COMMUNAL RANGELANDS AND LIVELIHOODS DEVELOPMENT IN RURAL ZIMBABWE

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Communal rangelands are a source of livelihood development strategies for most rural households in Zimbabwe especially in the current economic circumstances. In areas where rainfall is inadequate, rangelands are assets particularly in times of drought. Using the case study of the Mutandahwe communal area, this study gathers both qualitative and quantitative data in an exploratory and descriptive research design. The Sustainable Livelihoods Framework (SLF) is used to interpret and analyze the benefits of and value attached to rangelands by the participants. The study finds that families in this community obtained building material, medicine, energy (firewood), and food (fruits, insects, mushrooms) from rangelands. The article concludes that the adoption of the SLA as a model for policy and development designs would not only help both public and private actors to support rural dwellers conserve rangelands, but it could increase the understanding of the intrinsic value of these natural resources.

Keywords: *Communal rangelands, households, Mutandahwe, livelihoods, sustainable livelihood framework, Zimbabwe*

Introduction

An understanding of the crucial role of rangelands is imperative when assessing the importance wielded by these rangelands, particularly for the majority of most developing countries, including Zimbabwe. With regards to Zimbabwe, academia mostly focuses on how rangelands have been affected, especially by the Fast

Track Land Reform Programme (FTLRP) of the 2000s[1] while the potential of these rangelands to sustain the survival of poor households has not yet received adequate scholarly attention. The FTLRP was a land acquisition and redistribution project implemented in Zimbabwe in the 2000-2003 period. The project, which was based on the need to correct the racially-skewed land ownership conventions that favored whites and was instituted during colonialism, identified land that was mostly owned by whites to be redistributed to blacks. The project is therefore blamed not only for the collapse of the rural economy but also for environmental degradation, human and animal rights abuses, etc.[2] Since then, academia has focused more on this project while other aspects such as the importance of communal rangelands themselves continue to be neglected despite the need to analyze these resources in the economics of range enhancements, grazing systems, and alternate land uses. The only available literature on the value of rangelands mainly focuses on the suitable grazing fee for public land grazing, the main subject being the level of economic benefits accrued by grazing users of public lands.[3] The primary method of assessing the value of communal rangelands has always been to compare them with private rangelands lease rates.[4] This article argues that the average private lease rates may or may not apply in every context, and therefore may fail to present a concrete analysis of the total benefit accrued from the use of communal rangelands especially by poor rural dwellers.

Due to an excessive scholarly focus on specific sectors of subsistence agricultural activities, the importance of rangelands tends to be downplayed. Emphasis has been placed on production, which itself is biased towards a single marketed product: beef. The lack of a precise value for rangelands may explain

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1 Joseph Chaumba, Ian Scoones and William Wolmer, "From Jambanja to planning: The reassertion of technocracy in land reform in South eastern Zimbabwe," *Journal of Modern African Studies* 41, no. 4 (2003); Paul Chibisa, Annamore Ruzive and Clifford Mandipa, "The 2000-2004 Fast Track Land Reform Programme and Biodiversity issues in the middle Save Constituency," (Chinhoyi University of Technology: Chinhoyi, 2010); Emmanuel Ndhlovu "Relevance of Sustainable Livelihood Approach in Zimbabwe's Land Reform Programme," *Africa Insight,* 47, no. 4 (2018): 72-87.

2 Brian Raftopoulos and Ian Phimister, "Zimbabwe Now: The Political Economy of Crisis and Coercion," *Historical Materialism* 12, no. 4 (2004): 355-82.

3 C. K Gee, "Estimating economic impacts of adjustments in grazing on federal lands and estimating federal rangeland forage values," *Technical Bulletin* 143 (1981); Allen Torrel, L.W. Van Tassell, Nail Rimbey, Tom Bartlett, Bagwell Tanak and John Coen, "The value of public land forage and the implications for grazing fee policy," *Agricultural Experiment Station bulletin,* no. 767 (1993).

4 Philani Zamchiya, "A synopsis of land and agrarian change in Chipinge District, Zimbabwe." *Journal of Peasant Studies* 38, no. 5 (2011): 1093-1122; B. Raftopoulos and I. Phimister, "Zimbabwe Now: The Political Economy of Crisis and Coercion," *Historical Materialism* 12, no. 4 (2004) 355-82; B. Raftopoulos, 'The crisis in Zimbabwe.' In *A history from the pre-colonial period to 2008: becoming Zimbabwean,* eds. Brian Raftopoulos and Alois Mlambo (Harare: Weaver Press, 2009): 201–32.

the continued mismanagement of these important sources and their alterations. In Zimbabwe, rangelands have been primarily used for wide-ranging forms of animal production such as subsistence livestock. They have also been very important for wildlife conservation; intensive cropping systems on adjacent higher potential lands have always existed as an appendage in regions such as the lowveld, which receives lower amounts of rainfall. Demographic trends and development processes in Zimbabwe, particularly after the FTLRP, have effected some considerable changes in the management and use of rangelands. The demand for the goods from rangelands has increased exponentially, possibly beyond the ability of this resource base to meet such needs. This article assesses the general value of communal rangelands for households in the Mutandahwe community which is located in the Southeastern Zimbabwe.

In the following sections, the article provides a detailed literature review on communal rangelands and how they are used in rural areas. This is followed by a description of the setting for the study, a discussion of the Sustainable Livelihood Framework as a theoretical perspective used to guide understanding in the study, the research methodology for the study, and the results of the study, respectively. Lastly, the article presents a conclusion and recommendations.

Literature Review on Communal Rangelands

The literature on rangelands has been growing,[5] showing that in every society, the use of rangeland goods and services has provided households with opportunities to make use of free natural goods while they reserve their cash for the acquisition of other household needs that may not be obtainable from rangelands, such as medicine and education, which are also needed in the construction of more stable livelihoods.[6] In many countries, particularly those located in sub-Saharan Africa where rainfall is inadequate and unevenly distributed, the products obtainable from rangelands, such as mushrooms, fruits, roots, leaves, honey, and insects are significant sources of survival especially in times of drought and conflict.

Reviewed literature places the value of communal rangeland resources into three categories. The first relates to the direct-use of rangelands (use value). In this category, emphasis is placed on physical benefits (i.e. fuelwood, poles, ropes, insects, fruits, and so forth) obtainable from rangelands. The second category

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5 Tom Bartlett, Allen Torell, Nail Rimbey, Van Tassell and Weil Mcllum, "Valuing grazing use on public land," *Journal of Range Management* 55 (2002): 426-438; Zolile Ntshona, "Valuing the Commons: Rural livelihoods and communal rangeland resources in the Maluti District, Eastern Cape," *Programme for Land and Agrarian Studies,* Research report no. 13 (2002).

6 Sheona Shackleton, "Livelihood benefits from the local-scale commercialization of savanna resources: A case study of the new and expanding trade in marula (*Sclerocarya birrea*) beer in Bushbuckridge, South Africa," *South African Journal of Science* 100 (2004): 651-657.

is related to the potential use of rangelands by the households located in close proximity (option value). The third category values rangelands just for their mere existence (existence value) — in other words, for the benefits of knowing that certain rangelands exist.[7] People may develop the knowledge of certain types of trees, animals and grasses not because they intend to use them, but simply because they are just located in the proximity.

It is unfortunate that the existing literature on the academic value of rangelands focus primarily on household livestock, at the expense of a wider range of non-livestock use. One could also observe scholarly bias towards the direct uses of rangelands while indirect uses receive limited attention. However, these direct uses may only represent a small portion of communal rangelands' utility, which extends beyond physical products.[8] In order to undertake and produce studies that can influence social policy and be useful for scholarly debates, it is imperative to include the full wide range of economic uses that rangelands provide in the analysis. Communal rangelands in many societies, especially in third world countries, wield manifold functions and are put to different uses by different groups of people and for different reasons.[9] They are also a terrain of conflict over rights and accessibility. Williams posits that the different levels of utilization, the overlapping rights, and the recurrent disputes and negotiations of accessibility rules truly are what characterize communal rangelands use.[10] Williams argues that failing to recognize the rights of all those who make use of rangelands can lead to the monopoly of rangeland resources by the powerful and the greedy, thereby fostering social conflicts.[11] In the post 2007-2008 global financial crisis, most households in the African countryside have experienced displacement as some foreign-based companies, mainly from Europe and North America, as well as from emerging countries, such as China and India, continue to acquire lands with the support of African states. The failure to recognize the rights of local communities has resulted in increased protests over landownership in countries such as South Africa and Namibia. Today, the South African government

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7 Jan Bojo, 'Economic valuation of indigenous woodlands in Zimbabwe'. In *Living with Trees: Policies for Forestry Management in Zimbabwe* eds. Bradley P and McNamara K., (World Bank, Technical Paper No 210. World Bank, Washington D.C, 1993).

8 Lucy Emerton, "Values and Rewards: Counting and Capturing Ecosystem Water Services for Sustainable Development," *IUCN Water, Nature and Economics Technical Paper,* no. 1 (IUCN — The World Conservation Union, Ecosystems and Livelihoods Group Asia, 2005).

9 Ben Cousins, "Invisible capital: The contribution of communal rangelands to rural livelihoods in South Africa," *Communal rangelands in Southern Africa: A Synthesis of Knowledge. Proceedings of a symposium on policy making for the sustainable use of southern African communal rangelands,* eds. T. D. de Bruyn and P. F. Scoging, (Department of Livestock and Pasture Science, University of Fort Hare, 1998): 39-69.

10 Timothy Williams, "Multiple uses of common pool resources in semi-arid West Africa: A survey of existing practices and options for sustainable resource management," *Natural Resources Perspectives,* no. 38 (1998).

11 Ibid.

continues to lose court battles with communities whose rangelands were leased to private actors by the state. In Zimbabwe, resistance to the acquisition of rangelands by foreign-based actors has triggered increased poaching by communities in the proximity.

There are some scholars who posit that there are direct and non-use values of communal rangelands.[12] The direct uses of rangelands include the acquisition of raw materials and tangible products (fuelwood, wild fruits, and herbs) which are used by households for production, consumption and trade.[13] The direct uses of rangelands may also include non-consumables such as recreation, tourism and research, education, and aesthetic benefit.[14] Shackleton and Shackleton[15] conducted a study in Bushbuckridge, South Africa and found that participants made crafts and obtained medicine, vegetables, and many other items from rangelands. In Zimbabwe, it was established that households harvested insects, roots, ants, and fruits from rangelands.[16] In Niger, Williams found that during dry years, when the millet crop failed, wild fruits are collected for food.[17]

One important component cited in literature is the accessibility of pastures. Livestock is kept for a variety of purposes by the rural folk - draught power, manure, social exchange (*lobola*), milk, cash, and meat.[18] The success of livestock farming is dependent on the availability of pasture and forage as naturally available goods and services. In fact, livestock farming has been the source of both food production and cash generation among the African indigenous people for centuries. Indigenous peoples in Sub-Saharan Africa such as the Tshangana, Zulu, and Ndebele have kept mostly chicken, goats, cattle, donkeys, and sheep for various reasons in countries

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12 Sheona Shackleton, "Livelihood benefits from the local-scale commercialization of savanna resources: a case study of the new and expanding trade in marula (*Sclerocarya birrea*) beer in Bushbuckridge, South Africa".

13 Ruth Hall and Ben Cousins, "Livestock and the rangeland commons in South Africa's land and agrarian reform" *African Journal and Forage science*, (2013): 77-93.

14 Mike Campbell, Dale Dore, Martin Lucker, Billy Mukamuri and James Gambiza, "Economic comparisons of livestock production in communal grazing lands in Zimbabwe," *Ecological Economics* 33, (2000): 413-438.

15 Charlie Shackleton and Sheona Shackleton, "Direct use values of savanna resources harvested from communal savannas in the Bushbuckridge lowveld, South Africa," *Journal of Tropical Forest Products* 6, no.1 (2000): 28-47.

16 Emmanuel Ndhlovu, "An analysis of household livelihoods under the fast track land reform programme in Chiredzi, Zimbabwe," (University of South Africa: Pretoria, Masters Thesis, 2017).

17 Timothy Williams, "Multiple uses of common pool resources in semi-arid West Africa: a survey of existing practices and options for sustainable resource management."

18 Gustav Duvel and David Afful, "Sociocultural constraints on sustainable cattle production in some communal areas of South Africa," *Development Southern Africa* 13, no. 3 (1996): 429-440; Koki Teshigori, "Recent Changes in Communal Livestock Farming in North- western Namibia with Special Reference to the Rapid Spread of Livestock Auctions and Mobile Phones," *MILA Special Issue* (2014):39-48.

such as Zimbabwe, South Africa, and Mozambique.[19] For example, cattle and goats were kept for household food production such as milk and meat. Most households in the region would keep at least ten goats while more affluent households would keep as many as one hundred of them.[20] The indigenous peoples in the region resorted to nomadic lifestyles as they tried to pursue the scarce rangeland resources which continued to be under pressure due to erratic climate and environmental conditions.[21] Rangelands are the major sources of pasture and water for livestock in semi-arid Southern Africa.[22] The inadequacy of livestock grazing resources and their unstable availability renders rangelands a vital resource for livestock production in the region.

Rural households also harvest fuelwood from communal rangelands. Wood is used as a cooking and warming energy source.[23] Rural households get most of their food from their agricultural activities including land cultivation and livestock. However, a sizable part of the human diet still comes from wild plants which provide vitamins, calcium, proteins[24] and animals.[25] The trees offer wild fruits, shade, and leaves, and also serve important medicinal purposes. For instance, Gelfand, Mavi, Drummond, and Ndemera[26] found that in Zimbabwe, approximately 500 species of trees were used for medicinal purposes by traditional healers. Cunningham and Sargo approximated that close to 700 tree species were being used for traditional medicines in South Africa.[27] Several studies conducted elsewhere on the continent also demonstrated that the majority of indigenous peoples still made use of plants for health reasons.[28] Herbs across the region are commonly used as drugs for various ailments – flu, wounds, stomachaches, toothaches, and more. Studies have indicated, however, that the majority of those who still rely on traditional medicine

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19 Duvel, an Afful, "Sociocultural constraints on sustainable cattle production in some communal areas of South Africa."

20 Ibid.

21 Ibid.

22 William Cunningham and Mary Cunningham, *Environmental Science: A global concern*. 3rd edition, (WCB Publishers. United States, 1995).

23 Ndhlovu, "An analysis of household livelihoods under the fast track land reform programme in Chiredzi, Zimbabwe".

24 Barbara Becker, "The contribution of wild plants to human nutrition in the Ferlo, Northern Senegal," *Agroforestry Systems* I (1983): 257-267.

25 Jaap Arntzen, "*Economic Valuation of Communal Rangelands in Botswana: A Case Study,*" CREED Working Paper Series No.17, (IIED, London, 1998).

26 Michael Gelfand, Chirandu Mavi, Robert Drummond and Sekai Ndemera, *The Traditional Medical Practitioner in Zimbabwe* (Harare: Mambo Press, 1985).

27 Cunningham, and Cunningham, *Environmental Science: A global Concern.*

28 Kartha Chandrasekharan, "Terminology, definition and classification of forest products other than wood," *presented at the FAO/Government of Indonesia Expert Consultation on Non-Wood Forest Products, Yogyakarta*, (17-27 January 1995); Charlie Shackleton and Sheona Shackleton, "Direct use values of savanna resources harvested from communal savannas in the Bushbuckridge lowveld, South Africa".

are poor and live in rural areas.[29]

Rangelands also provide rural households with wood that is used to make handcrafts, chairs, doors, and more. In Zimbabwe, items such as mortar and pestles, ox yokes, and spoons are made from wood. Important items such as baskets and mats are also made from reeds that can be found in the rangelands. Households also harvest poles, ropes, and thatch for the construction of cattle kraals, chicken runs, and huts.[30]

The other importance of communal rangelands established in the reviewed literature is associated with recreation and tourism. Kengen believes that the recreational values of rangelands have a greater appeal to urban dwellers, particularly those from industrialized countries in comparison to people who live in and rely on the communal rangelands for survival.[31] While outsiders may view rangelands as recreational space, for most local people, rangelands constitute a source of life as they depend on them for their daily requirements. Rangelands can serve as places for relaxation and are also essential for spiritual purposes, a view supported by Farber, Constanza, and Wilson.[32] They are dwelling places for ancestral spirits, burial grounds, and traditional ceremonies. This potentially explains why some people can be so hostile when they think certain rangelands are under threat. In the Sangwe communal area in Chiredzi, Zimbabwe, for instance, the invasion of the Sangwe farm was initiated by the Gudo local community on the basis of a long standing dispute they had with Mr Otterson, a commercial farmer whose Wildlife Conservancy had fenced in the people's traditional sacred sites, a burial site for traditional leaders and a sacred pool were they harvested fish.[33] The aforementioned case is unique in comparison to most nearby farms that were acquired under Zimbabwe's hurried FTLRP (for example, Fair Ranch, Chizvirizvi, Mhandamabwe and Uswaushava), where the invasions were led by war veterans.

Indirect benefits of communal rangelands can also be observed; as ecological sites, they are imperative in maintaining water quality, managing river and stream water flows and storage, controlling flooding, retaining nutrients, and stabilizing the

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29 Gladys Mutangadura, Duduzile Mukurazita and Helen Jackson, "A review of household and community responses to the HIV/AIDS epidemic in the rural areas of sub-Saharan Africa." Geneva, (UN-AIDS, 1999).

30 Ndhlovu, "An analysis of household livelihoods under the fast track land reform programme in Chiredzi, Zimbabwe."

31 Sebastiao Kengen, "*Forest valuation for decision making: lessons of experience and proposals for improvement,*" (Rome: Food and Agriculture Organisation of the United Nations, 1997).

32 Stephen Farber, Robert Constanza and Matthew Wilson, "Economic and Ecological concepts for valuing ecosystem services," *Ecological Economics* 41 (2002): 375-392.

33 Joseph Chaumba, "Opportunities for and constraints on crop production within Zimbabwe's fast track resettlement programme: A case study of Fair Range Estate, Chiredzi District, South Eastern Zimbabwe," (University of Western Cape: Programme for Land and Agrarian Studies, 2006).

microclimate.[34] Scholars such as Kengen posit that the ecological value of communal rangelands (i.e. clean environment, watershed protection, protection of biodiversity and carbon sequestration) is possibly the key component of indirect use value.[35] Pearce found that carbon storage wielded a high economic value when compared to other use values.[36] The hydrological role of rangelands has a direct impact on the agricultural production of households in the surrounding areas.

There are also a vast number of non-use benefits to communal rangelands. Non-use benefits are those that people can benefit from without having direct contact with rangelands. Such benefits are not clearly linked to the use of the rangelands but are dependent on the quantity and quality of the resources.[37] For instance, households can take advantage of the oxygen produced by rangelands even though they did not resettle in the proximity of rangelands. Pearce and Turner point out that existence value is realized when people find benefits that they do not rationally anticipate.[38] Fredman defines benefits of this nature as a non-use value only associated with the existence of a resource.[39] As such, McNeely posits that the vast number of the benefits derived from existence values are being enjoyed by "free riders," who access them without having to pay the costs involved.[40] Such free riders may be citizens, but are mostly foreigners. The conservation of mountains and wildlife is more exciting for urban dwellers who might find these resources as a luxury rather than for the rural folk who constantly lose livestock to carnivores or crops to herbivores that hide in these mountains.

Setting for the study

The study was conducted in Zimbabwe, which is one of the 14 countries composing

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34 Lucy Emerton, "Values and Rewards: Counting and Capturing Ecosystem Water Services for Sustainable Development."

35 Kengen, *Forest valuation for decision making: lessons of experience and proposals for improvement*.

36 David Pearce, "How valuable are The Tropical Forests? Demonstrating and Capturing Economic Value as A Means of Addressing the Causes of Deforestation," *Seminar paper for Conseil d'Analyse Économique, Seminaire Economie de L'Environnement, Et du Developpement Durable,* (Paris, December 2001).

37 Adesina Seidi, *Assessing the total economic value of ranching in mountain communities: An overview*. Economic Development Report, (Colorado State University. Colorado, 2006).

38 David Pearce and Richmond Turner, *Economics of natural resources and the environment*. (Harvester Wheatsheaf: New York, 1990).

39 Peter Fredman, "The Existence of Existence Value. A Study of the Economic Benefits of an Endangered Species," *Journal of Forest Economics*, 1 (1995): 307–326.

40 Jeffrey McNeely, "Biodiversity: Some issues in the economics of conservation," in *The price of forests: Proceedings of a seminar on the economics of the sustainable use of forest resources*, ed. A. Agarwal (New Delhi: Centre for Science and Environment, 1992): 125-131.

the Southern Africa Development Community (SADC). The country is located between the Zambezi and Limpopo rivers. In the year 2018, approximately 16.913.261 million people lived in Zimbabwe.[41] The inhabitants of Zimbabwe spread over an area of approximately 96.213.120 km^2, the majority of which live in rural areas. As of 2018, only 31.1% of the country's population (approximately 5.252.850 people) lived in urban areas while the rest are located in the countryside where the population density is 44 per km^2 . In the same year, 70% of the population lived in poverty.[42] The country is dominated by two tribes: the Mashona and the Matabele. Other ethnic groups include the Venda, Tshangana, Tswana, Tonga and many others. In the Mutandahwe community, two ethnic groups are dominant: the Ndau and the Tshangana.

The Tshangana people have always been seen as being primitive, stubbornly conservative and isolated.[43] They are considered as a reflection of primitive old African indigenous peoples characterized by cultural distinctiveness from the rest of the population.[44] This is possibly because of the male and female circumcisions, which are not practiced by other tribes in Zimbabwe. Mutandahwe is located in the newly established Checheche District. The village was established in 1981. It is bordered to the west by the Save River, to the east by some vast expanse of land, controversially owned by Billy Rautenbach of the Chisumbanje Ethanol Estate. To the north, the area is roughly demarcated by the Maguranjeve Save tributary while to the south it is bordered by some mountain ranges and a vast expanse of rangelands previously owned by the Communal Areas Management Program for Indigenous Resources (CAMPFIRE). The area is now owned by the community. These rangelands are the focus of this article.

Theoretical Framework

The Sustainable Livelihoods Framework (SLF) posits that households do not only rely on agricultural activities or wages but also on a complex mix of diverse activities, several of which are made possible by communal rangelands.[45] Ellis writes that:

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41 Worldometers, Population of Zimbabwe: 2018 and historical (2018), accessed March 3, 2018).

42 Zimbabwe Statistics, *Rural poverty in Zimbabwe*, (2018), accessed June 26, 2018, www.ruralpoverty.org.

43 Baxter Tavuyanago, Nicolas Mutami and Kudakwashe Mbenene, "Traditional Grain Crops in Pre-Colonial and Colonial Zimbabwe: A Factor for Food Security and Social Cohesion among the Shona People" *Journal of Sustainable Development in Africa*, 12, no. 6 (2010): 1-8; Raftopoulos, Brian and Mlambo, Alois. (eds). *Becoming Zimbabwe, A History from the Pre-Colonial Period, to 2008*. (Harare: Weaver Press, 2019): 98-117.

44 Alois Mlambo, *A History of Zimbabwe* (Cambridge University Press: New York, 2014).

45 Diana Carney, *Sustainable rural livelihoods: What contributions can we make?* (DFID. London, 1998).

"A livelihood comprises the assets (natural, physical, human, financial and social capital), the activities, and the access to these (mediated by institutions and social relations) that together determine the living gained by the individual or household."[46] Households rely on five broad capital assets:

- *Natural capital*: the natural goods (water, wind, land, forest resources);
- *Social capital:* the social resources (social networks, relationships of trust, access to institutions of society);
- *Human capital:* include education (formal and informal), local ecological knowledge, skills and good health to be able to work;
- *Physical capital:* availability of productive assets (equipment, oxen, roads, communication infrastructure, and so forth);
- *Financial capital:* including savings, supplies of credit, or regular remittances and pensions.[47]

A livelihood is sustainable when it can endure and recover after undergoing stress and shock.[48] A desired livelihood outcome is an increase in income, improved living standards (in terms of food availability, education, health), reduced exposure to living challenges, and improved sustainability of the environment.[49] With regards to rangelands, families in rural areas rely on a variety of activities to survive, such as off-farm activities, rangelands collections, crop and livestock production.[50] The activities adopted by families largely depends on the availability of the five capital assets.

The SLF presents an essential platform for understanding the importance of communal rangelands in the lives of rural families. Meinzen-Dick and Adato consider rangelands resources a crucial aspect of the natural capital available to rural

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46 Frank Ellis, *Rural Livelihoods and Diversity in Developing Countries*, (Oxford University Press: Oxford, 2000): 10.

47 Ian Scoones, "Livelihoods perspectives and rural development." *The Journal of Peasant Studies*, 36, no. 1 (2009): 171-196.

48 Ibid.

49 Ibid.

50 Philip Bradley and Peter Dewees, "Indigenous woodlands: agricultural production and household economies in the communal areas," in *Living with Trees: A Future for Social Forestry in Zimbabwe, ed.* P. Bradley and K. McNamara, (World Bank: Washington, 1993): 63-127.

families.[51] Rangelands provide goods and services that can be directly consumed or sold to generate income, thus increasing the financial capital. Human capital assets include the knowledge family members have about resources obtained from rangelands and the skills they have in harvesting and processing such goods.[52] Social capital assets include institutions that regulate the use of rangelands by families, such as CAMPFIRE which determines patterns of access to resources. They protect resources from overuse and preserve ones that are culturally or spiritually significant. Physical assets such as huts, granaries, and cattle kraals are constructed from products obtained in communal rangelands. Cavendish argues that the central role played by rangelands in rural lives is often overlooked because rangelands activities generally take place outside of the formal economy.[53] Because they can often rely on wild fruits, insects, vegetables, and animals present in rangelands even during times of drought or floods, rangelands are crucial for the prosperity of many rural families. Indeed, rangelands ensure that they cope with external stresses and shocks.

Research Methodology

In order to meet the objectives of the study, the researcher adopted a mixed methods approach. The study was both exploratory and descriptive. A total of 200 questionnaires were completed with household participants that were randomly selected in the Mutandahwe Village. The questionnaire was comprised of seven sections, the first of which generally focused on gathering demographic details including the ages, gender, education levels, numbers of children, and marital status of participants. Sections two to six — Human, Natural, Financial, Physical, and Social capital — sought to gather the various capitals available to households as espoused in the SLF. The last section was meant to gather general comments by participants. In-depth face-to face interviews were also conducted with four village heads who acted as key informants. Additionally, the current Chairman of the Vimbanai irrigation scheme which is located in the community also participated in the study, as he is considered knowledgeable by his community. Thus, a total of five key informants took part in the study. Letters, instead of actual names are used for key informants in consistency with the anonymity ethical requirements of the study. The interviews focused on the five types of capital covered by the questionnaire.

Data was collected in May 2018 with permission sought from the four

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51 Ruth Meinzen-Dick and Michelle Adato, "Applying the sustainable livelihoods framework to impact assessment in integrated natural resources management," *Workshop on Integrated Management for Sustainable Agriculture, Forestry and fisheries*, (Cali, Colombia, 28-31 August 2001).

52 Caroline Ashley and Diana Carney, *Sustainable Livelihoods: Lessons from Early Experience*. (Department for International Development: London, 1999).

53 William Cavendish, "Empirical regularities in the poverty-environment relationship of rural households. Evidence from Zimbabwe," *World Development* 28, no. 11 (2000): 1979-2003.

village heads and the participating households. Data from the sampled households was first entered on each questionnaire. The descriptive data focused on simple statistical interpretation and analysis using frequencies and percentages. This made it easier to detect and observe patterns that emerged on the data. Thematic analysis was used for qualitative data. The themes mirrored the five categories required for a livelihood to be sustainable (natural, physical, human, financial and social capital). The integration of quantitative and qualitative data was achieved through the integration and the comparison of the two sets of data and results. The central perception was that integration of quantitative and qualitative data maximizes the strengths and minimizes the weaknesses of each type of data.[54]

Research Findings and Discussion

This section is a presentation and discussion of the data that was collected in the Mutandahwe communal area in the Checheche District. It is divided into five themes which mirror the five categories required for a livelihood to be sustainable.

Human capital

Human capital stands for education (formal and informal) skills, knowledge, ability to work and good health which all enable households to pursue their livelihood strategies and achieve their livelihood objectives.[55] Labor is a crucial production resource for households. Thus, socio-economic aspects such as age and education wield much influence on the value placed on rangelands goods. There was an average of four family members per household, most of whom were children. This is partly explained by the huge rural-urban migration trends in Zimbabwe in which most males have migrated either to cities or outside the country in search of employment opportunities. In-depth interviews with key informants revealed that most able-bodied young men and women worked in towns and cities, while a minority worked outside the country.

The household size had an important impact on the consumption of rangelands goods and services. Members used these resources differently depending on age and gender. Adult males obtained building materials (poles, thatch, ropes, planks for doors, and so forth) for the construction of huts, cattle kraals, and fences. Adult females collected wood, water, and vegetables. According to Amacher,

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54 Jane Tillman, Jill Clemence and Jennifer Stevens, “Mixed Methods Research Design for Pragmatic Psychoanalytic Studies,” *Journal of the American Psychoanalytic Association*, 59, no. 5 (2011): 1023-1040.

55 Robert Chambers and Gordon Conway, *Sustainable rural livelihoods: Practical concepts of the 21st Century*. (Brighton: Institute of development studies: University of Sussex, 1992).

Hyde and Joshee larger households use more woods.[56] This assertion is however, challenged by Shackleton and Shackleton who argue that the quantity wood used for warming and cooking is related more to the number of meals prepared in a day than the number of household members.[57] In the study, only 36% of the participants were male, while the other 64% was female. This indicates that it was mostly the male population that migrated from the village.

As observed by Cavendish, the use of communal rangelands is strongly linked to gender. [58] The results gathered in the study (Table 1) reveal that 84% of the participants assigned the role of looking after the livestock to male members of the household while only 16% assigned it to female members. A total of 72% of the participants linked the role of gathering fruits and vegetables to women while only 28% of the participants linked it to men. Men were also associated with the collection of wood for building material (88%), crafts (78%) and the collection of meat (82%). Key informants were asked to explain why certain duties were being performed by both genders. Key informant **B** indicated that:

> It is the duty of men to hunt in our culture. So, men go out, bring meat or whatever they find. However, women also bring fish, *masonja* (mopane worms) and some other nice stuff. That is how it happens.[59]

It was also found that both sexes collected resources like reeds for baskets, huts, mats, and medicine for traditional use. Key informants also confirmed the presence of many female and male traditional healers in the Mutandahwe community.

Table 1: Communal rangelands utilization by gender (n=200)

Item	Male (Frequency)	Female (Frequency)
Looking after livestock	168	32
Fruits and vegetables	56	144
Firewood	48	152
Construction material	176	24
Crafts	156	44
Meat/insects/worms	164	36

56 Greg Amacher, William Hyde and Barat Joshee, "Joint production and consumption in traditional households fuel wood and crop residues in two districts in Nepal," *Journal of Development Studies* 30 (1993): 206-225.

57 Charlie Shackleton and Sheona Shackleton, "Direct use values of savanna resources harvested from communal savannas in the Bushbuckridge lowveld, South Africa."

58 Cavendish, "Empirical regularities in the poverty-environment relationship of rural households. Evidence from Zimbabwe."

59 Interview with key informant **B**, May 7, 2018.

Education is one of the most important elements which can boost the sustainability of household livelihoods. Clarke and Grundy posit that people's knowledge of rangeland resources, along with their skills in gathering and processing these goods are an important part of the human capital asset.[60] The levels of education and training are crucial for family members to manage their resources and access services, such as those offered by extension officers.

Table 2: Education levels of participants (n=200)

Level	Percentage
Primary	34%
Secondary	52%
College	4%
University	-
None	10%

Table Two indicates that the level of literacy of participants is high and that most participants had secondary education. A total of 34% of the participants had primary school education, 52% had secondary school education, 4% had attended colleges while only 10% were not formally educated (they did not complete grade seven). Considering these education levels, the poor living standards of the participants may be linked to the country's volatile socio-economic environment since the inception of land distribution without compensation. The inception of the FTLRP saw the beginning of hyperinflation and sharp increases in prices of all basic commodities, unemployment, and an inflation rate that rose from 32% in 1998 to 173% in 2004, 605% in 2005, and approached 1600% in the year 2007.[61] In 2008, the country abandoned its own currency, and adopted the American dollar in response to its continuous financial challenges. One could argue that the education and the possession of various skills (fishing, fruit processing (*marula*), honey collection, and more) by families in this community enabled them to pull through in the face of the deep socio-economic challenges that Zimbabwe currently faces.

60 Phillipa Clarke and Emely Grundy, "The socio-economics of forest and woodland resource use," *Indigenous forests and woodlands in South Africa: Policy, People and Practice*, ed. M.J. Lawes, H.A.C. Eeley, C. M. Shackleton, and B.G.S. Geach,(University of KwaZulu-Natal Press. Scottsville, 2004): 167-193.

61 World Factbook, Zimbabwe Economy 2008. CIA. Washington (2018), accessed September 23, 2016, http://www.theodora.com/wfbcurrent/zimbabwe/zimbabwe_economy.html.

Financial capital

Financial capital is essential for ensuring the sustainability of household livelihoods. However, it has been noted that in rural areas, financial capital in the form of money is very scarce and typically spent quickly.[62] Rural households have multiple income sources, as evidenced in Table Three, where 4% of the participants depended on formal salaries, 44% on remittances from relatives, 14% on fishing in the Save river, 10% on hunting, 12% on livestock sales, 10% on crop sales, and 2% on wood carving.

Table 3: Households' sources of income (n=200)

Activity	**Percentage**
Formal salary	4%
Remittances	44%
Fishing	14%
Hunting	10%
Livestock sales	12%
Crop sales	10%
Wood carving	2%
Other	4%

Table Three indicates that most of the sources of incomes in the case study were linked to rangelands (hunting, fishing, wood carving, and livestock). This evidence is consistent with Fisher's argument, who also found that families in the Southern Malawi region derived about 30% of their total income from the forests. [63] This shows that rangelands are not only important to the Mutandahwe community, but that they are also highly valuable to other people in different countries on the continent. Discussions with key informants also revealed the important role played by the sale of crops and livestock in paying school fees, buying food, paying for health services, and other household requirements. This evidence was supported by key informant **E** who mentioned that:

> In an area such as this one where rainfall patterns have changed a whole lot, where rainfall amounts are irregular, where political systems are failing and where religious systems are on the verge of collapse, survival is a matter

62 Michael Mortimore, *Roots in the African Dust—Sustaining the Drylands* (Cambridge University Press: Cambridge, 1998).

63 Monica Fisher, "Household welfare and forest dependence in Southern Malawi," *Environment and Development Economics* 9, (2004): 135-154.

> of what an individual family owns. Most families depend on farming, others on selling the small amounts of livestock we have. But we all depend on the rangelands for fuelwood and for many important requirements.[64]

Key informant participants also considered livestock a crucial component of financial capital, which, as argued by Ellis, acts as a store of wealth.[65] Cattle, goats, sheep, and donkeys were some of the livestock species that were kept by the households. Because of their numerous purposes (i.e. ploughing, meat, and marriage (*lobola)* exchange), cattle were seen as most important. Key informants also reported that some households kept pigs while others, due to religious commitments, did not.

Natural Capital

Most households in Sub-Saharan Africa are located in rural areas, where they depend on land as natural capital to engage in agricultural activities for the development and sustenance of their livelihoods.[66] Campbell and Luckert also observed that incomes in most rural communities in Africa are closely linked to natural resources: land for agricultural activities and animal husbandry; woodland for fuel; and water for household consumption—livestock watering and small-scale irrigation.[67] These are various activities in which communities' engagement can reduce or increase the quantity and quality of a resource. The various crops grown by the community are summarized in Table Four.

Table 4: Major crops grown by households (n=200)

Crop	Percentage
Maize	100%
Sorghum	34%
Millet	16%
Cotton	30%
Sunflower	6%
groundnuts	4%
Other	100%

64 Interview with key informant **E**, May 12, 2018.

65 Ellis, *Rural Livelihoods and Diversity in Developing Countries.*

66 Ndhlovu, "An analysis of household livelihoods under the fast track land reform programme in Chiredzi, Zimbabwe."

67 Campbell and Luckert (eds.), "Economic comparisons of livestock production in communal grazing lands in Zimbabwe."

It was indicated that all households in this community grew maize for consumption and for sale when they had surpluses. However, as indicated by key informants, households did not only grow maize because of the crop's susceptibility to droughts. They also grew sorghum (34%), millet (16%), cotton (30%), sunflower (6%), and groundnuts (4%). All households also grew cucumbers, pumpkins, cowpeas, and other crops. Households also directly harvested wild fruits from trees such as the baobab (*muuyu*) and monkey bread (*musekesa*) trees which they grounded into flour that would be used to prepare different kinds of food and drinks. In addition, the leaves of a number of trees would be consumed to relieve hunger.[68]

Physical Capital

The resources from communal rangelands are an integral part of the natural capital which households use to acquire or boost their other capitals. For instance, rangelands products can be sold to generate money, thereby making a contribution to the financial capital of the households. The physical assets of households include their houses or huts, farming and non-farming equipment, bridges, and more. These assets provide households with an opportunity to develop and strengthen their livelihoods.[69] They are often built from goods found in rangelands. In the study, key informants mentioned that wood collected from rangelands was used by households for building, for making mortars and pestles, axe handles, cooking sticks, mangers, bow and arrows, walking sticks, handles for hoes, and oxen yokes. This was supported by the data collected through questionnaires where 100% of participants mentioned the importance of wood in the construction of huts and cattle kraals. A total of 80% of participants also mentioned the importance of wood in the burning of bricks that are used for the construction of houses.

Participants also mentioned a spiritual connection between land and their livelihoods. It was reported that household buried their dead in the land, not only as boundary marks, but also to make sure that the dead can always remember that the lives of the living are based on land. According to one participant mentioned that:

> This will enable the dead – our progenitors, to send rains on the land so that we can live by the productors coming from the land. Land to us is therefore, home, food health, education, economy, and everything that we consider as good and health. Land and everything that is on it is matter.[70]

This view was also supported by another participant who reported that:

> We protect the land, the trees, the rivers, streams, valleys, mountains

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68 Interview with key informant **D**, May 11, 2018.

69 DFID, "The UK White Paper on International Development – and beyond," (London, 1997).

70 Interview with key informant **C**, May 10, 2018.

> inasmuch as these resources also protect us. They give us food all the time. Our livestock and flocks graze and drink from our lands, our rangelands.[71]

In this community, the physical capital is thus, not only vital as a livelihood development resource, but also as the abode of the ancestors who are believed to send rain and other forms of protection.

Social Capital

Institutions are an important part of the social capital available to households that use communal rangeland. Local institutions regulate how rangelands are used by people. They play a crucial role in the determination of patterns of access to resources, protection of valuable resources from over-use, and maintenance of essential resources based on cultural and spiritual traditions.[72] The key informants mentioned that CAMPFIRE is one of the most important institutions which ensures that people do not over-use rangelands resources. This institution prohibits the cutting down of big trees and fruit trees, it discourages clear-felling, grass burning, and also mitigates soil erosion-inducing activities, such as tree log dragging and farming along rivers and streams. The institution rather, encourages the collection of dry wood for fuel instead of felling live trees.

The village heads also represent another important establishment that ensures that households use rangelands according to the prescribed rules and regulations. With ancestors believed to be operating from the nearby hills and streams where bygone village heads, such as Mamveemvee, Mufira, and Chiputise were buried, current village heads prosecute and fine offenders depending on the magnitude of their damage.[73] A total of 75% of participants acknowledged that CAMPFIRE was the most important institution for rangelands conservation while 25% indicated village heads as better placed for this purpose. These two institutions ensure that rangelands are used in ways that are not only sustainable, but that are also sustainable for the livelihoods of households who depend on these rangelands.

Conclusion

Communal rangelands are a crucial livelihood development and sustenance strategy in the Mutandahwe communal area. This was revealed by the household participants as well as the key informants of the study. In the face of the deep socio-political and economical challenge that Zimbabwe is facing, households in Mutandahwe depend on communal rangelands for building material (poles, planks, bricks, ropes, and so forth), pastures and water for livestock, fuelwood for energy, and wood for furniture. Households also collect vegetables, insects, and roots which they used

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71 Interview with key informant **B**, May 8, 2018.

72 Clarke and Grundy, “The socio-economics of forest and woodland resource use.”

73 Interview with key informant **B**, May 8, 2018.

to expand the food supplies. The article also reviewed literature on the importance of rangelands. The SLF, which provides a helpful basis for understanding the role of rangelands in the lives of rural families, was used in the analysis of the results. The article described the five capitals (human, social, financial, physical, and natural capital) of the SLF that families relied on. It was concluded that rangelands form a natural capital available to families which can be directly consumed or sold to generate income (thus, contributing to financial capital). It is recommended that the state, private actors, and other non-profit organizations work together in ensuring that the Mutandahwe community can engage with environmental conservation actors to ensure that rangelands are conserved for future generations. In trying to come up with such methods, research should focus on how poor households can best be assisted to put their labor to productive use in both agricultural and non-agricultural subsistence activities to reduce the pressure placed on rangelands.