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Marginal Forests and Contested Livelihoods: A Case Study of Chesa Forest in the Dry lands of Western Zimbabwe

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Abstract: This paper analyses the legal, economic and social complexities that the community living in Chesa forest has had to contend with since the Independence of Zimbabwe in 1980. The research for the study was qualitative in nature and was done through interviews, questionnaires, focus group discussions and observations. The paper establishes that there are ambiguities and discord emanating from State institutions about the community living in Chesa forest. The Forestry Commission regards them as illegal squatters, while the District Administrator, the local leadership and the Umguza Rural District Council give this community some form of recognition. These contradictions have led to the lack of provision of basic infrastructure and facilities to the community living in Chesa forest. This leads to environmental degradation, poaching of wildlife and wood. The paper concludes that the conflicting interests of the State have led to an institutional framework which is not clear and this has led to insecure land and forest rights for the community living in Chesa forest. The study recommends policy reform that will recognize the rights of poor forest communities and sustainable forest governance that will ensure the sustainable livelihoods of the affected people.
Keywords: Sustainable livelihoods, forest governance, forest rights, land rights, forest resources

INTRODUCTION

Marginal forests in drylands are increasingly falling under commercial, social and climate change pressures in Southern Africa, and beyond [1]. Privatization of marginal forests through government policies and projects is a significant phenomenon that is disenfranchising rural communities and entrenching the ruralisation of poverty, political marginalization, and gender disparities [2]. The integrity of forests is often compromised in the process, while livelihoods of those living off marginal forests increasingly become vulnerable and fragile. The uneasy relationship between forests and the public means that adaptability in managing such ecosystems is urgent [3]. Collaborative management, devolution and Community-Based Natural Resources Management (CBNRM) are some options that have been implemented to reconcile people and forests [4]. This paper explores the impact of state policies with regard to the Chesa Forest in western Zimbabwe. Specific attention is given to the exclusion and marginalisation of poor Chesa 'land occupiers' who have been reduced to squatters since 1915. The paper also investigates the strategies used by Chesa people to cope with hostile Forestry Commission initiatives in Chesa Forest. Focus will be on the impact of citizen participation on adaptive management options at Chesa Forest. Ultimately, the study seeks to understand how contested forest rights affect the adaptability of forest management options and livelihoods decision-making over time.

Rationale

The concept of sustainable forest management and efforts to achieve it has continued to gather momentum around the world in the past few years. In light of this, various models of governance systems have been put in place in many countries in attempts to solve environmental challenges. Several studies similar to this one have been made with a view to improve forestry governance and the lives of forestry dependant people. One such study entitled "Poverty in Gwai Forest Reserve, Zimbabwe: 1880-1953" was made by Kwashirai [5]. The study examined the problem of poverty amongst forest occupants in the Gwai Forest Reserve of North Western Matabeleland, Zimbabwe, from 1880-1953. The study concluded that the forestry governance in place then excluded African occupants' access to land and forest products like timber, firewood and grass. Low wages paid to some of the forest occupants who were employed by commercial timber logging companies exacerbated the situation. The study however failed to recommend improvements in forestry

governance as poverty and exclusion of forest dependant people, persists up to today in many dry land forests. The study period was 1880-1953 hence a lot of things have changed therefore justifying the need for another study.

The Food and Agriculture Organisation - FAO [6] also compiled a handbook entitled "*Guidelines on sustainable forest management in dry lands of sub-Saharan Africa."* The guidelines argue that poverty and environmental degradation are major problems in dry-land Sub-Saharan Africa where forests and trees contribute significantly to rural livelihoods. Dry land forest occupants have developed resilient and adaptive livelihood systems that enable them to survive under difficult conditions. The paper urges forest authorities to design strategies that support and promote the local coping measures with a view to achieve sustainable use of resources and reduction of poverty. However the guidelines are general and are not specific. They fail to identify the environmental problems and factors that are specific to Chesa or any dry land forest in Zimbabwe hence justifying the need for another study.

Another study by Mapedza and Mandondo [7] entitled "*Environmental Governance in Africa. Co-Management in the Mafungautsi State Forest Area of Zimbabwe – What Stake for Local Communities?"* sought to establish how local communities benefitted in community participatory forest projects. The study concluded that although the aim of forestry co-management is to shape the political economy in such a way that local communities would benefit, in reality benefits to local communities are limited and accrue mainly to committee members and their associates. The study however failed to recommend improvements that can be made so that co-management incorporates the majority of forest dependent people in decision making so that they may benefit from forest resources. This study seeks to understand the impact of public policies on forest governance and livelihood outcomes for forest dependent communities.

Objectives of the study

The study seeks to achieve the following objectives:

- To investigate livelihood pathways within Chesa Forest Community, focusing on poverty reduction and food security in the context of contested/insecure forest and land rights.
- To explore the nature and outcomes of institutional dynamics in forest governance in Chesa forest.
- To determine the nature and extent of climate change adaptation in Chesa Forest.

LITERATURE REVIEW

Global Perspective on Forests

According to UNDP, UNEP, World Bank and WRI [8] forests are providers of environmental services to nature in general and to humans in particular. Forests provide industrial land, wood-fuel, non-wood forest products such as gum, fibre, food, medicines. Forests assist soil generation, soil and water conservation, purification of air and water, nutrient recycling, maintenance of biological diversity, mitigation of climate change. Forests also provide employment and income, recreation, protection of natural and cultural heritage. In view of the important role played by forests, the Stockholm Conference of 1972 emphasized the need for sound land and forest use policies, constant monitoring of the state of the world's forests and the introduction of sound forest governance. Global periodic assessments of changes in forests reveal that the forest area in developed countries has stabilized and is expanding; however, deforestation has continued to increase in developing countries. The 1980 Tropical Forest Resources Assessment carried out by FAO and UNEP revealed that the world was losing 11, 3 million ha of forest per year. The FAO [6] states that "in 1990 the world had 4128 million ha of forest; by 2015 this area had decreased to 3 999 million ha. This is a change from 31.6 percent of global land area in 1990 to 30.6 percent in 2015".

The FAO [6] argues that due to the prevalence of poverty the role played by forests in socio-economic development is more pronounced in developing countries than in developed countries. The FAO [9] estimates that Africa's forest covers up to 650 million ha which is about 17% of the world's forests. The major forest types are dry tropical forests in the Sahel, Eastern and Southern Africa, moist tropical forests in Western and Central Africa, Subtropical forest and Woodlands in Northern Africa and the Southern Tip of Africa and finally the mangroves in the Coastal zones.

The major challenges in Africa are deforestation caused by exploitation of forests for commercial timber and to open land for agriculture and human settlements. These represent an enormous loss of natural economic wealth to the continent. The opening up of access roads to forests exacerbates the pressure on the forest. Poaching of forest resources like game meat and firewood to supply urban areas is increased due to access roads. The incidents of bush fires also become more frequent due to increased population.

The FAO [9] suggests that capacity building of institutions that manage forests can facilitate reduction of the challenges facing forests in Africa and other developing countries. Adams and Hulme [10] note that protectionist forest management approaches used in most developing countries view development objectives of local communities as being in direct conflict with objectives of biodiversity conservation. That has resulted in the creation of protected areas like national parks, game reserves and national forest reserves. The

model excludes residents in protected forests from management of these areas so as to prevent or minimise their consumptive use and other forms of human impact. Geist and Lambin [11] reveal that the top-down exclusionary models to forest governance have failed to prevent deforestation and associated loss of forest biodiversity which have become one of the major conservation challenges facing the World today.

Hutton and Leader-Williams [12] assert that in view of the failure of the exclusionary protectionist approaches, since the 1980s, a new forest governance model that stresses the need to incorporate the needs and aspirations of the local people in the conservation of forests has been adopted by a number of developing countries. This approach views local people as potential partners in conservation of biodiversity. Adams and Hulme [10] concur that this approach allows the indigenous people within or in the vicinity of the protected area to enjoy property rights and to participate in conservation processes. The model also links the objectives of conservation with local development needs of the people. This approach recognises the likely costs, for example due to sabotage, to be incurred by government due to hostility by the displaced or disadvantaged forest dependent communities. Agrawal and Gibson [13] however show that this model has also failed to yield positive results in most areas where it has been applied. It has been observed that success or failure depends on the ability of governments to decentralise power, effectiveness and efficiency of development institutions and other socio-economic factors. Buscher and Dietz [14] add that in certain areas, community ownership and management of natural resources has failed dismally with some studies recommending a reversal to the state exclusionary governance.

Forests in Zimbabwe

Shumba [15] states that in Zimbabwe, the Ministry of Environment Water and Climate is in charge of forest management through the Forestry Commission, the Environmental Management Agency, and the Department of National Parks and Wildlife Management. The Forestry Commission provides policy advice to the Minister of Environment Water and Climate, who administers the Forest Act, and regulates the management and exploitation of State forests and any other forests on state land. In gazetted forests, Forestry Commission uses Forest Act (Chapter 19:05) and Communal Land Forest Produce Act (1987) for communal areas to regulate the utilization of forests. The Forestry Commission is involved in setting and monitoring of quotas in privately owned properties but the owner manages and markets the produce. In communal areas the Rural District Councils (RDC) draw concession agreements with advice from the Forestry Commission which also supervises the logging operations. Local communities are rarely involved in the management of forest projects but only receive minimal benefits from the concessions.

Forests in Zimbabwe can be divided according to land categories, namely gazetted forests, privately owned commercial farms, communal areas; state-land like resettlement areas or they can be divided into two broad categories namely natural woodlands and plantations. Natural woodland vegetation from which the majority of communities derive their livelihoods covers approximately 65% of the land area. Tenure types include: freehold ownerships, that is land with title-deeds owned by individuals or companies; occupancy rights to land in communal areas or the permit system in A1 resettlement schemes; and leases of land granted by the government through various schemes for example in A2 land reform schemes or lease of grazing land in gazetted forests [15].

Bradley, [16] asserts that these forests can also be classified into 6 distinct categories based on the dominance of a few species. These are: miombo woodlands found mainly on the central plateau where annual rainfall ranges between 700 and 1000 mm. The Zambezi teak forests are confined to the Kalahari sandy forests of north-western Zimbabwe where they occupy about 5% of the total land area. The dominant tree species, which are also commercially exploitable, are teak, mchibi, mukwa, and mkamba. Mopane woodlands dominated by mopane tree occur on heavy textured soils along major river catchments which include the Zambezi and Limpopo valleys.

These woodlands are a source of woodcraft, edible worms and offer nutritious browse to both domestic livestock and wildlife. Acacia woodlands cover most areas of Zimbabwe and occur in vlei areas and dominated are by Acacia species. "Terminalia/Combretum" woodlands frequently found as a tree-shrub are dominated by "silver terminalia, Burkea africana and Combretum" and predominant in drier areas. "Closed montane" forests occur in small isolated parts of the Eastern Highlands. Exotic plantations forests cover about 120 000 hectares and are located mainly in the high rainfall eastern highlands. 75% of the planted area is under pine, 15% under eucalyptus and 10% under wattle trees. In the Zimbabwe forestry code proposal it is noted that despite the economic and environmental value in forests there has been a general decline in the area under plantations from about 120 000ha in 1999 to about 108 000ha in 2003 [17].

Earthtrends [17] observes that the national parks largely remain intact. However, most gazetted forests have been encroached by human settlements which started during colonial rule when indigenous

people were resettled on the forests. After independence such settlements had an influx of land-hungry peasant farmers particularly during the post 2000 Fast Track Land Reform. The increase in population resulted in over-exploitation of forest resources such as arable and grazing land and other forest products like wood fuels, wood for charcoal-making, tobacco curing and crafts, fodder, fruit, honey, medicinal plants, mushrooms, edible- insects, bark, leaves, and gum to both legal and illegal settlers living in or on the periphery of these forests. Concern for natural forest depletion in volume and quality has increased dramatically over the past two decades.

Gwaze and Marunda [18] state that in 1997 there were 22 gazetted forests, listed below, with a total area of 800 258 ha in Zimbabwe under the management of the Forestry Commission. The forests areas are : Chesa 14 250 ha, Insezi 8 400 ha, Umguza 32 2 00 ha, Gwaai 144 230 ha, Ngamo 102 900 ha, Nyamandlovu (Grants/Batley) 7 420 ha, Mbembesi 55 100 ha, Lake Alice 39 000 ha, Gwampa 4 700 ha, Mzola 67 200 ha, Sikumi 54 400 ha, Kazuma 24 000 ha, Fuller 23 300 ha, Panda-Masui 35 500 ha, Kavira 28 200 ha, Sijarira 25 600 ha, Molo 2 900 ha, Umzibane 2 471 ha, Mvutu 2 100 ha, Mafungautsi 82 100 ha, Ungwe 567 ha, Mudzongwe 1420 ha.

Mabugu and Chitiga [19] state that most gazetted forests in Zimbabwe are an important habitat for wildlife and have recently become vital to the tourism industry. Timber, a source of revenue to the nation, is the main enterprise in most of the forests. Forest land also provides valuable protection for watersheds and assists in preventing soil degradation and erosion.

The History and Profile of Chesa Forest in Zimbabwe

According to reports at the Forestry Commission, Chesa Forest was gazetted in 1965. It is 14 250ha in extent and is about 34km west of Bulawayo, off Khami Road. There is very little infrastructural development at Chesa Forest. There are small Forestry Commission offices and residential staff quarters used by employees who manage the area on a day-to-day basis. One facility on the ground is Chesa Primary School which is in a dilapidated state due to lack of maintenance. The school has four teachers although it goes up to grade seven. It means some teachers teach more than one class thereby compromising the quality of education. There are also homesteads mainly made up of huts for 128 illegal settlers who make a population of about 2 192 people. Access to the forest is through tracks, once used by timber loggers, which traverse the area. These are trafficable mainly with 4 wheel drive trucks due to the sandy terrain.

There are two boreholes fitted with pumps and one unfitted. The boreholes supply water to the Forestry offices, staff residences and the school. A tree nursery run by Forestry Commission is also watered from these boreholes. There are also several wells dug by illegal settlers. These supply water to the settlers for their domestic use and to water their livestock. There is one disused dip with no handling facilities.

The illegal settlers are in two groups. The first settled during the colonial era and were legitimate settlers then and were called forest tenants. Kwashirai [5] asserts that the Forest Department then demanded monthly rents of 10 shillings per head. This was in addition to the monthly poll tax of 50 shillings which was payable by every adult male in the colony. In fact some of these families were already on the property before it was gazetted. After independence Forest Commission stopped collecting their rentals and declared them illegal settlers and asked them to vacate the area. They however resisted eviction. The second group of illegal settlers moved into Chesa after independence especially during the Fast Track Land Reform Programme of post 2000.

The illegal settlers have a combined herd of 457 cattle. The grass cover at Chesa Forest is poor. Cattle mainly survive on acacia and other tree bush savannahs suitable for browse abundant in much of the forest. Chesa forest is heavily infested with *Umkhawuzane* (Dichapetalum Cymosum) a deadly poisonous shrub when eaten by livestock. That has a negative effect on livestock production as areas with *Umkhawuzane* have to be avoided when depasturing livestock thereby reducing the livestock carrying capacity of the property.

Chesa forest falls under Agro-ecological Zone IV. This zone is suitable for semi-extensive livestock production supported by drought resistant crops. Sorghum, millet and short-season varieties of maize can be grown for subsistence. The mean annual temperature is 21degrees celsius. Rainfall is generally low and of erratic distribution. The mean annual rainfall is 500-600mm. Although the climatic condition is suitable for growing the stated crops the soils at Chesa Forest are mainly poor Kalahari sands. Clay soils suitable for cultivation are found in the Tshisa and Lubimbi Vleis but cover an insignificant portion of the forest. The area is generally flat. Lubimbi and Tshisa Streams, tributaries of Khami and Gwayi Rivers respectively, are the major drainages at Chesa Forest. However their catchment area is so small that dams for irrigation cannot be constructed.

The main enterprise at Chesa Forest is production of commercial timber. The vegetation is mainly natural hardwood forests of teak, mahogany and

mukwa which cover much of Chesa Forest. The hardwood timber is primarily used to produce railway and mining sleepers, floor-tiles and furniture. The Forestry Commission can choose to do the harvesting of timber or through timber concessions. However at the moment there is no timber logging going on. The only activities carried out by the Forestry Commission at Chesa Forest are production of seedlings for afforestation projects and experiments on the growth and production of hardwood trees.

The Management of Chesa Forest is characterised by legal contradictions between traditional leadership, the Umguza Rural District Council (URDC) and the Forestry Commission. This is because in terms of the Forestry Act, the Forestry Commission is the state agency in charge of regulating forest utilization. The presence of a councillor at Chesa Forest implies that the URDC views itself as a planning authority in terms of the Rural District Councils Act. The illegal settlers are even obliged to pay council tax just like their counterparts in Communal Lands. The difference however, is that they do not get the services they pay for. The traditional leadership structure also exists at Chesa Forest and therefore implies that the Traditional Leadership Act is also in force. In such a scenario it becomes difficult to enforce the law as some of the regulations will allow residents to utilize the forest resources while the Forestry Act will be used to penalise the users.

RESEARCH METHODOLOGY

A combination of household-level questionnaires and focus group discussions were used to collect data. This required a total of twenty three field visits to the Chesa forest community. Ten visits were for community mobilisation, ten visits for implementing the ten focus group discussions, while three visits were targeted at local political leaders. In addition, stakeholder in-depth interviews and observation were used. Key informants included the Chief, local leaders, Forestry Commission officials, Arex, EMA, Umguza RDC, and others. The researchers asked two major questions in the study: How has government legislation affected the lives of people in Chesa Forest over time? And how has public policy impacted on the nature of forest rights, institutional dynamics and forest governance in Chesa forest?

Findings and Discussion

The study established that the average family size of the respondents was 7. These findings imply that the population is growing rapidly. The research revealed that when Chesa was gazetted as a protected forest in 1965, there were 60 families in the forest. Forty-eight years later there are more than 200 families.

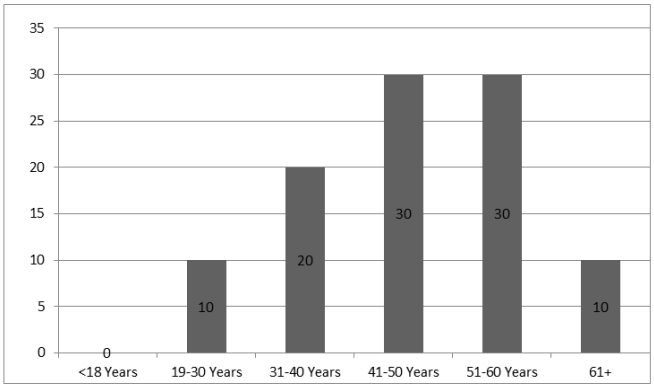

Fig-1: Demographic Analysis of Study Participants

As depicted in figure 1 above, the majority of heads of households interviewed was 41-50 years and 51-60 years. They accounted for 30%; followed by the 31 – 40 years who accounted for 20% and lastly the 19 – 30 years and 61+ years who accounted for 10%. There was no respondent who was below the age of 18 years. This implies that no child headed household was interviewed

It was established that 20% of the respondents were women while 80% were men. This implies that most decisions are made by men. Deliberate efforts should be made to mainstream gender in all projects, programmes and policies. Such efforts will ensure involvement of women and other vulnerable groups in decision making with a view to ensure environmental sustainability. For example involving women who do most of the cooking at home in the designing of firewood saving stoves would go a long way in reducing the cutting down of trees for energy purposes. A gender analysis of study participants is presented in the figure below:

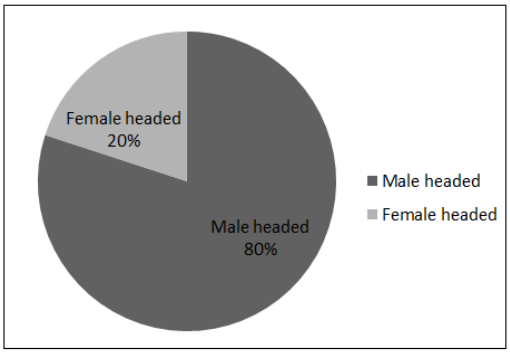

Fig-2: Gender representation of respondents

The study revealed that rapid increase in population is due to natural means and inward migration. The population is largely within the reproductive age. There is also an influx of migrants who have been irregularly settled by the local leadership at Chesa. These mainly originate from Bulawayo and the surrounding farms, most of which have been resettled under the land reform programme. The migrants are mainly victims of the Economic Structural Adjustment Programmed and some are former farm laborers who lost their jobs when the farms were compulsorily acquired by government. The implications are that if no poverty alleviation interventions are introduced in the immediate future, poverty at Chesa will increase as there is no correlation between economic production and population growth as shall be revealed later in this study. The average family size of 7 and the 61+ year old bracket of respondents as depicted in table 1 below, mean that Chesa has a large dependent population, both old and young. These people need to be supported from forest resources since the majority of members of the community are not formally employed.

Table-1: Household Settlement History in Chesa Forest

Respondent	No. of Family Members	No. of Migrants in the Family	Origin of Household	Year Settled at Chesa
1	4	1	Chesa	Indigenous
2	10	-	Chesa	Indigenous
3	8	-	Chesa	Indigenous
4	4	-	Nearby farm	2003
5	10	-	Nearby farm	1965
6	6	1	Chesa	Indigenous
7	8	-	Bulawayo	2012
8	7	-	Bulawayo	2008
9	6	2	Bulawayo	2008
10	6	1	Bulawayo	2009
Total	69	5		
Average	7			

The Government also has to increase its budget in the form of social security nets, education and health provision. Children need education and medical attention. The study revealed that, Chesa has a dilapidated primary school with only four teachers. This anomaly needs to be corrected. This compromises the standard of education as grades 1 and 2, 3 and 4, 5 and 6 share a teacher. All along the area did not have a secondary school. It now has one which is seven kilometres from Chesa Primary School, which was opened at Munondo in 2013.

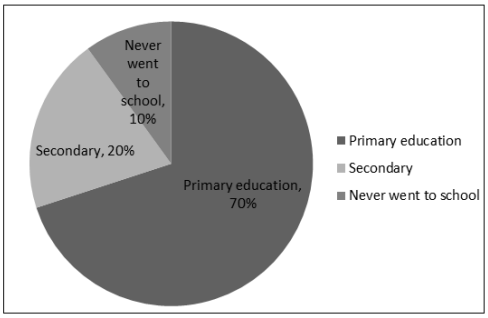

Fig-3: Education level among study participants

The majority of the respondents have primary education as their highest level of education, as shown in figure 3 above. The implication is that with low literacy communities fail to comprehend not only birth control and implications of large families. Chesa Forest has no clinic where reproductive health is taught and that exacerbates the situation.

There is therefore need for government to introduce capacity building programmes with regards to reduction in child bearing so as to slow down population growth. Government also needs to enforce laws so as to control the influx of migrants coming to settle at Chesa Forest. If such intervention strategies are not introduced, demand for agricultural land and other forest resources which result in deforestation and forest degradation will increase. Illegal activities like poaching of firewood, timber, wildlife and other resources will also accelerate as most of the population is entirely dependent on forest resources. Only 20% of the respondents reported that they were employed elsewhere besides being farmers. The remaining 80% are totally dependent on forest resources except for 4 respondents who reported that they had a combined total of 5 migrant children who send remittances back home to support their families.

70% of the respondents attained primary level as their highest level of education while 10% never went to school. This reveals the negative impact of shortage of secondary schools in the area. This implies that the majority of the population can mainly be employed in labour intensive industries like agriculture, logging and mining since most labour intensive industries closed down in Bulawayo due to the economic meltdown. That also confines them to depend mainly on forest resources for their livelihoods. Labour intensive jobs are generally low paying and hence confine people in the poverty cycle.

Livelihood Activities of Respondents

As alluded to above and depicted in figure 4 below, 80% of the respondents reported that they were self-employed as farmers which entails that they were totally dependent on forest resources for survival which become more intense during droughts, while 20% reported that in addition to farming, they were also formally employed. 30% of the same respondents reported that they cultivated crops and reared livestock for their livelihood; 20% cultivated crops and reared livestock and sold firewood; 40% cultivated crops and sold firewood while 10% survived on crop farming and seasonal casual labor only.

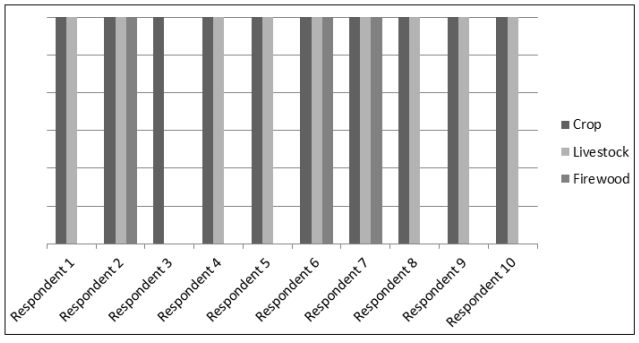

Fig-4: Livelihood Activities at Chesa

Crop cultivation

The study revealed that Chesa receives a mean annual rainfall of 500 – 600 mm which does not favour crop farming but is ideal for livestock ranching. Only limited cultivation of sorghum and millet can be done at subsistence level. However, contrary to this assertion, all respondents reported that they cultivated maize with very small areas under drought tolerant crops. 30% of

the respondents reported that they mainly grew maize, sorghum, millet and groundnuts; 30% grew maize, sorghum and groundnuts while 40% grew maize and groundnuts. Figure 5 below depicts these findings.

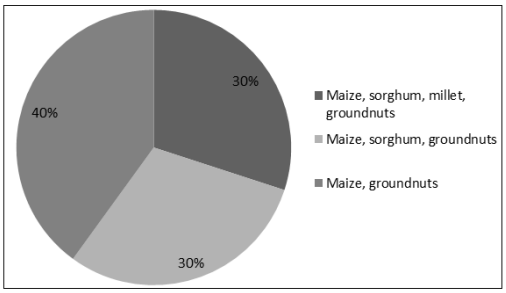

Fig-5: Crop Selection at Chesa Forest

All the respondents (100%) of farmers reported that they grew crops for consumption purposes. The low yields meant there was no surplus to sell. 100% of the indigenous Chesa Forest household heads (respondents) shown in Table 1 revealed that in the 1960s to the early 1980s they used to harvest bumper yields of maize. The average yield was two tonnes of maize per household and would sell some maize to the Grain Marketing Board (GMB). 100% of the respondents cited successive droughts in recent years as the major cause of the drop in yields. All the respondents from the public servants concurred with community respondents that droughts were more frequent in recent years due to global warming. They further pointed out that the soils were now poorer than they were in the 1960s as the majority of farmers do not use manure or fertilisers as they alleged that these nutrients catalyse the wilting process of crops during droughts. Additionally the top soil in arable lands is being washed away annually by the winds and the rains as there are no conservation works like contour ridges in all fields. The Agritex Extension Officer reported that the Department of Mechanization in her ministry was responsible for pegging contour ridges but could not do so as the Forestry Commission regarded the Chesa Community as squatters who were to be evicted. If the Department of Agricultural Mechanization pegged contour ridges, doing so was tantamount to regularising the permanent residency of the Chesa community. All the respondents concurred that this conflict has a negative effect to the environment which is continuously being degraded as it appears that although legally the Chesa community are squatters, the Forestry Commission cannot evict them in the near future as the villagers appear to wield massive political support within government circles. Logically, since the government has failed to move the Chesa community since it declared its settlement within the forest illegal, through the Forestry Commission after the independence of Zimbabwe in the early 1980s, it implies that it is against such action although its statutes, particularly the Forestry Act dictates that. Therefore the Chesa community will not utilize the environment sustainably, as they know that they are said to be illegal occupants of Chesa Forest awaiting eviction.

As shown in figure 5 only 30% of the respondents reported that they mainly grew maize, sorghum, millet and groundnuts and another 30% grew maize, sorghum and groundnuts. Observations confirmed that although the sorghum and millet crop was better than the maize crop, the area under the small grains was very small. This implies that the Chesa farmers do not favour growing sorghum and millet even though they know that small grain crops have better yields than maize in their locality.

Fig-6: Sorghum crop at Chesa

Fig-7: Sorghum crop at Epping Forest

Figure 6 shows a healthy sorghum crop taken at Chesa while Figure 7 illustrates a thriving sorghum crop taken at a field day in April 2013 at Epping Forest also in Umguza District. Epping Forest has similar soils and rainfall pattern as Chesa Forest which means that sorghum can be grown successfully there too. All the respondents from the community cited high labour costs involved in the cultivation of sorghum and millet. They went further and said that birds liked millet and sorghum hence the crop has to be guarded against birds up to maturity. The threshing and milling processes are also cumbersome thereby discouraging a lot of farmers from growing sorghum and millet. The staple food isitshwala made of sorghum and millet meal is not as tasty as the one made with maize meal. The maize crop which is popularly grown at Chesa brings food insecurity mainly due to low yields as a result of droughts. Capacity building programmes geared towards equipping and encouraging Chesa farmers to grow and develop appetites for small grain crops have to be implemented in order to enhance food security in the area. In the process pressure on forest resources to support livelihoods of communities will be reduced so as to achieve sustainable utilisation of forest resources.

Livestock Production

It was revealed during the interview with the local leadership, that the total number of cattle owned by the community was about 457. The number of other livestock like goats, sheep, donkeys and chickens in Chesa Forest was unknown. All respondents from the public servants also did not know the number of cattle at Chesa, except the District Coordinator (Forestry Commission) who reported that there were 457 cattle in the area but also did not have statistics for other categories of livestock. However basing on the cattle figures from the local leadership the researcher concluded that the forest had abundant grazing land as the total area of Chesa Forest is 14 250 ha. The condition of the livestock confirmed this as they all looked healthy see Figures 8 and 9. The Agritex Extension Officer revealed during an interview that the livestock stocking rate in Natural Region 4 is one livestock unit to 10 ha of grazing land per year. Note that one livestock unit is equivalent to one ox/bull weighing 500kg.

Fig-8: Example of Cattle at Chesa

Fig-9: Donkeys for Draught Power at Chesa

Observations revealed that the South western part of Chesa forest, where most of the villages are located is showing signs of land degradation. Gullies are forming especially along tracks used by cattle as they leave the village to and from the pastures and the only borehole. The area is overgrazed. This is because parts of north-eastern section of the forest are infested with the deadly shrub *umkhawuzane* (dichapetalum cymosum). Observations further revealed that area has a fair grass cover and plenty of leaves which serve as browse see figure 9. Respondents from the local leadership reported that cattle owners are therefore forced to confine their livestock to the south-western part of the forest which have a lot of grass cover especially from spring to summer when *umkhawuzane* in the north-eastern part is said to be most dangerous due to its bright green colour of the leaves which is appetising to cattle. 80% of cattle owners revealed that the major cause of death to their cattle is *umkhawuzane* and tick-borne diseases. The area has no dip tanks. Farmers buy dipping chemicals as individuals and spray their cattle against ticks. However due to the bad culture of reluctance to sell livestock even when there is a pressing need they fail to raise money to buy adequate dipping chemicals resulting in their cattle being infected with ticks which carry diseases which kill their cattle. It is therefore apparent that cattle rearing has great potential of success in this area. Respondents from the public servants reported that if livestock carrying capacity is observed, livestock production (both cattle and small livestock) will not compete with forestry, the core-business of the Forestry Commission.

Livestock Ownership by the Respondents

50% of the respondents from the community reported that they owned cattle, donkeys, goats and chicken; 20% reported that they owned goats and chickens and 30% reported that they owned chickens only. The average number of livestock owned by respondents as shown in table 2 is as follows: 11 cattle, 2 donkeys, 8 goats and 14 chickens per family.

Table-2: Average Livestock Owned by Respondents

Respondents	Cattle	Donkeys	Goats	Chicken
1	22	4	12	24
2	36	6	10	12
3	0	0	6	16
4	20	6	14	16
5	15	4	12	14
6	0	0	0	10
7	15	4	7	12
8	0	0	16	20
9	0	0	0	8
10	0	0	0	12
Total	108	24	77	144
Average	11	2	8	14

The findings reveal that the herds are small and hence cannot sustain families for a long time, when there is need to sell some livestock especially during prolonged periods of drought which result in food insecurity.

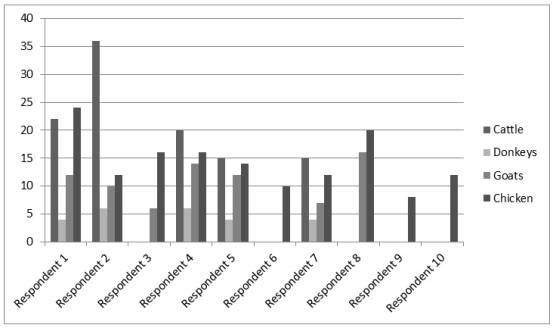

Fig-9: Livestock Ownership Patterns at Chesa

This means that families have to exploit forest resources like firewood, wildlife and honey to sustain families as alluded to earlier. Over exploitation of forest resources results in land degradation. The Agritex Officer reported that the fire which is used to drug bees when harvesting honey is responsible for destroying

large tracks of land after going wild. Fires destroy trees, grass, both domesticated animal and wildlife and biodiversity. The village-head concurred with the Agritex Officer and reported that bushfires are a common problem at Chesa Forest. However the Chesa community co-operates and extinguishes the fire every-time when it breaks out. Figure10 below shows a portion of Chesa Forest which is recovering after it was gutted by a bush fire in 2012. This is in spite of the warning signs against such practices put strategically around the forest by Forest Commission see figure 11.

Selling of Firewood

60% of the respondents from the community revealed that they sell firewood in town as a coping strategy against poverty and drought. This strategy is a threat to the environment in that wood-poachers cut down green trees as buyers reportedly prefer a mixture of wet and dry firewood as they allege that they last longer. Forest rangers often repossess logs from wood poachers. Respondents revealed that firewood has a ready market in Bulawayo due to electricity load shedding in place. New townships like Cowdray Park have certain sections which do not have an electricity grid as yet. The number of wood-poachers is likely to be high as some respondents were embarrassed to admit committing an illegal act. During the interview 60% of the respondents also revealed that during the colonial era they were allowed to get permits to pick dead wood from the forest and sell as firewood in Bulawayo. That form of revenue used to augment their meagre incomes to support their families. This facility was stopped by Forestry Commission at independence when their status changed from forest tenants to squatters.

Fig-10: Part of Chesa Forest Recovering

Fig-11: Warning Sign against after a Devastating Bush-fire Environmental Degradation

Observations revealed that the local community cut too many trees to fence their residential and arable lands. Some houses are built of pole and dagga and hence are not strong and durable structures. They are replaced after every few years thereby necessitating cutting down of more trees. Since the population at Chesa is growing rapidly such practices become serious drivers of deforestation. Measures need to be taken to assist the community build more permanent brick structures.

Poaching of Wildlife

The Forestry Commission District Coordinator revealed that poaching of wildlife was rife at Chesa and the meat has a ready market in the city Bulawayo.

Migration

Migration brings some relief from exploitation of forest resources. 40% of the respondents reported that their children or relatives migrated to neighbouring countries especially South Africa and Botswana. They send remittances which greatly assist them in buying basic needs like food, clothing, agricultural inputs, pay school fees and hospital bills to mention a few. Documentary sources revealed that although migration is an important poverty alleviation strategy, it is also a driver of diseases like HIV/AIDS. Loneliness and lack of family support encourage promiscuity amongst migrants.

Craft-making

All the respondents revealed that they do not make or sell crafts for two main reasons. The first is that the Forestry Commission policies do not allow them to cut down trees whose wood is the raw material for making crafts. Secondly due to global warming, several successive droughts and frosts have withered all the palm trees whose leaves were raw materials for making mats. They also added that the forest used to be rich in wild fruits like umkhemeswane, umgwadi, umviyo, umsosobiyane and these were also affected by the same weather phenomenon. Bush-fires exacerbated the situation by burning down the remaining few trees.

Driving Factors behind Environmental Problems

All the respondents concurred that there were environmental problems. 90% of the respondents from the community reported that environmental problems were caused by poverty, climate change, and unsound government policies. 10% of the respondents from the community reported that in addition to what was cited by the respondents, poor soils at Chesa also contributed to environmental problems. This is illustrated in figure 12 below.

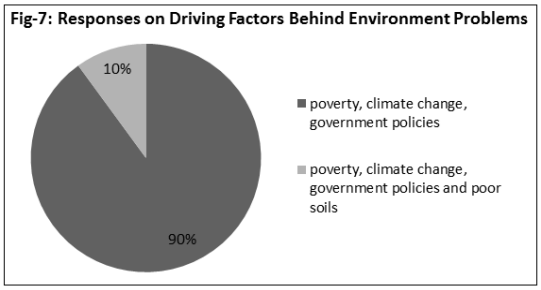

Fig-12: Responses to driving factors behind environmental problems

80% of the respondents reported that from all their livelihood activities they earn between $0 to $29 per month (about $1 a day) and 20% earn between $30 and $59 per month (about $1 to $2 per day). The implication is that the community is generally poor according to international standards of the United Nations.

The respondents are confined within the poverty trap. They lack money to start income generating projects, construct necessary infrastructure like dip-tanks, clinics and additional boreholes. In an effort to recover after being hit by disasters they are compelled to poach firewood, wildlife and other forest resources thereby destroying the environment. Climate change has resulted in droughts and severe frosts. Pests which favour certain temperatures multiply. The district Agritex Extension Officer revealed that in the 2012/2013 agricultural season most areas of Matabeleland North and Bulawayo Provinces including Chesa Forest were hit by army worms which destroyed crops. These worms multiplied due to favourable warm temperatures induced by global warming. The officials also all concurred that the rains were erratic with mid-season dry spells which caused the withering of crops.

The respondents explained that government policies are not supportive of their development efforts. Respondents from the community cited that government was taking too long to regularise their occupation of Chesa Forest. As a result they are failing to develop the area with confidence. The Forestry Commission views the farmers as squatters who should be moved from the area. This is in spite of the fact that about 60 households were already residents of the forest when Chesa was gazetted as a forest in 1965. These families were given permits to stay by the colonial regime. They were allowed to sell dry firewood, depasture livestock, to have arable land and to reside within the forest. In return they were supposed to guard against fires and poachers.

Access to Credit, Market and Extension Services

All the farmers revealed that they had no access to extension advice with regard to entrepreneurship, marketing and sources of credit. All the respondents revealed that they had not accessed any loans for project implementation. 50% of the respondents mentioned that they had few opportunities to attend training sessions run by the local Agritex Extension Officer where issues pertaining to veld management, livestock production and crop production were discussed. However the respondents emphasized that the training sessions had very little impact as the sessions were few. This is because the Agritex Extension Officer also covers the surrounding farms and resettlement areas.

Officials from the Environmental Management Agency (EMA), the District Administrator and Umguza RDC Chief Executive Officer also cited poor sandy roads as reasons why they do not frequent Chesa Forest. They also cited that the residence status of the Chesa Community was contradictory in that Forestry

Commission, the official managers of forest areas regards them as squatters. In view of this, most government departments were reluctant to give assistance to the Chesa Community.

Lack of clear tenure arrangements demotivates the community to look after the area jealously and to develop infrastructure. 98% of the respondents revealed that they preferred communal tenure in Chesa Forest. However 2% reported that they preferred freehold tenure. None of the respondents reported that they preferred long leases.

The Environmental Management Extension Officers revealed that they were obliged by law to protect the environment and hence will do so whether communities are squatters or not. However actions on the ground do not show that. The respondents from the community revealed that they did not receive extension advice from EMA, there are no climate change mitigation and adaptation strategies. For example there are no tree growing projects in progress or organised groups which are being trained to implement such strategies. A respondent from the Forestry Commission was clear that they had no obligation to render service to the Chesa Community as they regarded them as squatters awaiting eviction.

Provision and Maintenance of Infrastructure and other Facilities at Chesa Forest

All the respondents concurred that the area lacked adequate infrastructure and that made living in Chesa forest very difficult. For example a lot of productive time is wasted queuing for both domestic water and for watering of livestock. The sick travel to Bulawayo to get medical attention thereby wasting valuable time and money. Table 3 shows the status of infrastructure and other facilities in Chesa. Respondents chosen from the public servants reported that lack of infrastructure was also responsible for land degradation. For example the fireguards which are not properly maintained in Chesa make it difficult to control fires. The forest has no paddock fences and that makes it difficult to control the movement of cattle. They get confined to one area thereby overgrazing that part of the forest. Lack of dipping facilities allows the breeding of ticks which spreads killer diseases to livestock.

Table-3*:* Available Infrastructure and Other Facilities

Facility	**Number**	**Condition**
Borehole	1	Broken most of the time.
Dip tanks	0	N/A
Cattle Handling Facilities	0	N/A
Fences	Perimeter Unknown. No paddock fences.	Perimeter fence available on bordering farms but needs repair
Schools	1	Fair
Clinics	0	N/A
Roads	Length of access roads unknown	Poor sandy tracks which need maintenance
Shopping centre	0	Except for temporary structure which serves as a tuck-shop and shebeen
Fireguards	Length unknown	Needs maintenance
Grazing	14 250ha	Good on the north-eastern side and fair on the south-western side.

Participation in Forest Governance

All the respondents from the community reported that they did not participate in forest governance as the Forestry Commission regarded them as squatters contrary to the local leadership, the Umguza Rural District Council (URDC) and the District Administrator who appear to be sympathetic to their predicament. For example the Chief reported that he encourages the community to preserve the environment through observing certain cultural norms and values like not cutting down certain trees and not to walk through certain parts of the forest. 90% of the respondents from the community reported that the only structure which represents them is the Village Development Committee (VIDCO) and does so at the Ward Development Committee (WARDCO). The WARDCO at present does not have any influence on forest governance as it does not report to Forestry Commission but to URDC through the Councillor. All the respondents from the community reported that there were no environmental actions in place. All other respondents from the local leadership reported that it was difficult to facilitate the implementation of income generating projects as was done in resettlement and communal areas as most projects would require a project site which might require clearing of vegetation. Doing so would be gross violation of Forestry Commission regulations.

CONCLUSION

A Policy Reflection on Emerging Issues at Chesa Forest

Poor commons management is linked to insecure land rights, chronic poverty, and an institutional framework which is not clear. In terms of poverty, one can note that an increasing demand for arable land is contributing to land degradation and veld fires. The poor will consistently exert pressure on the commons to find a way of life. However, converting forest lands into agricultural land is not sustainable at Chesa. This context of poverty creates an environment where unregulated extraction of forest products and wildlife becomes common. The phenomenon tends to be institutionalized and accepted within the community where conflicting institutions cannot collectively work towards good forest governance. The politics of the State is evident in its policies at Chesa where State agencies on one hand wish to propagate good management practices through a strict regime of environmental regulations, on the other hand, through other selected institutions and politicians, projects itself as being pro-poor and pro-people. Looking at the Chesa community, one is faced with the difficulty of addressing the question of whether development should be about place prosperity or people prosperity. At the same time, it emerges that the State has multiple goals which are often dissimulating, unstructured, and evolving when it comes to forest communities. In the context of climate change adaptation, it can be concluded that poor communities, with unclear and contested property rights, will inadvertently find it complex to collectively act in response to the negative effects of climate change. Their vulnerability is worsened by lack of clearly defined forest and land rights. When the poor find themselves almost competing with the State for the forests, it is them and their forests that ultimately suffer. A complete policy shift, underpinned by institutional reform, can potentially improve the fortunes, capabilities and opportunities of poor communities who live in and depend on small forests in developing countries. Such a policy must enhance the property rights of the poor, and therefore place them in a position where they can design their own strategies towards sustainable livelihoods, sustainable forest governance, and effective climate change adaptation

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