

**THE FUTURE OF CONTRACT FARMING AS A RURAL
DEVELOPMENT TOOL AND ITS IMPACT ON PRODUCTIVITY
AND INCOMES OF SMALLHOLDER FARMERS IN RED
SORGHUM PRODUCTION IN ZIMBABWE: A CASE OF BINGA
DISTRICT IN MATABELELAND NORTH PROVINCE**

Chisango Future Fortune T*

Maposa Angela**

ABSTRACT

This study examines the potential of contract farming as a rural development tool by revealing its impact on productivity and incomes of small holder farmers in red sorghum production in Binga district of Zimbabwe. Contract farming as a business model, in this African state is characterised with numerous viability challenges as evidenced by farmers' failure to access viable markets for all their contracted sorghum produce and declining production levels. Ingwebu Breweries the major local contractor in the district, due to the current liquidity crisis facing the country has no capacity to purchase all contracted sorghum produce and is failing to pay whatever meagre producer price they offer to desperate farmers on time; hence farmers who toil on the land are subjected to incessant languishing farmers do not get or salvage expected returns from their contracted farming venture. The design of this research study was qualitative where face-to-face household interviews, focus group discussions, and a self-administered key informant questionnaire were used for generating data. The research population was 698 red sorghum farmers from Binga one of the most marginalised districts of the country, from which a sample of 30 contracted farmers was drawn. The research study unearthed factors leading to poor contract farming scheme performance and declining productivity. Conclusions drawn from this study were that low sorghum producer prices were impacting negatively on the viability of the contract farming venture. Furthermore contracted farmers proved not to understand and appreciate the contractual conditions as outlined on contract documents. At times the inputs availed to farmers by contractors under the scheme were insufficient to push production to expected optimum levels. Recommendations suggested that contract agreements should be printed in vernacular languages for farmers to understand and appreciate

* senior lecturer faculty of agriculture, Zimbabwe open university, Zimbabwe

** senior lecturer faculty of arts and education, Zimbabwe open university, Zimbabwe

contractual conditions. The government should intervene in promoting red sorghum contract farming viability by means of support producer prices or input subsidies.

Key words: contract farming, business model, food security, livelihoods, local communities, viability challenges

1 Background of the study

Contract farming may be defined as agricultural production carried out according to a prior agreement in which the farmer commits to producing a given product in a given manner and the buyer commits to purchasing it. Often, the buyer provides the farmer with technical assistance, seeds, fertilizer, and other inputs on credit and offers a guaranteed price for the output (Eaton and Shepherd, 2001).

Following the typology specified by Singh (2002), two types of contract farming can be observed in Binga district; the partial contract, where some inputs are provided by the contractor and the products are sold at a pre-agreed price; and the total contract, where the contractor supplies all the inputs and determines management decisions and the farmer supplies labour and land. Both production schemes have been successfully applied in the region; however their effects on productivity and income of farmers have not been evaluated. Therefore, this study examines the effect of contract farming on productivity of red sorghum, and investigates its impact on income generation and food security of smallholder sorghum farmers in the arid region of Binga in Zimbabwe, in order to evaluate the potential of contract farming as a tool for poverty alleviation.

Contract farming has attracted the interest of policymakers and other stakeholders because of its potential to unlock agricultural productivity in marginalised areas by availing inputs for better options suited for such regions. However, the positive impact of contract farming remains subject to debate as it is surrounded with controversy. Proponents of contract farming view it as a panacea for challenges associated with dissemination of valuable information on credit, and market risk that small holder farmers face when intending to commercialise production. They see contract farming as facilitating the integration of small holder farmers into commercial agriculture, leading to income growth and poverty reduction. A phenomenon supported by Rawlins, (1985) who evaluated effects of the Jamaican Second Integrated Rural Development Project (IRDPII) on the level of technical efficiency for peasant farmers by using cross sectional frontier model, and concluded that contract farming drives up the production frontier of contract farmers. However opponents argue that contract farming is a way through which large firms

exploit smallholder communities by using farmers as cheap sources of labour, working on their land units to produce for the big firms.

In Zimbabwe's arid and semi-arid regions red sorghum is mainly cultivated by small holder farmers with average land holdings not greater than 2 ha (Agritex 2015), and traditionally it is regarded as a women's crop with little economic significance attached to it. However research has shown that beyond food security and provision of cash the value of sorghum is linked to the social context and religious ceremonies, a typical common practice in Zimbabwe's rural communities.

The brewery industry developed interest in the crop from the early 1980s when investigations were made into the possibility of using the sorghum malt as a substitute for barley malt in the production of opaque beer. This was a cost cutting measure as it allowed industrial breweries to save foreign exchange on imported barley malt. Although field trials on the crop's productivity and potential to substitute barley proved successful, the unavailability of local varieties suitably adapted to local conditions, particularly in terms of grain quality made industries lose their initial zeal in local sorghum production. During 2003-4 seasons Seed Co-op through its Arnold Rartley field trials released a red sorghum hybrid variety NS5511 suitable for opaque beer brewery. Breweries in Zimbabwe therefore started to partially substitute imported barley with sorghum. Furthermore, between 2011 and 2013, several efforts were made by companies such as Ingwebu Breweries to contract farmers in Binga district to produce sorghum via out-grower contract farming schemes, but with little success due to the difficulties encountered by farmers in the contractual agreement terms with the company.

Traditionally, contract farming has been the domain of commercial agriculture due to the perceived high risk associated with extending such schemes to the small holder sector. After the land re-distribution program which drastically reduced commercial farming activities, many companies had to look for other alternative suppliers of agricultural produce and this presented an opportunity for small holder farmers. In Zimbabwe many contract farming schemes involving small holder farmers have collapsed, even when farmers had been provided with all the necessary inputs essential to meet the production frontiers of cropping ventures. Contracting companies however perceived that the major challenges they faced in contracting smallholder farmers were a result of low yields and poor produce quality due to poor management, poor timing of operations and side marketing of the produce. The Unfavourable policy environment prevailing in the country exacerbated the situation as farmers felt that there was lack of transparency in the way producer prices were set by contractors hence depriving them of their bargaining powers and that the output grading systems actually worked against them.

It is therefore against such a background that the research was carried out to analyse the impact of red sorghum productivity under contract farming on food security and livelihoods of communal farmers in

Zimbabwe with particular reference to Binga district in Matabeleland North Province. When considering contract farming as a tool for rural development, it is necessary to clarify its production efficiency compared to other production schemes Bravo-Ureta and Evenson, (1994). It is therefore paramount that the research tried to examine technical, allocative and economic efficiencies of red sorghum contracted small holder farmers in Zimbabwe's rural communities.

1.1 Statement of the problem

The unfavorable government policy environment which has seen, the government impose a monopolistic marketing structure on all cereal produce and being the sole authority that sets producer price for such produce, has made it difficult for contractors such as Ingwebu Breweries to fulfill their contractual obligation with disadvantaged small holder farmers, who now feel betrayed and regard contractors as institutions that lack concern on addressing issues threatening food security and livelihood systems in their marginalized rural communities. But rather perceive them as gross exploiters of their labour and land resources whose main objective is solemnly expansion of their economic gains. The fading faith of farmers on contractors has resulted in the escalation of side-marketing of the produce as companies struggle to meet the obligation of paying farmers the gazette producer price. In such situations where farmers fail to access viable markets some are forced to retain and keep the unpalatable produce, not fit for human consumption for long periods hence compromising their food security as they lack disposable income for maize, the staple diet. The resource poor communal farmers are also exposed to numerous post harvest management challenges leading to great losses due to storage pests' damage. The study therefore sought to establish and explore ways through which red sorghum contract farming could be revitalized to boost productivity and viability, and bring sanity in the industry.

1.2 Objectives

Overall objective

This study sought to examine the potential of contract farming as a rural development tool by revealing its impact on productivity and incomes of small holder farmers in red sorghum production, for improved livelihoods in Zimbabwe, but with particular reference to Binga District in Matabeleland North Province.

Specific objectives

- To establish land size under contract red sorghum crop and achievable Yields Y/ Total Physical Product TPP/ha
- To identify existing Marketing structures for the crop and establish how farmers perceive their viability and sustainability as a tool to foster rural development

- To identify the role of stakeholders on service delivery and crafting of policy which promotes contract farming for poverty reduction and promote rural livelihoods.

2 Research Methodology

Population and Sample Composition

A sample of thirty (30) contracted farmers was drawn from a population of 5392 households comprising 698 contract farmers of the two wards in Binga district, as shown on table 3.1 below. The lists of contracted farmers were availed from the local Agricultural technical extension services department (Agritex) offices, and these were interviewed using a household questionnaire aided by focus group discussions. The Focus group discussions comprised representatives of all stakeholders: farmers, contractors legislators and government departments.

Table 2.1 sample of 30 drawn from the population for the purpose of the study

Ward name	Ward number	Farming households	Contracted farmers	Sample size
Kabuba	17	2155	308	15
Sinamagonde	21	3237	390	15
Total	2	5392	698	30

3 Results and Discussions

3.1 Land area under red sorghum

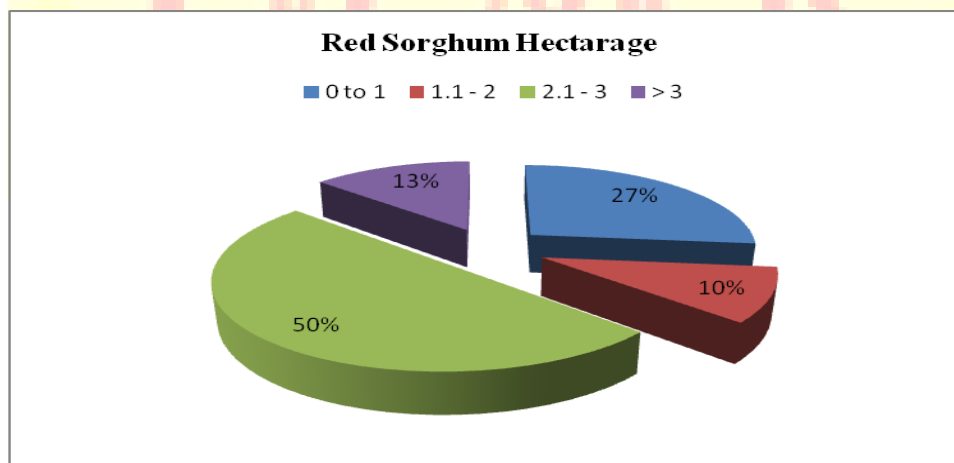


Figure 3.1 Hectare allocated to red sorghum contract farming

As the study sought to establish productivity of red sorghum among the contracted smallholder communal farmers, it was paramount to identify area/land size allocated to the crop. The survey indicated that the majority of red sorghum farmers about (27%) put only up to one hectare of their total arable land under red sorghum cropping as illustrated in Figure 3.1 above. At least 10% of the farmers grow the crop on land sizes ranging from 1.1 to 2 hectares. However, a significant number constituting about 50% devote land in excess of 3 hectares to red sorghum production. About 13% of the households interviewed allocate more than 3 hectares to the crop, signifying how critical the crop is in the farmers' order of ranking and prioritising it as a strategic crop for income generation and cushioning food deficits in the district.

3.2 Red sorghum yields attained by contract farmers

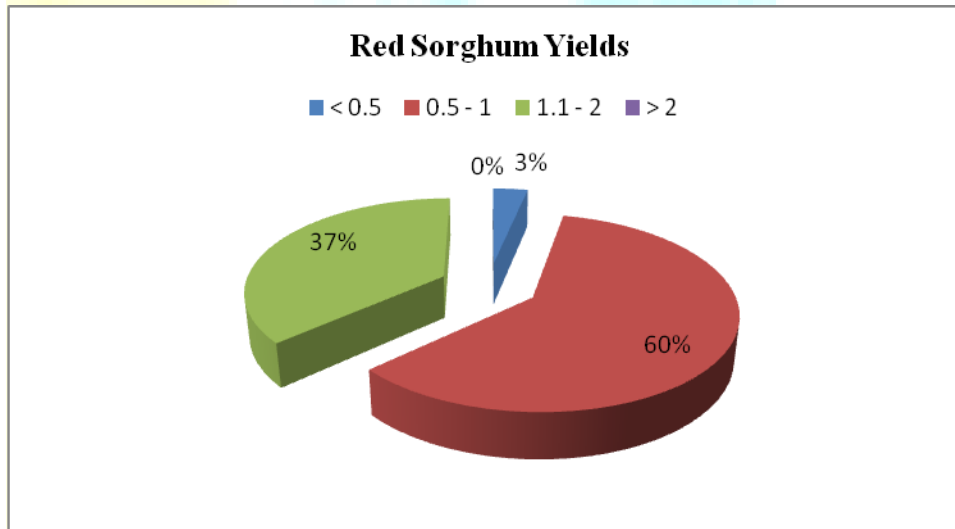


Figure 3.2: Average yields attained by contracted farmers

Generally farmers' response on attainable Total Physical Product (TPP)/Yield (Y) per hectare was lower than the expected optimum targets set by the local Agritex department, hence phenomenal that majority of farmers were operating below break-even points. Of the interviewed participants, 3% indicated that it was difficult for them to surpass 0.5t/ha of the contracted crop, citing mistiming of contracting companies in availing inputs as the major obstacle. None of the farmers was agreeable to the Zimbabwe's Ministry of Agriculture's notion that it was possible to achieve yields in excess of 2t/ha in drier parts of the country. However, 60% of the participants indicated that they would get yields in the range of 0.5t/ha to 1t/ha of the contracted crop in good seasons.

3.3 Marketing structures for contracted farmers

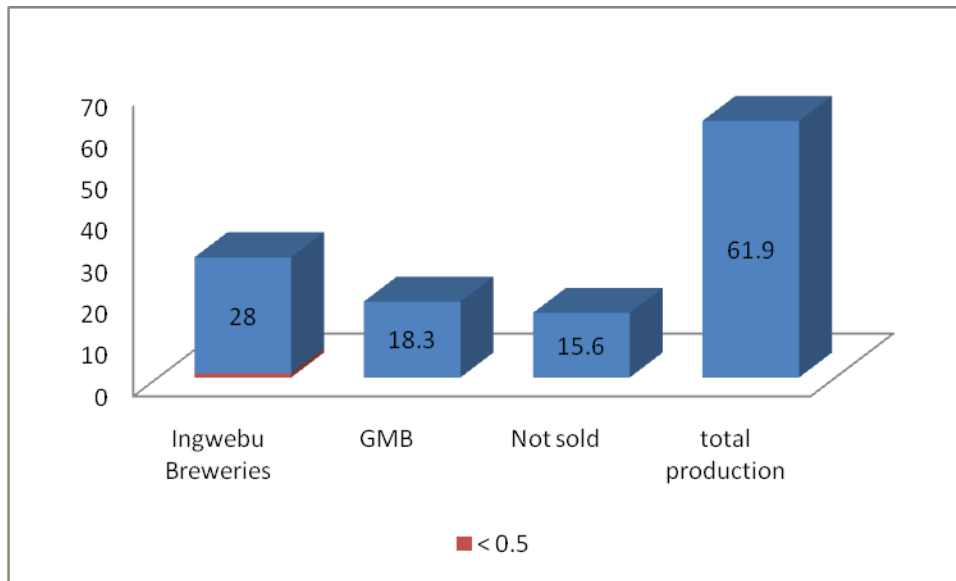


Figure 3.3: Red sorghum marketing structures for contracted farmers

The contracted red sorghum was all meant for sale to the contractors such as (Ingwebu Breweries); however, figure 3 above indicates that at least 15.6 metric tonnes of red sorghum from 30 interviewed households was not all sold to contractors for varying reasons. A total of 18.3 metric tonnes from the interviewed households was sold to the Grain Marketing Board GMB, while 15.6 metric tonnes were not sold and retained for future usage, and as such this was exposed to heavy post-harvest losses. Only 28 metric tonnes was sold to the contractor.

3.4 Rating of profitability of sorghum contract farming

Respondents were asked to rate the profitability of red sorghum contract farming using four possible classifications as illustrated in Figure 4 below.



Figure 3.4: Red Sorghum contract farming profitability rating

Even though 4 of the farmers rated red sorghum contract farming as unprofitable, 13 maintained that it was a moderate to highly profitable farming option at their disposal, whilst none of them viewed it as a venture of low profitability. Very few farmers (4) viewed the profitability of red sorghum contract farming as either being low or actually unprofitable, the management of merchants however pointed out that red sorghum contract farming was important for the national economy. Contractors such as Ingwebu Breweries have indicated that there is no better option of producing the crop other than contract farming as it maximises utilisation of land resources and abundant labour in rural communities. Farmers have generally confirmed that contract farming of red sorghum can be a major source of income in the country's marginalised rural communities.

3.5 Rating of services provided by contractors

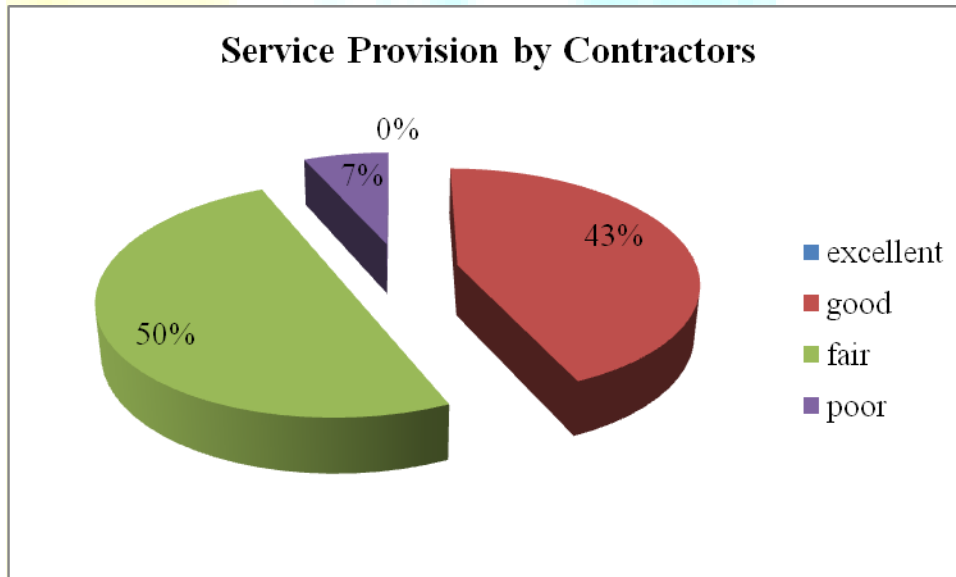


Figure 3.5: Rating of services provided by contractors

Companies that contracted farmers to produce red sorghum did not only provide inputs in the form of seed, fertilisers and chemicals; but also offered other support services like agronomic advisory, farm-gate transport, packaging materials and sometimes cash advances. Participants probed to establish how farmers perceived and rated such services indicated that 50% viewed the services as fair; that is, they could not tell if they were deriving maximum benefits from the services, While 43% viewed the services as critical in boosting sorghum productivity and profitability, as they impacted significantly on gross margins (GM) of the farming venture. Seven percent (7%) had the perception that the services were not properly executed hence not, a significant determinant of red sorghum production to them. On input provision none of the participants rated the services provided by contractors as excellent, it was noted that inputs provided were inadequate, and were not timeously availed to farmers.

3.6 Farmer monitoring and training by contractors

It was observed that contractors keep registers and inventories of all contracted farmers, and for efficient monitoring frequent, visits during crop growing periods, harvesting and marketing are conducted. Participants indicated that frequencies of such visits are high during harvesting and marketing periods. On training farmers' responses were overwhelmingly positive. 80% of the contracted farmers in the district subscribed to the fact that contractors effectively train them; particularly on the best practices to boost productivity of the crop and the enterprise's cash-flow management. Monitoring of field operations was highlighted as an important activity by contractors though it suffered the least frequencies due to transport challenges during the peak of rain seasons. Training of farmers was viewed as a continuous process by most contractors as it has been incorporated into extension systems as one of the most critical mandates of Agritex. Other stakeholders such as NGOs e.g. Caritas also indicated that they facilitated contract management and market linkage trainings to Agritex personnel.

3.7 Summative Analysis of Red Sorghum productivity, income generating capacity and impact on food security

Table 3.1: Red Sorghum productivity levels, income realised and impact on food security

	Category	Mean	P Value
Was input package provided enough	Contracted	1.79+/-0.42	0.000
	Un-contracted	1.96+/-0.19	
If not do you supplement with own inputs	Contracted	1.04+/-19	0.000
	Un-contracted	1.54+/-0.51	
Yield level (t/ha) 2013	Contracted	3.61+/-1.32	0.044
	Un-contracted	2.04+/-1.12	
Profit realised from sales of cowpeas 2013	Contracted	5.29+/-1.18	0.041
	Un-contracted	3.89+/-1.32	
Food security	Contracted	1.54+/-0.69	0.039
	Un-contracted	2.36+/-0.73	

Yield/Total Physical Product TPP/Ha

Yield level showed statistical difference between contracted and Un-contracted farmers at 0.044 p value. Red sorghum yield was significantly higher for Contracted respondents (1.44t/ha) than Un-contracted respondents (0.72t/ha). The results show that contract farming programmes have been successful, in

increasing yield for vulnerable households who benefited from such schemes. The findings augur well with similar studies done on impacts of contract farming elsewhere. For instance, Bellemare, (2010) noted that small grain productivity under contract farming in most African states, has shown significant improvements on increase in area planted, yields and levels of income generated by smallholder farmers. The author therefore attributed this positive development mainly to input packages and support availed to producers of specialised crops under contract farming.

Profit realised from sales

Profit realised presented a significant level of 0.041 (p value). This approves to the fact that contract farming and services provided under the scheme have positively affected income levels at household level. However the fact that the p value is close to 0.05 could mean that higher profit margin could have been caused by other factors beside contract farming packages. However similar research done in countries like Uganda, Ethiopia and Kenya noted that contracting small holder farmers significantly contributed in raising incomes of participating households. This was attributed to increased access to resources such as inputs, information and coordination of viable marketing structures for contracted produce. Brink and Berndt, (2009) also noted that small grains which were perceived as women's crops have proved that they are not only for cushioning food deficits during droughts in Africa, but can significantly contribute to income generation and poverty reduction in rural farming communities.

4 Summary

The study focused on contract farming as a critical agricultural business model for fostering development in Zimbabwe's smallholder farming communities, particularly those specialising in small grain production under the scheme. The study revealed that farmers were faced with a multiple challenges ranging from lack of viability and uncertainty as evidenced by declining production levels and poorly coordinated marketing structures of contracted produce. It was established that a few thriving agribusiness firms, operating under unfavourable economic conditions were reducing levels of contract farming support availed to farmers and at some cases suspending or totally terminating contracts, hence compromising the general performance of the business. As such, it was observed that contract farming as an initiative aimed at boosting food security, reducing poverty and fostering development in developing nations has failed to yield desired outcomes as it was not fully supported by all stakeholders.

5 Conclusions

Generally farmers were finding contract farming to be of low profitability as shown on Figure 4.9. The low returns in sorghum contract farming were linked to low producer prices gazetted by the government

and the monopolistic nature of the marketing structure of all cereals in Zimbabwe. It was discovered that there is a direct relationship between cereal producer prices, imposed by the Government and contractors' ability to procure produce at better producer price as they tend to be guided by the gazetted price. Failure by contractors to purchase produce at viable prices compromises profitability of the enterprise. Inadequacies noted on inputs availed to farmers also contributes to low yields hence leading to low returns per unit area.

On appreciation of contractual terms it was established that contract documents were not availed to every farmer. Apparently, contracts were signed by group chairpersons who read and made an appreciation of the terms on behalf of other members. As farmers were actually contracted in groups it was observed that only chairpersons were informed about the contractual conditions while the rest were not appraised.

6 Recommendations

- Contractors should print the farming agreement documents in vernacular to enhance the understanding of its contents and implications by all farmers. The language barrier in the form of use of English as the only official imposes a barrier to communication which disadvantages the illiterate farmers in rural communities.
- Contractors should give adequate input packages per each contracted hectare if they desire to promote higher productivity, viability and loan recovery. The farmers who opt for contract farming are resource-poor and cannot supplement the inadequate packages.
- In order to address the challenge of low red sorghum contract farming profitability as a result of low producer prices, the government can provide a support price or a subsidy which cushions the cost of inputs.
- The government should liberalise the marketing of cereals as its monopolistic nature of marketing structure does not attract viable prices for the farmer. Producer price fluctuations again impacts negatively on farmers' loyalty in contract farming.

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