Full Length Research Paper

Trends in livelihoods options over a five year period: A case of Murewa smallholder farmers

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Inter and intra seasonal trends in livelihoods options have been reported at country and rarely at ward level in Zimbabwe. Evidence based on local level trends in livelihoods options is rare. This study thus reviewed data on livelihoods activities based on the Agriculture Food Security Monitoring System (AFSMS) surveillance system. It was conducted by the Department of Crop and Livestock Production formerly Department of Agricultural Technical and Extension Services (AGRITEX) in four wards of Murewa District over 5 seasons from 2010 to 2014. It was done to document local trends in livelihoods options over time for improved food security. The review consulted AGRITEX records, secondary data from web and other public documents. The results showed that income generating activities and livelihoods options at local ward level fluctuate within the farming season and across seasons. However, contributing factors were not ascertained in this study. Casual labour and market gardening were major sources of livelihoods in the wards under study in contrast to generalised extension reports which indicate crop production as a major livelihood option in the study district. The paper provides local level evidence on trends of livelihoods options and argues for diversified livelihoods coping strategies and adoption of extension messages that go beyond crop and livestock production to include other non–farm (off -farm) based livelihoods options such as brick moulding, arts and crafts.

Key words: Trends in livelihoods, socio-economic, extension, income generation, food security, local level.

INTRODUCTION

The sources of livelihoods in rural communities of Southern Africa are mainly agriculture-related and therefore have a bearing on the socioeconomic status of most developing countries (Speranza, 2010; Brown et al., 2012) including Zimbabwe. According to Kandlinkar and Risbey (2000) more than 60% of the population in Sub-Saharan Africa is employed in agriculture with a contribution of 30% to the Gross Domestic Product. In Zimbabwe approximately 68% of the population in the country resides in the rural areas relying on agriculture for income, food security and general well-being of the household members (ZimStat, 2013). However, their livelihoods are threatened with risks associated with socio economic and environmental factors that need periodical monitoring to avoid disasters at national and household level. Socio-economic factors include the low

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returns from agricultural related income activities and the unfavourable economic environment that prevailed during the period 2000-2008, with the latter seriously eroding the purchasing power of rural communities (ZimStat, 2013).

The low agriculture-related incomes result in high poverty levels despite the fact that there is diversity in sources of income and food in rural livelihoods. The income generating activities that rural communities are involved in can either be on farm or off farm. On farm activities include crop sales either cash or food, livestock sales, horticultural sales and non-farm activities include thatching, mining, crafts, wild fruit sales and brick moulding (Alobo, 2016; ZimVac, 2014). These activities directly and indirectly contribute to income generation and food security by making food more accessible and affordable.

Food security analysis has always focused on determining the household’s situation of meeting the 210 kilocalories/person/day by looking at the four pillars: food availability, food access, food utilization and stability (ZimVac, 2017). This can be done using a number of tools depending on set objectives. For instance in Zimbabwe surveillance or food assessment tools can be used. In the case of Zimbabwe, surveillance or assessment is carried out by a consortium of organizations working under the Zimbabwe Vulnerability Assessment Committee carry out the assessment annually. Food security recommendations are then announced at national level. Unfortunately these rarely cascade to household level for household specific recommendations.

Analysis has shown that in periods of food scarcity, affected households device coping strategies and in most cases they end up selling or consuming productive assets. Such coping strategies are categorized into stress, crisis and emergency livelihood coping strategies. Unfortunately, in most cases where such coping strategies involving the disposal of productive assets are implemented a households’ ability to recover is usually negatively affected (Scoones, 2009; CCDR, 2014). In some cases affected households resort to alternate livelihoods options which are usually not supported by existing agricultural extension services.

In 2018, the proportion of households adopting livelihood based coping strategies was 37% whilst 63% were not adopting coping strategies at country level (ZimVac, 2018). According to the same report, Mashonaland East province had the highest proportion of households in rural areas engaged in livelihood based coping strategies. Of these households, 16% are engaged in emergency livelihood based coping strategies; as such Mashonaland East province was targeted for this study. It is with this background that this paper seeks to analyse the trends in livelihoods options to enhance extension programming as agricultural extension is one of government’s support systems. The main objective of the study is to review the trends in livelihoods based options in the wards under study over a five year period (2010-2014) in Murewa district of Mashonaland East province targeting households at local level. The study reviewed data from the food surveillance system of the Department of Agricultural Technical and Extension Services (AGRITEX) 2010-2014, which had relatively consistent datasets on livelihoods in order to provide evidence on trends in livelihoods at local level.

Institutional setting

The Department of Crop and Livestock Production (AGRITEX) is mandated to provide technical and advisory services, to disseminate technologies and to provide market-oriented extension for sustainable farming and to ensure agricultural development in Zimbabwe (Ministry Strategic Plan, AGRITEX Vision and Statement) (AGRITEX, 2009). The department achieves its mandate through a number of extension approaches operated by different branches. One of the activities used to inform stakeholders on food security issues is carried out by the Crop Production Branch through its Food Security Surveillance System (FSSS), which has been in existence since the late 1990s. The system was set up to provide early warning information on the food security situation during a marketing year thereby assisting policy makers with information for timely decision making. Overall, the system attempts to monitor the livelihoods of rural communities particularly the impact of both government and partner agricultural interventions in addressing the challenges faced by the communities. The FSSS involves data collection by ward-based Officers in all wards of the country through questionnaires. Responses are subsequently submitted through the different levels within the organization (ward, district, provincial) for final compilation at national level. However, it needs to be highlighted that at each level, the analysis of data is recommended as a means of building ownership and quick actions to ward, district, provincial-based challenges.

METHODOLOGY

Description of study site- Murewa District

Murewa District is one of the nine administrative districts in Mashonaland East province of Zimbabwe. (Figure 1)

The district has 30 wards. However, the Agriculture Food Security Monitoring System (AFSMS) was conducted in randomly selected wards which are: Wards 2 (Cheunje), 9 (Tsokoto), 15(Kadzere) and 19 (Mukarakate West). Murewa District in the former agro-ecological regions Ila, Iib and III and receives an average annual rainfall of 850-1000 mm thereby making it favourable for agricultural production of both field and horticultural crops (ZimVac, 2011).

The district has two livelihood zones; Highland Prime Communal
and Resettlement (HPCR) covering Wards 23 and 29 and Highveld Prime Communal (HVPC) covering the bulk of the district. For this paper, more emphasis will be on the HVPC zone in which all the four sites lie. The HVPC livelihood zone contains some of the most productive communal areas in the country. According to the ZimVac (2011), although in some cases the agricultural potential is affected by the high population density and poor soils.

The district’s proximity to the capital city Harare and access to the country’s main road infrastructure has greatly influenced the marketing of agricultural produce by households in the area. This paper is based on the review of data from the Agriculture Food Security Monitoring System (AFSMS) from 2010-2014 for four wards of Murewa district. It discusses the proportion of households engaged in different livelihood options; the sources of income and the related proportion contribution to household needs and makes appropriate extension recommendations.

The surveillance system

The Agriculture and Food Security Monitoring System (AFSMS) is a surveillance system implemented by the Crop Production Branch of AGRITEX since 2007 for the provision of periodic updates on the agriculture and food security situation through data collected on agriculture and food security indicators from 226 wards covering 57 districts of Zimbabwe. The sites were selected based on the agro-ecological regions, livelihood zones and food insecurity levels. The AFSMS has been implemented in collaboration with several organizations over the years which included; the Food and Agriculture Organization (2007-2014), Action contre la Faim (2007), Famine Early Warning Systems Network (2009-2011) and Caritas Zimbabwe (2011-2012).

Since its inception in 2007, the AFSMS has expanded to cover 57 districts by 2014 from just 12 districts in the inception year. Agricultural Extension Workers (AEWs) in each of the 226 wards collect data on agriculture and food security indicators during the first week of the scheduled month in all sites in order to compare information generated over space and time. Quality control is managed through the respective Agricultural Extension Supervisors (AES) and District Agricultural Extension Officers (DAEHO). Data are collected using a focus group discussions guide at three – five sites within the ward to enable the intra - ward variability to be captured. The data from the sites within the ward is then averaged to give a ward picture. A copy of the completed questionnaire from each site is submitted to Head Office for data entry and analysis whilst three copies are kept as records at ward, district and provincial levels.

Through the AFSMS, the Crop Production Branch produces various reports during the marketing year as a means of providing updates on the country’s food security situation. The reports generated from the various data sets are shared with relevant stakeholders whilst the remaining data is filed with little reference for development at local level. It is this data that was reviewed and informed the arguments in this paper.

The desk study

A desk study was conducted to review secondary data stored as hard copies in files for the trend analysis and this was supported by in-depth interviews with key informants from Murewa District. The study randomly selected and reviewed 60 completed questionnaires of data representing responses from 60 farmers. The questionnaires used for the trend analysis were for the period 2010 to 2014 for the three months (February, June and October). The sections on livelihoods options and income generating projects were analysed in SPSS and in Excel for frequencies. Emerging narrative statements from responses were grouped into themes and merged in the data analysis. Data was presented graphically and in tables.

RESULTS AND DISCUSSION

Livelihoods options

Casual labour and market gardening were the dominant sources of livelihoods for the communities in the four selected wards during the review period (Table 1). Households engaged in these two livelihoods generally recorded a decline in 2013 and 2014. Households were mostly active in non-farm based livelihoods options such as general trading and brick moulding during the off peak farming season June to October. The marketing window for field crop sales is normally June to September, and therefore the proportion of households engaged in field crop sales was expected to reach a peak during June but was not consistent. The majority of households, 25 and 22% were engaged in crop sales during the June period in 2011 and 2012 respectively. This could be attributed to favourable production and economic environment that prevailed during that farming season (ZimVac, 2012).

The decline in the proportion of households reporting market gardening as a livelihood source may be attributed to climate variability resulting in low levels of water for irrigation. Whilst more than 40% of respondents were engaged in market gardening during the 3rd period (October report) of 2010, 2011; and 2012, only 31% and 26% of respondents were engaged in the same livelihoods option in 2013 and 2014, respectively. The findings are in line with ZimVAC assessments, which
indicate that generally, casual labour tends to be a major livelihood source especially among the poor households (Table 1).

The few households involved in small stock production during the five year period are in tandem with previous ZimVac assessments. Access to and engagement in small livestock production is low in the study area yet this could provide an alternate source of livelihoods for farmers. There is limited diversity in livelihood options and with those available tending to be seasonal. Therefore, this has a bearing on coping and adaptation strategies of the households. Since there is limited income generating activities, poor households are deprived of other means of survival except hiring out labour.

The Zimbabwe National Nutrition Survey -ZNNS (2018) reported rural development challenges related to limited livelihood options. Nationally, the report shows that only 37% of households are engaged in at least one livelihoods coping strategy. Vulnerable households are mostly exposed to shocks and weather-related stresses especially when there are few livelihoods options at their disposal (Zake et al., 2010; ZNNS, 2018).

**Table 1. Proportion of households by % in Murewa District engaged in livelihoods options 2010-2014.**

| Option               | 2010 | 2011 | 2012 | 2013 | 2014 | February | 2010 | 2012 | 2013 | 2014 | June | 2010 | 2012 | 2013 | 2014 | October |
|----------------------|------|------|------|------|------|----------|------|------|------|------|------|------|------|------|------|---------|
| Field crop           | 7    | 3    | 7    | 0    | 0    | 0        | 5    | 25   | 22   | 5    | 0    | 5    | 25   | 15   | 0    | 0              |
| Market gardening     | 32   | 30   | 35   | 25   | 24   | 38       | 41   | 43   | 33   | 27   | 45   | 46   | 44   | 31   | 26              |
| Poultry Keeping      | 10   | 7    | 7    | 10   | 6    | 8        | 8    | 8    | 10   | 7    | 7    | 7    | 7    | 6    | 8               |
| Small stock          | 0    | 6    | 3    | 3    | 3    | 0        | 5    | 2    | 2    | 2    | 11   | 2    | 2    | 0    | 2               |
| Casual labour        | 26   | 42   | 45   | 40   | 41   | 41       | 51   | 48   | 42   | 32   | 32   | 41   | 35   | 20   | 25              |
| General trading      | 20   | 16   | 17   | 10   | 22   | 18       | 17   | 21   | 18   | 25   | 24   | 10   | 12   | 22   | 10              |
| Brick moulding       | 0    | 0    | 0    | 0    | 0    | 0        | 5    | 0    | 0    | 2    | 5    | 14   | 10   | 19   | 6               |

**Trends in income generation activities as a source of livelihoods**

Extension agents consider income generation activities as activities that the households carry out in order to obtain extra income besides field crop enterprises. However, most of these; market gardening; poultry keeping, and small stock production are closely linked to field crop production and are on farm related. This narrow definition confines extension staff to consider only agricultural-based activities in contrast to the broader definition provided by (UNESCO, 1993) which includes non- farm based activities. In this study other income generating activities which are non-farm related were considered and these include brick moulding, general trading. These activities are employed as livelihood-based coping strategies in view of the socio-economic and environmental challenges faced by the communities (Brown et al., 2012).

Market gardening and casual labour are the major income generating activities reported in the assessment period. It is interesting to note that the average income to a household differ from period to period and from year to year. Average monthly income in US dollars from market gardening was always high during June coinciding with the peak period for market gardening in communal areas. The same trend was observed for casual labour except in 2014, where an increase was noted during February. Variations in income sources and levels were observed across the five years. This could be linked to the production levels, which are affected by the variability in the rainfall (Brazier, 2017).

**Contribution of income generating activities to total annual income**

Market gardening followed by casual labour had the highest contribution to total household income over the five years (Figure 2), since they are also the major income generating activities. The contribution to total household income remained relatively high from the two sources in the 5-year period with a slight decline in 2011 and 2013. Probably the cash for paying for casual labour was derived from marketing of garden produce.
Figure 2. Household responses on contribution of income generating activities to annual household income.

This may be an indication of the interdependency of these sources of income at community level. Crop sales have shown a general decline in the contribution to total income since 2011 whilst that of general trading (petty trading) has been on the increase for the same period.

For the period 2010-2014 market gardening and casual labour contributed between 20 to 40% of annual and household income. However in 2011 field crop production contributed 18% which was an increase in comparison with other years, but at the same time less than nationally reported contributions. According to ZimVac (2011), the contribution to the total income from crop sales for the poor and better off wealth groups at country level was reported at 19-22 and 47%, respectively.

Major livelihoods contributing to household income

The major livelihoods contributors to household income are market gardening and casual labour. Trends in average income sources at household levels for the survey periods are shown in Figures 2 and 3. According to ZimVac (2011), the average income generated by households during a marketing year ranged from USD100 to USD700 giving a monthly range of 8-58 USD depending on the wealth status of the farmer, for all periods under assessment. From the two major income generating activities over the study period monthly income ranged from 18 USD to 48USD, which was within the national range. The lowest income was obtained in June 2010 and October 2013, probably due to unfavourable socio economic and political environment.

CONCLUSION AND RECOMMENDATIONS

Diversity in sources of livelihoods fluctuates from season to season and differs from household to household. Although this review did not focus on the factors contributing to these fluctuations, it is suffice to conclude that the fluctuations are major points of concern for both farmers and extension personnel. Most extension recommendations are blanket and generic and do not take into consideration farmer's circumstances and also extension does not consider non-farm livelihood coping strategies. There is need to promote alternate coping strategies which are non-farm based such as crafts, moulding bricks, petty trading and other income generating activities.

During the 5-year period, most households reported market gardening and casual labour as the main income sources. The two income sources provided most of the income throughout the study periods (February, June and October) for the 5 year period. This could have been attributed to the direct linkages between market gardening and labour requirements. Besides field crop production, households depended on other non-farm sources of income that vary within and across farming seasons and also at various degrees of implementation. As a result this should be considered at farmer level planning and in extension programming.

Contribution of the various livelihoods options to average
household income fluctuated over the years with non-farm based livelihoods options on the increase. In addition, the reliance on income from on-farm activities exposes communities to challenges related to climate change as they fail to cope and adapt. Other income sources such as remittances were not captured in the review since the focus was on income generating activities in which households were directly involved. This review indicated the need for diversification in livelihoods options not only across seasons but also within a season to cope with the ever increasing challenges faced by rural communities.

The study results show that casual labour as a source of income persistently contributed to household income for rural communities of Murewa in Zimbabwe, during intra and inter seasonal analysis. Casual labour as a source of income and its contribution to household incomes was on the increase in the study period as such it can contribute to a certain extent to raising the standards of living of the poor. Availability of casual labour in turn increases crop and livestock productivity and incomes of the better-off households who provide with work to be done and at the same time incomes of poor households hiring out labour are increased. On the other hand the study provided evidence on inter and intra seasonal trends in livelihoods options and challenges the current blanket extension messages for improved livelihoods.

The need for inclusion of extension advisory services that go beyond crop and livestock production cannot be overemphasised. As such the study recommends a shift in extension programming to include livelihoods coping strategies which are non-farm based. In this regard non-farm related livelihoods options such as brick moulding, petty trading, and arts and crafts can be included as alternate livelihoods options in extension programming. However, additional skills within the extension services as well as approaches that are multidisciplinary are needed. In view of the limited non-farm livelihoods options, extension service providers from different disciplines are recommended to work together and collaborate on provision of a basketful of livelihoods-based coping strategies.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests

REFERENCES

AGRITEX (2009). Vision and Mission Statement Department of Agricultural Technical and Extension Services Harare. Departmental Reports Unpublished, 2009.

Brazier A (2017). Climate Change in Zimbabwe: a guide for planners and decision makers Harare Zimbabwe, Second edition, Konrad Adenaur Stiftung, Harare, pp. 58-80; www.kas.de/wf/doc/kas_51092-544-2-30.pdf 171218152104

Brown D, Chanakira R, Dhlwayo M, Dodman D, Masiwa M, Muchadennyika D, Mugabe P, Zvigadza S (2012). Climate change impacts, vulnerability and adaptation in Zimbabwe, working paper series no 3 IIED, Zimbabwe.

Copenhagen Centre for Development Research (CCDR) (2014). Rural livelihoods Trends and vulnerability to climate change: Evidence from Nepal. Copenhagen Centre for Development Research Policy Brief no. 63 De. 2014.

Kandlinkar M, Risbey S (2000). in Nhachema C, Hassan R (2007). Micro-level Analysis of Farmers Adaptation to Climate Change in Southern Africa. International Food Policy Research Institute Discussion Paper 00714, August 2007.

Scoones I (2009). Livelihoods perspectives and rural development The Journal of Peasant Studies 36(1):171-196. DOI 1080/03066150902820503.
Speranza IC (2010). Resilient adaptation to climate change in African agriculture. Bonn: DIE 2010 ISBN 978-388985-489-6 German development institute. https://www.diegdi.de/uploads/media/studies_54pdf

UNESCO (1993). Income generating programmes APPEAC training materials for continuing education. Personnel (ATCP-CE). www.unesco.org/education/pdf/413_48a.pdf

Zake J, Kiconcon S, Kimbugwe C, Drani H, Andama G (2010). Climate change in Uganda: Insights of long term adaptation and building community resilience. Environmental Alert Kampala. www.slideshare.net/JoshuaZake/climate-change-issues-paper

Zimbabwe national nutrition survey (ZNNS) (2018). Zimbabwe national nutrition survey/2018. www.fnc.org.zw.

ZimStat (2013). Zimbabwe Statistics Agency Poverty and Poverty Datum Line Analysis in Zimbabwe 2011/2012 Census. www.zimstat.co.zw/sites/default/Population/National_Report.pdf

ZimVac (2011). Food and Nutrition Council Zimbabwe Vulnerability Assessment Committee Zimbabwe Rural Livelihood Baseline Profile. http://fews.net/sites/default/files/ZW%20LH%20baseline%20profiles%20synthesis%20final%20complete%20reduced.pdf

ZimVac (2014). Food and Nutrition Council Zimbabwe Vulnerability Assessment Committee Rural Livelihood Assessment Report. https://www.wfp.org/..../ZimVAC

ZimVac (2012). Food and Nutrition Council Zimbabwe Vulnerability Assessment Committee Rural Livelihood Assessment Report. https://fews.net/sites/default/files/documents/reports/ZW%20LH%20baseline%20profiles%20final%20complete%20full.pdf

ZimVac (2017). Food and Nutrition Council Zimbabwe Vulnerability Assessment Committee Rural Livelihood Assessment Report. https://www.wfp.org/publications/zimbabwe-vulnerability-assessment-rural-livelihoods-assessment-july-2017

ZimVac (2018). Vulnerability Assessment Committee Results 2018. https://reliefweb.int/report/malawi/malawi-vulnerability-assessment-committee-results-2018