwe is in the range of 500–750 mm (Mtisi & Prowse, 2012).

2.2. Methodology

Purposive sampling was used to select a state-owned newspaper-publishing house (Zimpapers) and one privately owned newspaper-publishing house (Alpha Media Holdings). Two daily newspapers namely the Herald Newspaper (published by Zimpapers) and Newsday (published by Alpha Media Holdings) were purposively selected. Two Sunday newspapers namely The Sunday Mail (published by Zimpapers) and The Standard (published by Alpha Media Holdings) were purposively selected. All the newspaper editions are published in English. News articles, pictures, opinions and letters to the editor were considered in the analysis. The papers were analysed from 1 May 2018 to 31 August 2018, on daily basis bringing the number of days to 123 days. A total of 212 daily newspaper issues and 34 weekly newspaper issues were evaluated bringing the total of newspaper issues that were investigated to 246.

The data was captured using three record sheets. Record sheet 1 captured climate newspaper coverage on all food security issues. The date, headline, page, and whether the content was related to climate change or not were recorded. Record sheet 2 classified food security as it relates to climate change under the following topical areas; crop production, rainwater harvesting, animal production, climate change awareness, fisheries, food safety, postharvest management, value addition, marketing and administration. The date and frequency of coverage for each topic were recorded. Record sheet 3 classified food security articles that had no mention of climate change under the above-mentioned topical areas excluding climate change awareness and rainwater harvesting. A simple descriptive analysis of means and percentages was

Figure 1. Comparison of newspaper coverage related to climate change and newspaper coverage not related to climate change.

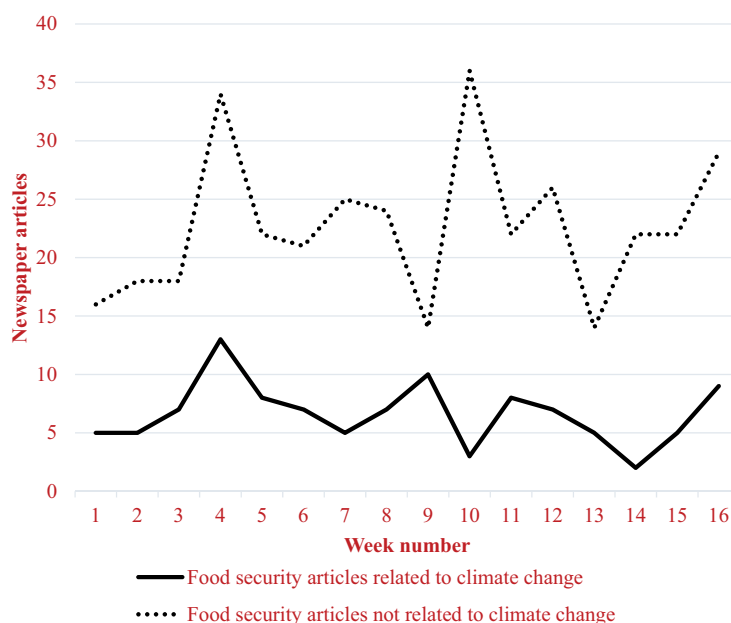


Table 1. Paired sample tests between FSCC and FSNCC

	Paired differences							
	Mean	Std. deviation	Std. error mean	95% confidence interval of the difference		t	df	P-value
				Lower	Upper			
Pair 1 FSCC— FSNCC	-16.062	6.516	1.629	-19.534	-12.590	-9.860	15	0.000

Table 2. Newspaper coverage of food security issues related to climate change

Food security issue	N	% of coverage
Climate change awareness	31	6.61
Rainwater harvesting	31	6.61
Crop production	26	5.54
Administration	9	1.92
Livestock production	4	0.85
Value addition	4	0.85
Marketing	1	0.21
Food safety	0	0
Fisheries	0	0
Postharvest management	0	0

used to analyse the frequencies of coverage. Two paired sample t-test was used to compare Food Security Coverage related to Climate Change (FSCC) and Food Security Coverage Not related to Climate Change (FSNCC). Single-factor analysis of variance using SPSS Version 20.0 followed by a Tukey posthoc test was carried out to compare the coverage of different specified areas of food security related to climate change.

3. Results

The newspaper articles covering climate change were less as compared to food security articles that are not related to climate change and weather variability issues for all the 16 weeks under the study. Of the total 469 food security newspaper articles covered by the 2 daily papers and 2 Sunday newspapers 22.6% covered food security articles related to climate change whilst 77.4% covered food security issues that are not related to climate change (Figure 1).

There was a significant difference ($p \leq 0.05$) in the coverage for FSCC (Mean = 6.62, SD = 2.71) and FSNCC (Mean = 22.69, SD = 6.36) conditions as shown in Table 1.

In Table 2 it can be seen that there was no newspaper coverage for food safety, fisheries and postharvest management issues related to climate change. The three mentioned areas also have the lowest percentage coverage on food security articles that are not related to climate change. It can be noted from Table 3 that newspaper coverage for issues on postharvest management, fisheries and food safety are generally lower as compared to all the other categories in food security news and this might also have influenced the results in Table 2.

There was a significant difference in the coverage of FSCC as determined by one-way ANOVA at $p < 0.05$ level for the three conditions [$F(6:21) = 6.372, p = 0.001$] (Table 4). In this regard, a posthoc test was carried out to identify homogeneous subgroups as well as the variations among food security issues related to climate change.

The results from Figure 2 indicate the significant differences among climate change newspaper coverage on various food security issues.

4. Discussion

Several factors could have resulted in low climate change coverage by newspapers. Climate change news might be difficult to report due to the uncertainties associated with it and the reactions that it might bring to society as others might feel to be powerless about the future. According to Boykoff and Roberts (2007), there is a competition of climate change news with other news. Climate change news coverage is also influenced by policies that are put in place or donations that would have been made towards the implementation of climate change mitigation

Figure 2. Mean plot for newspaper coverage on food security issues related to climate change. Issues sharing different letters are significantly different ($p < 0.05$).

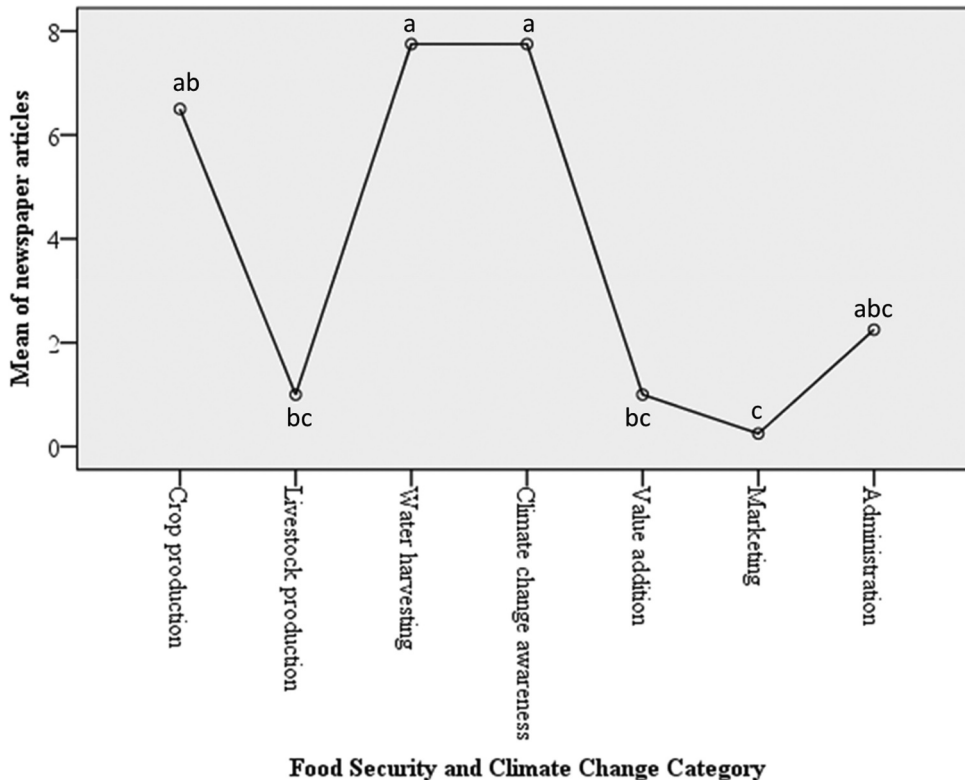


Table 3. Newspaper coverage on food security issues not related to climate change

Food security issue	N	% coverage
Administration	156	33.26
Crop production	76	16.20
Livestock production	49	10.45
Marketing	35	7.46
Value addition	28	5.97
Postharvest management	8	1.71
Fisheries	6	1.27
Food safety	5	1.07

and adaptation measures. In a similar analysis by Boykoff and Rajan (2007) it was revealed that findings from scientific studies on climate change are mostly reported in terms of probabilities and uncertainties thus it might be very difficult for a journalist to simplify the results from peer-reviewed journals and translate them into comprehensive news that can be understood by the general populace. Newspaper coverage on climate change is also influenced by the financial resources that are channelled towards food security and climate change as well as the preferences of the editorial board (Boykoff & Rajan, 2007; Boykoff & Roberts, 2007).

Table 4. One-way ANOVA on the coverage of FSCC

	Sum of Squares	Df	Mean Square	F	P-value
Between Groups	276.714	6	46.119	6.372	0.001
Within Groups	152.000	21	7.238		
	428.714	27			

From this study, climate change awareness and rainwater harvesting have the highest news coverage by percentage and this can be attributed to that the risks associated with climate change are regarded as news worth publishing (Agwu & Amu, 2015). This can also be attributed to the increase in irrigation facilities rehabilitation programs taking place in dry marginal areas of developing countries. There was no climate change news related to food safety, fisheries and post-harvest management. This might be influenced by the fact that at a global scale there are limited studies on climate change and the entire food system which includes food safety and postharvest management (Stathers et al., 2013; Vermeulen et al., 2012). In this regard, there are few source documents for climate change news related to food safety and postharvest management.

The significant variations of the food security issues coverage might be influenced by the fact that climate change issues that constrain journalists in terms of the source of information might be lesser covered as compared to climate change issues that have plenty of sources (Boykoff & Roberts, 2007).

5. Conclusion

Climate change-related food security newspaper coverage by the Herald Newspaper, Sunday mail, Newsday and Standard between May and August 2018 was more on climate change awareness, water harvesting and crop production whilst there was no article covering food safety, postharvest and fishery management as they relate to climate change. Climate-smart agriculture news should cover all the stages of the food system. More food security news about climate change particularly food safety and post-harvest management should be covered in Zimbabwe. Stakeholders in the agriculture sector and the media should develop policies towards the improvement of newspaper coverage of climate-smart agriculture.

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Disclosure of potential conflicts of interest

The authors declare no competing interest.

Data availability statement

Data that is related to the findings can be found within the research article.

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References

- Agwu, A. E., & Amu, C. J. (2015). Framing of climate change news in four national daily newspapers in Southern Nigeria. *Agricultural Information Worldwide*, 6, 11–17.
- Apata, O. M. (2010). Farmers' use of newspapers as channels of agricultural information in Ekiti State, Nigeria. *Journal of Environmental Issues and Agriculture in Developing Countries*, 2(2), 1–9.
- Boykoff, M. T., & Rajan, S. R. (2007). Signals and noise: Mass-media coverage of climate change in the USA and the UK. *EMBO Reports*, 8(3), 207–211. <https://doi.org/10.1038/sj.embor.7400924>
- Boykoff, M. T., & Roberts, J. T. (2007). Media coverage of climate change: Current trends, strengths, weaknesses. *Human Development Report*, 2008, 3.
- Brown, D., Chanakira, R. R., Chatiza, K., Dhliwayo, M., Dodman, D., Masiwa, M., ... Zvigadza, S. (2012). *Climate change impacts, vulnerability and adaptation in Zimbabwe*. International Institute for Environment and Development.

- Calzadilla, A., Zhu, T., Rehdanz, K., Tol, R. S., & Ringler, C. (2013). Economywide impacts of climate change on agriculture in Sub-Saharan Africa. *Ecological Economics*, 93, 150–165. <https://doi.org/10.1016/j.ecolecon.2013.05.006>
- Food and Agriculture Organisation of the United Nations. (2008). *Climate change and food security: A framework document*. FAO.
- Food and Agriculture Organisation of the United Nations. (2010). *“Climate-smart” agriculture: Policies, practices and financing for food security, adaptation and mitigation*. FAO.
- Hall, C., Dawson, T. P., Macdiarmid, J. I., Matthews, R. B., & Smith, P. (2017). The impact of population growth and climate change on food security in Africa: Looking ahead to 2050. *International Journal of Agricultural Sustainability*, 15(2), 124–135. <https://doi.org/10.1080/14735903.2017.1293929>
- Mtisi, S., & Prowse, M. (2012). Baseline report on climate change and development in Zimbabwe. *Government of Zimbabwe*: Harare.
- Mubaya, C. P., Njuki, J., Liwenga, E., Mutsvangwa, E. P., & Mugabe, F. T. (2010). Perceived impacts of climate-related parameters on smallholder farmers in Zambia and Zimbabwe. *Journal of Sustainable Development in Africa*, 12(5), 170–186.
- Muzari, W., Muvhunzi, S., Soropa, G., & Kupika, O. L. (2014). Impacts of climate variability and change and farmers’ responsiveness in the agricultural sector in Zimbabwe. *International Journal of Science and Research*, 3(9), 1726–1731.
- Myers, S. S., Smith, M. R., Guth, S., Golden, C. D., Vaitla, B., Mueller, N. D., ... Huybers, P. (2017). Climate change and global food systems: Potential impacts on food security and undernutrition. *Annual Review of Public Health*, 38(1), 259–277. <https://doi.org/10.1146/annurev-publhealth-031816-044356>
- Narayana, U., & Kumar, S. (2009). Content analysis of agricultural news coverage in leading language dailies of india—a study of kannada language dailies of Karnataka state. *Karnataka University Journal of Communication*, 1(1), 1–14.
- Nazari, M. R., & Hassan, M. S. B. H. (2011). The role of television in the enhancement of farmers’ agricultural knowledge. *African Journal of Agricultural Research*, 6(4), 931–936.
- Ogessa, C. M., & Sife, A. S. (2017). Newspaper coverage of agricultural information in Tanzania. *University of Dar Es Salaam Library Journal*, 121, 12–26. ajol.info/index.php/udslj/article/view/164194
- Sala, S., Rossi, F., & David, S. (2016). *Supporting agricultural extension towards climate-smart agriculture: An overview of existing tools*. Global Alliance for Climate Smart Agriculture.
- Stathers, T., Lamboll, R., & Mvumi, B. M. (2013). Postharvest agriculture in changing climates: Its importance to African smallholder farmers. *Food Security*, 5(3), 361–392. <https://doi.org/10.1007/s12571-013-0262-z>
- Vermeulen, S. J., Campbell, B. M., & Ingram, J. S. (2012). Climate change and food systems. *Annual Review of Environment and Resources*, 37(1), 195–222. <https://doi.org/10.1146/annurev-environ-020411-130608>
- Wheeler, T., & Von Braun, J. (2013). Climate change impacts on global food security. *Science*, 341(6145), 508–513. <https://doi.org/10.1126/science.1239402>
- Yusuf, S. F. G., Krul, K., & Marufu, G. (2016). Representation of agricultural issues in South African newspapers: A content analysis. *Journal of Communication*, 7(2), 287–295. <https://doi.org/10.1080/0976691X.2016.11884909>
- Zougmore, R. B., Partey, S. T., Ouédraogo, M., Torquebiau, E., & Campbell, B. M. (2018). Facing climate variability in sub-Saharan Africa: Analysis of climate-smart agriculture opportunities to manage climate-related risks. *Cahiers Agricultures (TSI)*, 27(3), 1–9. <https://doi.org/10.1051/cagri/2018019>



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